

Review

Naturally Occurring Iridoids. A Review, Part 1

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A compilation of new naturally occurring iridoid glycosides, iridoid aglycones, iridoid derivatives and bis-iridoids reported during 1994–2005 is provided with available physical and spectral data: mp, $[\alpha]_D$, UV, IR, ¹H- and ¹³C-NMR as well as natural source with family and references. 418 compounds with 202 references are cited.

Key words iridoids; physical and spectral data; source

Iridoids are secondary metabolites of terrestrial and marine flora and fauna and are found in a large number of plant families usually as glycosides. Structurally they are cyclopentano [c] pyran monoterpenoids and biogenetically and chemotaxonomically they provide a structural link between terpenes and alkaloids.¹⁾ A bicyclic H-5/H-9 β , β -cis-fused cyclopentanopyran ring system **1a** is the most common structural feature of these compounds, however several enantiomeric iridoids also exist in nature.^{2,3)} Cleavage of cyclopentane ring of iridoids produces seco-iridoids **1b**, while cleavage of pyran ring produces iridoid derivatives **1c** and hence cyclopentane ring is known as basic skeletal ring of iridoids. In plant kingdom, these are derived from 9-hydroxy nerol by phosphorylation followed by cyclisation, oxidation and glycosidation in several steps.¹⁾ Possibly iridodial **1e** or 8-*epi*-iridodial **1f** is the predecessor of iridoids in many plant families.^{81,200,201)} Iridoids are present in a number of folk medicinal plants used as bitter tonics, sedatives, antipyretics, cough medicines, remedies for wounds, skin disorders and as hypotensives. This fact encouraged to investigate the bioactivities of these phytochemicals. Intensive study of their bioactivity revealed that these compounds exhibit a wide range of bioactivity: cardiovascular, antihepatotoxic, choleric, hypoglycemic and hypolipidemic, antiinflammatory, antispasmodic, antitumor, antiviral, immunomodulator and purgative activities.⁴⁾ Chemotaxonomically they are useful as markers of several genus in various plant families, such as, aucubin **2** of *Plantago* (Plantaginaceae),^{5,6)} asperuloside **3** of *Galium* (Rubiaceae)⁷⁾ and aucuboside (aucubin) **2** and harpagide **4** of *Scrophularia* (Scrophulariaceae).⁸⁾

Several review articles on different aspects of iridoids are available elsewhere. The compilation of iridoids are provided in four review articles, namely of El-Naggar and Beal,⁹⁾ which covered the new iridoids reported in the literature upto January, 1980; of Boros and Stermitz,^{3,10)} which covered the new iridoids reported during 1980–1989 and of Hazimi and Alkathlan,¹²⁾ which covered the new iridoids reported during 1990–1993. Among these four the former three review articles presented the iridoids with structures and available

physical and spectral data.

The present review is a compilation of new iridoids namely, iridoid glycosides, iridoid aglycones, iridoid derivatives and bis-iridoids that have appeared in the literature during the period, 1994–2005, with their physical constants, spectral data, plant source and references. For each compound these data were listed in the following order: name; structure; molecular formula; calculated molecular weight using most abundant isotopic atoms of C, H, O, S, Cl; melting point ($^{\circ}\text{C}$); optical rotation (concentration, solvent); UV (solvent, λ_{max} in nm, log ϵ); IR (medium, absorption band in cm^{-1}); ¹H-NMR (spectrometer frequency, solvent, chemical shift values in δ ppm, starting with H-1 and listed in order); ¹³C-NMR (spectrometer frequency, solvent, chemical shift in δ values starting with C-1 and listed in order); plant source (family); reference(s). In ¹³C-NMR assignments with same superscript the δ values may be interchanged. MS data is omitted although it was reported in the referenced papers because in most cases, the fragmentation pattern is not diagnostic of skeletal structure. Data for derivatives were not usually listed unless the derivative rather than the free compound was isolated. The seco-iridoids and detailed bioactivity of the iridoids will be published later on. The main aim of this review is to provide knowledge to researchers for rapid identification of isolated iridoids by comparison of physical and spectral data. The ¹H-NMR data have been rounded to the second decimal point and the ¹³C-NMR in to the first decimal point. The molecular weight data have been rounded in to the fourth decimal point. Numbering of iridoid skeleton and of the most common substituents is given in Fig. 1. The substituent on the C-1 of the aglycone portion is given the single prime (') designation, while the additional substituents are designated as double prime ("), triple prime (""), etc., according to their substitution position on the main skeleton, except in cases of substituents on other substituents. The designation of substituents on other substituents is done by succeeded primes; for instance a coumaroyl on sugar unit at C-1 will be designated double prime and a sugar on coumaroyl unit as triple prime (e.g. **1d**). For bis-iridoids, the monomeric units

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are designated as parts a and b, and then these units are numbered as per usual numbering. Cinnamoyl, coumaroyl, caffeoyl, feruloyl, isoferuloyl groups are in the *trans* configuration unless otherwise stated. Some abbreviations used in representation of structures are: glc: β -D-glucopyranosyl; rha: α -L-rhamnopyranosyl; xyl: β -D-xylopyranosyl; api: β -D-apiofuranosyl; α -gal: α -D-galactopyranosyl; fru: β -D-fructofuranosyl; Me: methyl; OMe: methoxy. Suspected errors in a numbering of an unit were not corrected unless there was some ambiguity in the numbering of a particular compound.

In Table 1, new iridoids are arranged in the list in a fashion similar to that of El-Naggar and Beal,⁹ and of Boros and Stermitz.^{3,10} Group 1 contains iridoids with an eight-carbon skeleton; Group 2 contains iridoids with a nine-carbon skeleton and is further divided into subgroups depending on whether the ninth carbon is attached to C-4 (Group 2a) or C-8 (Group 2b); Group 3 contains iridoids with ten-carbon

skeletons and subdivided into four subgroups; Group 4 consists of iridoid aglycones; Group 5 contains iridoid derivatives; and Group 6 contains bis-iridoid glycosides. The oxidation state of C-10 and C-11 (Fig. 1) is used in the arrangement of compounds in all groups except Group 6. For instance, a C-10 or a C-11 Me group precedes one with C-10 or C-11 CH₂OH group, and a C-11 Me and a C-10 Me groups precedes one with a C-11 Me and C-10 CH₂OH groups, which precedes with a compound with a C-11 CH₂OH and a C-10 Me groups. In Table 2, the alphabetical index of the iridoids (Table 1) is provided.

In spite of exhaustive literature searches, some new iridoids may be omitted in the list because of non-availability of the published papers and hence this review should not be used as the only source for determining the new iridoids reported during the period of review.

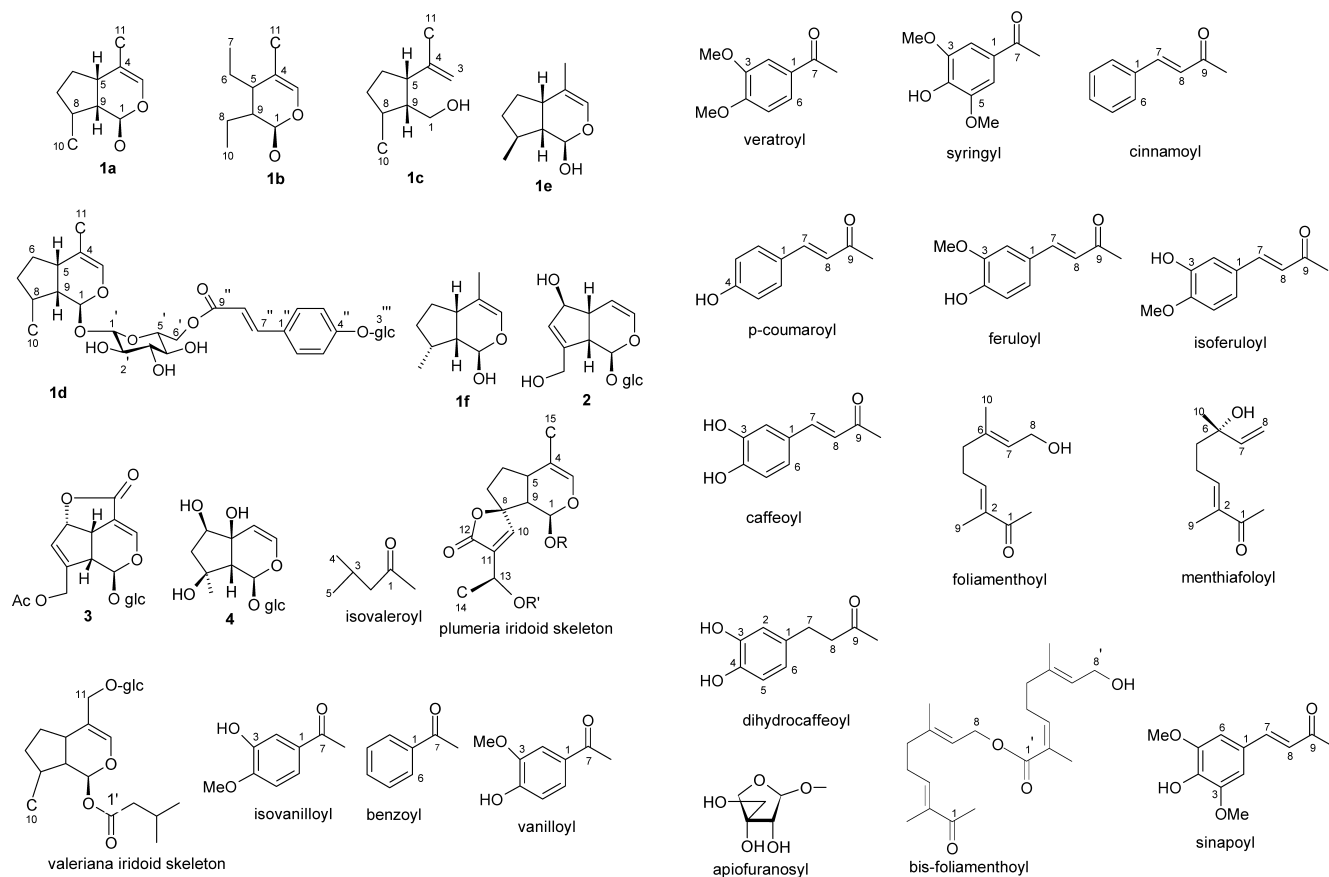


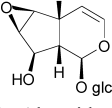
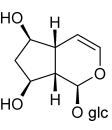
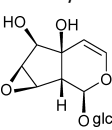
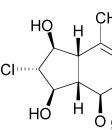
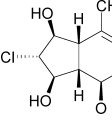
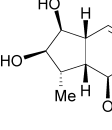
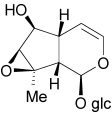
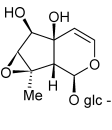
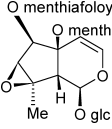
Fig. 1

Biswanath Dinda was born on August 4, 1947 in India. He received his B.Sc. (1967), M.Sc. (1969) and Ph.D. (1974) from the University of Calcutta. Then he joined as a Lecturer in Chemistry in an undergraduate college of Burdwan University. He carried out his post doctoral research work in the group of Prof. J. L. Beal, Department of Pharmacognosy, Ohio State University, USA for the period 1976–1978 on interferon inducers. He joined as a Senior Lecturer in Chemistry in Calcutta University Post-Graduate Centre, Agartala in 1981 and became Reader later on. He was appointed as Professor of Chemistry in the Department of Chemistry, Tripura University in 1993 and is holding this position till now. Last couple of years he was busy in several administrative activities like Head, Department of Chemistry; Dean, Faculty of Science; Senate and Syndicate member of the University. His current research interest is natural products chemistry.



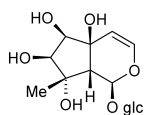
Biswanath Dinda

Table 1. List of New Iridoids

Group-1 (8-Carbon skeleton)	
<p>1. Isounedoside</p> 	<p>$C_{14}H_{20}O_9$; 332.1107; $[\alpha]_D^{20} -52.0^\circ$ ($c=0.35$, MeOH); 1H-NMR (D_2O): 5.35 (d, 1.2, H-1), 6.14 (dd, 6.3, 1.8, H-3), 4.72 (dd, 6.3, 1.2, H-4), 2.86 (ddd, 8.7, 6.3, 1.8, H-5), 3.48 (d, 2.1, H-6), 3.52 (dd, 2.1, 1.5, H-7), 4.06 (dd, 8.1, 1.5, H-8), 1.78 (ddd, 8.7, 8.1, 1.5, H-9), 4.58 (d, 11.7, H-1'), 3.12 (dd, 9.2, 7.9, H-2'), 3.19–3.41 (m, H-3', 4', 5'), 3.54–3.78 (m, H₂-6'), ^{13}C-NMR (D_2O): 97.0 (C-1), 141.8 (C-3), 104.2 (C-4), 37.2 (C-5), 79.2 (C-6), 59.4 (C-7), 56.6 (C-8), 42.8 (C-9), 100.2 (C-1'), 73.7 (C-2'), 76.7 (C-3'), 70.4 (C-4'), 77.0 (C-5'), 61.5 (C-6'). <i>Thunbergia grandiflora</i> (Acanthaceae).¹³</p>
<p>2. Alatoside</p> 	<p>$C_{14}H_{22}O_9$; 334.1263; crystals; mp 113–116 °C; $[\alpha]_D^{20} -147.5^\circ$ ($c=0.3$, EtOH); 1H-NMR (250 MHz, D_2O): 5.49 (d, 3.0, H-1), 6.26 (dd, 6.5, 2.1, H-3), 4.91 (dd, 6.5, 2.1, H-4), 2.69 (dm, 7.5, H-5), 4.06 (m, H-6), 2.50 (m, H-7), 1.58 (bd t, 14.0, 6.0, H-7), 4.23 (q, 6.9, H-8), 2.46 (m, H-9), 4.82 (d, 8.3, H-1'), 3.33 (dd, 9.5, 8.3, H-2'), 3.53 (t, 9.5, H-3'), 3.43 (t, 9.5, H-4'), 3.51 (ddd, 9.5, 6.0, 2.5, H-5'), 3.95 (dd, 12.5, 2.5, H-6'), 3.75 (dd, 12.5, 6.0, H-6'); ^{13}C-NMR (62.5 MHz, D_2O): 94.8 (C-1), 140.3 (C-3), 105.1 (C-4), 41.9 (C-5), 72.9 (C-6), 48.3 (C-7), 76.4 (C-8), 40.0 (C-9), 99.2 (C-1'), 73.5 (C-2'), 76.5 (C-3'), 70.4 (C-4'), 77.0 (C-5'), 61.5 (C-6'). <i>Thunbergia alata</i> (Acanthaceae).¹⁴</p>
<p>3. 3'-O-β-Glucopyranosylstilbericoside</p> 	<p>$C_{20}H_{30}O_{15}$; 510.1584; amorphous powder; $[\alpha]_D^{19} -105.3^\circ$ ($c=0.69$, MeOH); 1H-NMR (400 MHz, CD_3OD): 5.21 (d, 8.7, H-1), 6.37 (d, 6.1, H-3), 4.92 (d, 6.1, H-4), 4.06 (d, 1.5, H-6), 3.53 (m, H-7), 3.62 (d, 2.7, H-8), 2.45 (d, 8.7, H-9), 4.71 (d, 8.0, H-1'), 3.25–3.47 (m, H-2', 2'', 3', 3'', 4', 4'', 5', 5''), 3.84–3.91 (m, H₂-6', 6''), 4.58 (d, 7.8, H-1''); ^{13}C-NMR (100 MHz, CD_3OD): 96.5 (C-1), 143.1 (C-3), 108.2 (C-4), 73.6 (C-5), 79.2 (C-6), 59.4 (C-7), 56.3 (C-8), 50.7 (C-9), 100.0 (C-1'), 74.1 (C-2'), 87.4 (C-3'), 70.1 (C-4'), 77.9 (C-5')^a, 62.7 (C-6'), 105.3 (C-1''), 75.6 (C-2''), 78.1 (C-3'')^a, 71.6 (C-4''), 78.2 (C-5'')^a, 62.7 (C-6''). <i>Thunbergia laurifolia</i> (Acanthaceae).¹⁵</p>
Group-2a (9-Carbon skeleton; ninth carbon on C-4)	
<p>4. Mentzefolol</p> 	<p>$C_{15}H_{23}O_{10}Cl$; 398.0980; isolated as heptaacetate; $[\alpha]_D^{20} -39.3^\circ$ ($c=1.7$, $CHCl_3$); 1H-NMR (200 MHz, $CDCl_3$): 5.25 (d, 2.2, H-1), 6.48 (br s, H-3), 2.41 (dddd, 8.7, 1.6, 1.3, 0.8, H-5), 5.21 (br s, H-6), 4.09 (ddd, 5.2, 2.6, 1.6, H-7), 5.30 (dd, 5.2, 0.9, H-8), 2.53 (ddd, 8.7, 2.2, 0.9, H-9), 4.83 (d, 8.6, H-1'), 4.96 (dd, 9.6, 8.6, H-2'), 5.19 (t, 9.6, H-3'), 5.05 (t, 9.6, H-4'), 3.88 (ddd, 9.6, 5.4, 2.2, H-5'), 4.18 (dd, 12.5, 2.2, H-6'), 4.31 (dd, 12.5, 5.4, H-6'), 1.97, 1.98, 2.01, 2.03, 2.05, 2.06, 2.07 (each s, 7×Ac); ^{13}C-NMR (50 MHz, $CDCl_3$): 90.9 (C-1), 140.1 (C-3), 109.9 (C-4), 37.0 (C-5), 80.1 (C-6)^a, 64.5 (C-7), 80.6 (C-8)^a, 44.8 (C-9), 63.4 (C-11), 96.5 (C-1'), 71.0 (C-2'), 72.7 (C-3'), 68.7 (C-4'), 73.0 (C-5'), 62.1 (C-6'), 20.9, 21.0, 21.4×2, 21.6×2, 21.8, 169.6, 169.9, 170.2×2, 170.4, 170.9×2, 171.1 (7×Ac). <i>Mentzelia cordifolia</i> (Loasaceae).¹⁶</p>
<p>5. Glucosylmentzefolol</p> 	<p>$C_{21}H_{33}O_{15}Cl$; 560.1507; isolated as decaacetate; $[\alpha]_D^{20} -19.3^\circ$ ($c=1.1$, $CHCl_3$); 1H-NMR (200 MHz, $CDCl_3$): 5.28 (d, 2.4, H-1), 6.26 (br s, H-3), 2.64 (dddd, 8.5, 1.5, 1.3, 0.5, H-5), 5.20 (br s, H-6), 3.99 (ddd, 5.4, 2.6, 1.5, H-7), 5.23 (dd, 5.4, 0.8, H-8), 2.73 (ddd, 8.5, 2.4, 0.8, H-9), 4.80 (d, 8.2, H-1'), 4.82 (d, 8.6, H-1''), 4.91–5.17 (H-2', 2'', 3', 3'', 4', 4''), 3.63 (ddd, 9.5, 4.5, 2.3, H-5'), 3.67 (ddd, 9.7, 4.6, 2.2, H-5''), 4.08 (m, H-6', 6''), 4.17 (m, H-6', 6''); ^{13}C-NMR (50 MHz, $CDCl_3$): 91.3 (C-1), 140.3 (C-3), 110.0 (C-4), 37.0 (C-5), 80.3 (C-6)^a, 64.9 (C-7), 80.7 (C-8)^a, 45.2 (C-9), 68.8 (C-11), 96.3 (C-1'), 70.9 (C-2'), 72.5 (C-3')^b, 68.8 (C-4'), 73.1 (C-5'), 62.3 (C-6'), 100.9 (C-1''), 71.9 (C-2''), 72.8 (C-3'')^b, 68.8 (C-4''), 73.1 (C-5''), 62.5 (C-6''), 20.6, 20.8, 21.2×2, 21.4×2, 21.6×2, 21.8, 21.9, 169.7, 169.8×2, 170.1×2, 170.5×2, 170.7×2, 171.1 (10×Ac). <i>Mentzelia cordifolia</i> (Loasaceae).¹⁶</p>
Group-2b (9-Carbon skeleton; ninth carbon on C-8)	
<p>6. Angeloside</p> 	<p>$C_{15}H_{24}O_9$; 348.1420; amorphous form; $[\alpha]_D^{20} -37.0^\circ$ ($c=0.3$, MeOH); 1H-NMR (500 MHz, CD_3OD): 5.39 (d, 2.3, H-1), (dd, 6.2, 1.9, H-3), 4.37 (dd, 6.2, 2.9, H-4), 2.62 (dddd, 8.5, 2.4, 1.9, 1.9, H-5), 3.75 (dd, 3.9, 1.9, H-6), 3.71 (dd, 8.4, 1.9, H-7), 2.19 (ddq, 11.1, 8.4, 2.3, H-8), 2.69 (ddd, 11.1, 8.5, 2.3, H-9), 1.12 (d, 7.3, H₃-10), 4.61 (d, 8.1, H-1'), 3.24 (dd, 9.2, 8.1, H-2'), 3.37 (dd, 9.2, 9.2, H-3'), 3.30 (H-4'), 3.29 (H-5'), 3.88 (dd, 11.9, 1.6, H-6'), 3.67 (ddd, 11.9, 4.1, 1.6, H-6''); ^{13}C-NMR (125 MHz, CD_3OD): 95.0 (C-1), 140.3 (C-3), 105.7 (C-4), 36.7 (C-5), 80.0 (C-6), 77.4 (C-7), 37.3 (C-8), 38.7 (C-9), 13.9 (C-10), 98.8 (C-1'), 73.5 (C-2'), 76.4 (C-3'), 70.4 (C-4'), 77.0 (C-5'), 61.5 (C-6'). <i>Angelonia integerrima</i> (Scrophulariaceae).¹⁷</p>
<p>7. 5-Deoxyantirrhinoside</p> 	<p>$C_{15}H_{22}O_9$; 346.1263; amorphous powder; $[\alpha]_D^{20} -48.0^\circ$ ($c=0.2$, MeOH); IR (KBr): 3500, 1640, 1250; 1H-NMR (500 MHz, D_2O): 4.99 (d, 10.0, H-1), 6.30 (dd, 6.2, 1.6, H-3), 5.07 (dd, 6.2, 4.3, H-4), 2.21 (m, H-5), 3.99 (dd, 7.0, 1.5, H-6), 3.44 (br d, 1.5, H-7), 2.40 (dd, 9.5, 7.5, H-9), 1.49 (s, H₃-10), 4.80 (d, 8.0, H-1'), 3.82 (dd, 13.2, 4.3, H-6'), 3.66 (dd, 13.2, 2.0, H-6''); ^{13}C-NMR (125 MHz, D_2O): 95.8 (C-1), 145.2 (C-3), 104.2 (C-4), 38.4 (C-5), 78.9 (C-6), 66.0 (C-7), 64.9 (C-8), 45.5 (C-9), 17.7 (C-10), 99.3 (C-1'), 74.0 (C-2'), 77.0 (C-3'), 70.4 (C-4'), 76.6 (C-5'), 61.5 (C-6'). <i>Linaria arcusangelii</i>, <i>L. flava</i> subsp. <i>sardoa</i> (Scrophulariaceae).¹⁸ Reported earlier from deacetylation of genistifolin, a iridoid from <i>L. genistifolia</i>.¹⁹</p>
<p>8. 6'-O-(p-Coumaroyl)antirrhinoside</p> 	<p>$C_{24}H_{28}O_{12}$; 508.1580; isolated as pentaacetate; amorphous powder; mp 198–200 °C (EtOH); $[\alpha]_D^{25} +25.0^\circ$ ($c=0.12$, $CHCl_3$); UV (MeOH): 218, 284; IR (KBr): 3520, 2922, 1753, 1638, 1601, 1508, 1433, 1371, 1222, 1162, 1038, 957, 909; 1H-NMR (400 MHz, $CDCl_3$): 5.99 (s, H-1), 6.31 (d, 6.0, H-3), 5.16 (d, 6.0, H-4), 4.97 (d, 3.8, H-6), 3.51 (s, H-7), 3.18 (s, H-9), 1.49 (s, H₃-10), 4.94 (d, 7.8, H-1'), 4.96–5.31 (H-2', 3', 4'), 3.82 (m, H-5'), 4.33 (dd, 12.3, 4.2, H-6'), 4.39 (dd, 12.2, 2.3, H-6''), 7.58 (d, 8.7, H-2'', 6''), 7.14 (d, 8.7, H-3'', 5''), 7.70 (d, 15.6, H-7''), 6.42 (d, 16.0, H-8''); ^{13}C-NMR (100 MHz, $CDCl_3$): 94.1 (C-1), 141.4 (C-3), 106.7 (C-4), 73.1 (C-5), 78.0 (C-6), 63.1 (C-7), 62.7 (C-8), 52.0 (C-9), 17.0 (C-10), 96.2 (C-1'), 70.8 (C-2'), 72.3 (C-3'), 68.5 (C-4'), 67.3 (C-5'), 61.7 (C-6'), 131.4 (C-1''), 129.4 (C-2''), 122.2 (C-3''), 5''), 152.2 (C-4''), 117.2 (C-7''), 144.8 (C-8''), 166.3 (C-9''). <i>Caryopteris mongholica</i> (Verbenaceae).^{20,21}</p>
<p>9. 5-O-Menthafoloylkickxioside</p> 	<p>$C_{35}H_{50}O_{14}$; 694.320; amorphous powder; $[\alpha]_D^{20} -85.5^\circ$ ($c=1.47$, $CHCl_3$); 1H-NMR (250 MHz, $CDCl_3$): 5.64 (d, 1.0, H-1), 6.48 (d, 6.5, H-3), 5.49 (d, 6.5, H-4), 5.13 (d, 2.3, H-6), 3.70 (d, 2.3, H-7), 2.91 (d, 1.0, H-9), 1.45 (s, H₃-10), 4.68 (d, 7.6, H-1'), 3.87 (dd, 12.0, 2.4, H-6'), 3.70 (dd, 12.0, 5.0, H-6''), 6.75, 6.65 (each dt, 7.1, 1.2, H-3'', 3''), 2.17 (m, H₂-4'', 4''), 1.58 (m, H₂-5'', 5''), 5.87, 5.89 (each dd, 17.3, 10.7, H-7'', 7''), 5.20 (dd, 17.3, H₂-8'', H₂-8''), 5.07 (dd, 10.7, 1.2, H₂-8'', H₂-8''), 1.74 (br s, H₃-9'', H₃-9''), 1.28 (s, H₃-10'', H₃-10''); ^{13}C-NMR (62.5 MHz, $CDCl_3$): 92.6 (C-1), 144.6 (C-3), 103.1 (C-4), 79.7 (C-5), 76.2 (C-6), 63.8 (C-7), 64.3 (C-8), 49.3 (C-9), 16.8 (C-10), 98.6 (C-1'), 73.7 (C-2'), 76.1 (C-3'), 69.9 (C-4'), 75.2 (C-5'), 62.0 (C-6'), 166.6 (C-1''), 127.5 (C-2''), 144.8 (C-3''), 24.0 (C-4''), 41.1 (C-5''), 73.3 (C-6''), 143.7 (C-7''), 112.7 (C-8''), 12.6 (C-9''), 28.1 (C-10''), 167.3 (C-1'''), 128.3 (C-2'''), 144.6 (C-3'''), 24.2 (C-4'''), 41.1 (C-5'''), 73.6 (C-6'''), 143.5 (C-7'''), 113.0 (C-8'''), 12.5 (C-9'''), 27.6 (C-10'''). <i>Kickxia</i></p>

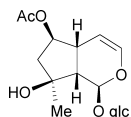
elatine, *K. spuria*, *K. commutata* (Scrophulariaceae).²²⁾

10. 8-*epi*-Muralioside



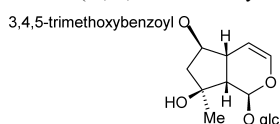
$C_{15}H_{24}O_{10}$: 364.1369; white amorphous powder; $[\alpha]_D^{20} -50.0^\circ$ ($c=0.2$, MeOH); IR (KBr): 3500, 1645, 1250; 1H -NMR (300 MHz, D_2O): 5.70 (d, 1.0, H-1), 6.31 (d, 6.5, H-3), 5.11 (dd, 6.5, 0.5, H-4), 4.10 (d, 4.2, H-6), 3.96 (d, 4.2, H-7), 2.68 (m, H-9), 1.68 (s, H_3 -10), 4.68 (d, 8.0, H-1'), 3.21 (dd, 9.2, 8.0, H-2'), 3.32 (t, 9.2, H-3'), 3.40 (t, 9.2, H-4'), 3.39 (ddd, 9.2, 4.6, 2.2, H-5'), 3.62 (dd, 12.5, 4.6, H-6'), 3.74 (dd, 12.5, 2.2, H-6''); ^{13}C -NMR (75 MHz, D_2O): 93.4 (C-1), 141.1 (C-3), 107.7 (C-4), 68.5 (C-5), 76.1 (C-6), 73.3 (C-7), 81.0 (C-8), 56.7 (C-9), 27.5 (C-10), 98.7 (C-1'), 70.4 (C-2'), 77.2 (C-3')^a, 73.6 (C-4'), 77.1 (C-5')^a, 61.5 (C-6'). *Linaria arcusangeli* (Scrophulariaceae).²³⁾

11. 6-*O*-Acetylajugol



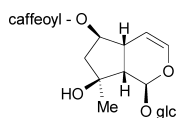
$C_{17}H_{26}O_{10}$: 390.1526; amorphous hygroscopic powder; $[\alpha]_D^{20} -103.5^\circ$ ($c=0.07$, MeOH); UV (MeOH): 210 (4.32), 232 (4.31); IR (KBr): 3400, 1725, 1665; 1H -NMR (300 MHz, CD_3OD): 5.47 (d, 2.5, H-1), 6.19 (dd, 6.3, 2.5, H-3), 4.92 (dd, 6.3, 2.5, H-4), 2.85 (dd, 9.1, 2.5, H-5), 4.80 (m, H-6), 2.18 (dd, 14.2, 6.5, H_{α} -7), 1.91 (dd, 14.2, 4.0, H_{β} -7), 2.51 (dd, 9.1, 2.5, H-9), 1.36 (s, H_3 -10), 2.04 (s, AcO-6), 4.66 (d, 7.8, H-1'), 3.19 (dd, 9.0, 7.8, H-2'), 3.26–3.40 (m, H-3'-5'), 3.65 (dd, 12.0, 5.6, H-6'), 3.89 (dd, 12.0, 1.9, H-6''); ^{13}C -NMR (75 MHz, CD_3OD): 93.4 (C-1), 141.0 (C-3), 104.6 (C-4), 39.2 (C-5), 80.5 (C-6), 47.8 (C-7), 79.0 (C-8), 51.6 (C-9), 25.9 (C-10), 21.1, 172.8 (AcO-6), 99.4 (C-1'), 74.8 (C-2'), 78.1 (C-3'), 71.8 (C-4'), 78.3 (C-5'), 62.9 (C-6'). *Leonurus persicus* (Lamiaceae).²⁴⁾

12. 6-*O*-(3'',4'',5''-Trimethoxybenzoyl)ajugol



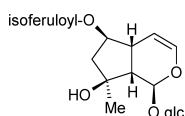
$C_{25}H_{34}O_{13}$: 542.1999; yellow amorphous powder; $[\alpha]_D -78.6^\circ$ ($c=0.3$, MeOH); IR (KBr): 3387, 1710, 1659, 1591, 1505, 1461, 1417, 1334, 1228, 1128, 764; 1H -NMR (400 MHz, CD_3OD): 5.51 (d, 2.5, H-1), 6.24 (dd, 6.3, 2.1, H-3), 4.99 (dd, 6.3, 2.7, H-4), 3.01 (m, H-5), 2.06 (m, H-6), 2.28 (dd, 14.3, 6.2, H-7), 2.06 (dd, 14.3, 3.4, H-7), 2.62 (br d, 9.0, H-9), 1.41 (s, H_3 -10), 4.66 (d, 7.9, H-1'), 3.18 (t, 8.7, H-2'), 3.36 (t, 8.7, H-3'), 3.26 (m, H-4'), 3.34 (m, H-5'), 3.65 (dd, 11.8, 5.8, H-6'), 3.88 (m, H-6'), 7.36 (br s, H-2'', 6''); ^{13}C -NMR (100 MHz, CD_3OD): 93.5 (C-1), 141.3 (C-3), 104.4 (C-4), 39.6 (C-5), 81.2 (C-6), 47.7 (C-7), 79.2 (C-8), 51.8 (C-9), 26.2 (C-10), 99.4 (C-1'), 74.8 (C-2'), 78.0 (C-3'), 71.7 (C-4'), 78.3 (C-5'), 62.9 (C-6'), 126.9 (C-1''), 108.2×2 (C-2'', 6''), 154.4×2 (C-3'', 5''), 143.7 (C-4'', 1), 167.4 (C-7''), 56.8×2 (3'', 5''-OMe), 61.2 (4''-OMe). *Tabebuia impetiginosa* (Bignoniaceae),²⁵⁾ *Maytenus laevis* (Celastraceae).²⁶⁾

13. 6-*O*-Caffeoylajugol



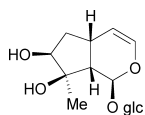
$C_{24}H_{30}O_{12}$: 510.1737; pale yellow amorphous powder; $[\alpha]_D^{30} -128.0^\circ$ ($c=1.2$, MeOH); 1H -NMR (400 MHz, CD_3OD): 5.49 (d, 2.4, H-1), 6.20 (dd, 6.2, 2.2, H-3), 4.95 (dd, 6.2, 2.9, H-4), 2.91 (br d, 9.3, H-5), 4.85 (m, H-6), 2.22 (dd, 13.6, 6.3, H-7), 2.00 (dd, 13.6, 4.6, H-7), 2.57 (dd, 9.3, 2.4, H-9), 1.37 (s, H_3 -10), 4.66 (d, 7.8, H-1'), 3.20–3.42 (m, H-2', 3', 4', 5'), 3.65 (dd, 12.0, 4.6, H-6'), 3.90 (dd, 12.0, 2.0, H-6'), 7.03 (d, 1.7, H-2''), 6.76 (d, 8.3, H-5''), 6.93 (dd, 8.3, 1.7, H-6''), 7.54 (d, 15.9, H-7''), 6.27 (d, 15.9, H-8''); ^{13}C -NMR (100 MHz, CD_3OD): 93.4 (C-1), 141.0 (C-3), 104.6 (C-4), 39.3 (C-5), 80.3 (C-6), 47.8 (C-7), 77.9 (C-8)^a, 51.6 (C-9), 26.0 (C-10), 99.3 (C-1'), 74.7 (C-2'), 78.1 (C-3')^a, 71.6 (C-4'), 79.1 (C-5'), 62.8 (C-6'), 127.7 (C-1''), 115.3 (C-2''), 146.9 (C-3''), 149.5 (C-4''), 116.6 (C-5''), 122.9 (C-6''), 146.7 (C-7''), 115.1 (C-8''), 169.0 (C-9''). *Phyllarthron madagascariense* (Bignoniaceae).²⁷⁾

14. 6-*O*-Isoferuloylajugol



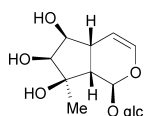
$C_{25}H_{32}O_{12}$: 524.1893; amorphous powder; $[\alpha]_D^{30} -132.0^\circ$ ($c=0.5$, MeOH); 1H -NMR (400 MHz, CD_3OD): 5.48 (d, 2.4, H-1), 6.25 (dd, 6.2, 2.1, H-3), 4.92 (dd, 6.2, 2.9, H-4), 2.92 (br d, 9.0, H-5), 4.98 (m, H-6), 2.23 (dd, 14.2, 6.3, H-7), 2.00 (dd, 14.2, 4.1, H-7), 2.57 (dd, 9.0, 2.4, H-9), 1.37 (s, H_3 -10), 4.66 (d, 7.8, H-1'), 3.19–3.45 (m, H-2', 3', 4', 5'), 3.67 (dd, 12.0, 4.6, H-6'), 3.90 (dd, 12.0, 2.0, H-6'), 7.05 (d, 1.9, H-2''), 6.95 (d, 8.3, H-5''), 7.02 (dd, 8.3, 1.9, H-6''), 7.57 (d, 15.9, H-7''), 6.35 (d, 15.9, H-8''), 3.88 (s, MeO-4''); ^{13}C -NMR (100 MHz, CD_3OD): 93.5 (C-1), 141.1 (C-3), 104.6 (C-4), 39.4 (C-5), 80.4 (C-6), 47.9 (C-7), 78.2 (C-8)^a, 51.7 (C-9), 26.1 (C-10), 99.4 (C-1'), 74.8 (C-2'), 78.0 (C-3')^a, 71.7 (C-4'), 79.0 (C-5'), 62.9 (C-6'), 128.9 (C-1''), 112.5 (C-2''), 151.5 (C-3''), 148.0 (C-4''), 116.4 (C-5''), 122.8 (C-6''), 146.6 (C-7''), 115.6 (C-8''), 168.8 (C-9''), 56.4 (MeO). *Phyllarthron madagascariense* (Bignoniaceae).²⁷⁾

15. Stegioside II



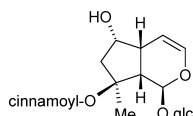
$C_{15}H_{24}O_9$: 348.1420; 1H -NMR (400 MHz, D_2O): 5.37 (d, 1.5, H-1), 6.05 (dd, 6.5, 1.8, H-3), 4.83 (dd, 6.5, 3.0, H-4), 2.67 (m, H-5), 1.62 (dt, 13.5, 4.8, H-6), 1.84 (ddd, 13.5, 9.0, 5.3, H_{β} -6), 3.66 (t, 5.3, H-7), 2.30 (br d, 10.2, H-9), 4.62 (partly covered by HDO signal, H-1'), 3.18 (dd, 9.0, 8.3, H-2'), 3.38 (t, 9.0, H-3'), 3.28 (t, 9.0, H-4'), 3.36 (m, H-5'), 3.59 (dd, 12.8, 6.0, H-6'), 3.80 (dd, 12.8, 2.3, H-6''); ^{13}C -NMR (100 MHz, D_2O): 93.9 (C-1), 137.6 (C-3), 109.3 (C-4), 25.3 (C-5), 36.3 (C-6), 78.3 (C-7), 78.9 (C-8), 48.0 (C-9), 21.4 (C-10), 98.4 (C-1'), 73.2 (C-2'), 76.1 (C-3'), 70.1 (C-4'), 76.7 (C-5'), 61.2 (C-6'). *Physostegia virginiana* ssp. *paemorsa* (Lamiaceae).²⁸⁾

16. Stegioside III



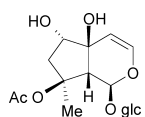
$C_{15}H_{24}O_{10}$: 364.1369; $[\alpha]_D^{25} -157.1^\circ$ ($c=0.19$, H_2O); 1H -NMR (400 MHz, D_2O): 5.40 (s, H-1), 6.10 (br d, 6.0, H-3), 4.93 (dt, 6.0, 1.8, H-4), 2.53 (br s, H-5, 9), 3.83 (dd, 3.8, 1.7, H-6), 3.60 (d, 3.8, H-7), 1.14 (s, H_3 -10), 4.63 (d, 7.8, H-1'), 3.16 (dd, 9.0, 8.3, H-2'), 3.38 (t, 9.0, H-3'), 3.26 (t, 9.0, H-4'), 3.36 (ddd, 9.8, 6.0, 2.3, H-5'), 3.58 (dd, 12.8, 6.0, H-6'), 3.79 (dd, 12.8, 2.3, H-6''); ^{13}C -NMR (100 MHz, D_2O): 93.5 (C-1), 138.9 (C-3), 105.8 (C-4), 34.9 (C-5), 77.0 (C-6)^a, 78.4 (C-7)^a, 77.7 (C-8), 47.9 (C-9), 21.8 (C-10), 98.4 (C-1'), 73.1 (C-2'), 76.1 (C-3'), 70.1 (C-4'), 76.6 (C-5'), 61.2 (C-6'). *Physostegia virginiana* ssp. *paemorsa* (Lamiaceae).²⁸⁾

17. 8-Cinnamoylmyoporoside

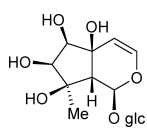


$C_{24}H_{30}O_{10}$: 478.1839; amorphous powder; $[\alpha]_D^{20} -28.6^\circ$ ($c=0.001$, MeOH); 1H -NMR (400 MHz, CD_3OD): 5.87 (d, 1.9, H-1), 6.34 (dd, 6.4, 2.0, H-3), 4.96 (m, H-4), 2.89 (m, H-5), 4.42 (dt, 6.2, H-6), 2.32 (dd, 13.2, 6.4, 1.0, H_{α} -7), 1.86 (dd, 13.2, 11.7, H_{β} -7), 2.64 (d, 8.1, H-9), 1.61 (s, H_3 -10), 4.66 (d, 7.9, H-1'), 3.18 (dd, 9.0, 7.9, H-2'), 3.37 (t, 9.0, H-3'), 3.26 (dd, 9.6, 9.0, H-4'), 3.31 (m, H-5'), 3.90 (dd, 12.1, 2.4, H-6'), 3.68 (dd, 12.1, 6.3, H-6'), 7.58 (m, H-2'', 6''), 7.39 (m, H-3'', 4'', 5''), 6.47 (d, 16.0, H-7''), 7.62 (d, 16.0, H-8''), ^{13}C -NMR (100 MHz, CD_3OD): 94.2 (C-1), 142.1 (C-3), 111.3 (C-4), 37.2 (C-5), 72.0 (C-6), 47.5 (C-7), 88.9 (C-8), 49.5 (C-9), 22.6 (C-10), 100.2 (C-1'), 74.8 (C-2'), 78.2 (C-3'), 71.7 (C-4'), 78.1 (C-5'), 63.1 (C-6'), 135.7 (C-1''), 129.3 (C-2'', 6''), 130.0 (C-3'', 5''), 131.6 (C-4''), 146.2 (C-7''), 120.0 (C-8''), 168.7 (C-9''). *Harpagophytum procumbens* (Pedaliaceae).²⁹⁾

18. 6-*epi*-8-*O*-Acetylharpagide

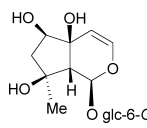


$C_{17}H_{26}O_{11}$: 406.1475; white amorphous powder; $[\alpha]_D -36.0^\circ$ ($c=0.0035$, MeOH); UV (MeOH): 204; 1H -NMR (D_2O): 5.95 (s, H-1), 6.51 (dd, 6.4, 1.0, H-3), 5.11 (d, 6.5, H-4), 4.27 (dd, 12.5, 6.6, H-6), 1.57 (dd, 13.5, 12.5, H_{α} -7), 2.24 (dd, 13.5, 6.6, H_{β} -7), 2.70 (s, H-9), 1.44 (s, H_3 -10), 2.03 (s, AcO-8), 4.71 (dd, 8.0, 1.0, H-1'), 3.25 (ddd, 9.3, 8.2, 1.1, H-2'), 3.44–3.50 (m, H-3', 5'), 3.38 (dd, 9.9, 10.0, H-4'), 3.71 (dd, 12.4, 5.6, H-6'), 3.91 (d, 12.4, H-6''); ^{13}C -NMR (D_2O): 95.8 (C-1), 145.3 (C-3), 104.0 (C-4), 74.6 (C-5), 77.8 (C-6), 46.1 (C-7), 86.6 (C-8), 56.7 (C-9), 23.5 (C-10), 24.3, 176.8 (OAc), 100.1 (C-1'), 75.2 (C-2'), 78.1 (C-3'), 72.3 (C-4'), 79.0 (C-5'), 63.3 (C-6'). *Caryopteris clandonensis* (Lamiaceae/Verbenaceae).³⁰⁾

19. Muralioside (7 β -Hydroxyharpagide)

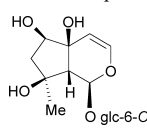
$C_{15}H_{24}O_{11}$; 380.1318; amorphous powder; $[\alpha]_D^{20} -43.0^\circ$ ($c=0.2$, MeOH); IR (KBr) 3500, 1650, 1240; 1H -NMR (500 MHz, D_2O) 5.61 (d, 0.7, H-1), 6.32 (d, 6.3, H-3), 5.05 (d, 6.3, H-4), 3.82 (d, 5.7, H-6), 3.77 (t, 5.7, H-7), 2.42 (br s, H-9), 1.34 (s, H_3 -10), 4.70 (d, 7.5, H-1'), 3.24 (dd, 9.2, 7.5, H-2'), 3.43 (t, 9.2, H-3'), 3.34 (t, 9.2, H-4'), 3.40 (ddd, 9.2, 5.8, 2.2, H-5'), 3.86 (dd, 13.0, 2.2, H_6 -6'), 3.66 (dd, 13.0, 5.8, H_6 -6'); ^{13}C -NMR (125 MHz, D_2O) 94.3 (C-1), 143.3 (C-3), 108.3 (C-4), 69.6 (C-5), 80.7 (C-6), 78.9 (C-7)^a, 80.4 (C-8), 56.3 (C-9), 25.8 (C-10), 100.0 (C-1'), 74.4 (C-2'), 78.1 (C-3')^a, 71.6 (C-4'), 77.3 (C-5')^a, 62.6 (C-6'). *Cymbalaria muralis* ssp. *pilosa* (Scrophulariaceae).³¹

20. 6'-O-E-p-Methoxycinnamoylharpagide



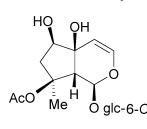
$C_{25}H_{32}O_{12}$; 524.1893; pale brown amorphous powder; $[\alpha]_D^{15} -26.7^\circ$ ($c=0.5$, MeOH); UV (MeOH): 226.4 sh, 286.5 (2.80), 306.5 sh; IR (?): 3400, 1690, 1625, 1600, 1515, 1100—1000; 1H -NMR (500 MHz, CD_3OD): 5.68 (br s, H-1), 6.34 (d, 6.4, H-3), 4.97 (dd, 6.8, 1.4, H-4), 3.70 (m, H-6), 1.81 (dd, 15.1, 4.4, H_{α} -7), 1.90 (d, 15.1, H_{β} -7), 2.56 (s, H-9), 1.17 (s, H_3 -10), 4.62 (d, 7.8, H-1'), 3.20—3.40 (m, H-2', 3', 4', 5'), 4.47 (dd, 11.2, 5.9, H-6'), 4.50 (dd, 11.2, 1.9, H-6'), 6.44 (d, 16.0, H-8''), 7.70 (d, 16.0, H-7''), 7.58 (d, 8.8, H-2'', 6''), 6.98 (d, 8.8, H-3'', 5''), 3.82 (s, MeO-4''); ^{13}C -NMR (100 MHz, CD_3OD): 93.2 (C-1), 141.0 (C-3), 108.6 (C-4), 72.9 (C-5), 78.5 (C-6), 47.2 (C-7), 90.0 (C-8), 59.7 (C-9), 23.5 (C-10), 99.6 (C-1'), 74.6 (C-2'), 78.1 (C-3'), 71.8 (C-4'), 56.1 (C-5'), 62.9 (C-6'), 168.1 (C-9''), 119.3 (C-8''), 146.6 (C-7''), 130.2 (C-1''), 131.2 (C-2''), 116.0 (C-3''), 162.4 (C-4''), 56.0 (MeO-4''). *Scrophularia buergeriana* (Scrophulariaceae).³²

21. 6'-O-Z-p-Methoxycinnamoylharpagide



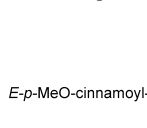
$C_{25}H_{32}O_{12}$; 524.1893; pale brown amorphous powder; $[\alpha]_D^{15} -29.1^\circ$ ($c=0.5$, MeOH); UV (MeOH): 226.4 sh, 286.0 (2.31), 306.2 sh; IR (?): 3400, 1690, 1625, 1600, 1515, 1100—1000; 1H -NMR (500 MHz, CD_3OD): 5.64 (br s, H-1), 6.31 (d, 6.4, H-3), 4.94 (dd, 6.8, 1.4, H-4), 8.69 (m, H-6), 1.81 (dd, 15.1, 4.4, H_{α} -7), 1.87 (d, 15.1, H_{β} -7), 2.53 (s, H-9), 1.19 (s, H_3 -10), 4.57 (d, 7.8, H-1'), 3.20—3.40 (m, H-2', 3', 4', 5'), 4.29 (dd, 11.2, 5.9, H-6'), 4.46 (dd, 11.2, 1.9, H-6'), 5.83 (d, 12.7, H-8''), 6.93 (d, 12.7, H-7''), 7.70 (d, 8.8, H-2'', 6''), 6.91 (d, 8.8, H-3'', 5''), 3.81 (s, MeO-4''); ^{13}C -NMR (100 MHz, CD_3OD): 93.3 (C-1), 142.7 (C-3), 108.6 (C-4), 72.9 (C-5), 78.5 (C-6), 47.2 (C-7), 89.1 (C-8), 59.7 (C-9), 25.2 (C-10), 99.5 (C-1'), 74.6 (C-2'), 78.3 (C-3'), 71.8 (C-4'), 56.0 (C-5'), 64.6 (C-6'), 167.5 (C-9''), 117.4 (C-8''), 145.1 (C-7''), 129.4 (C-1''), 133.6 (C-2''), 114.7 (C-3''), 162.1 (C-4''), 56.0 (MeO-4''). *Scrophularia buergeriana* (Scrophulariaceae).³²

22. 8-O-Acetyl-6'-O-(p-coumaroyl)harpagide



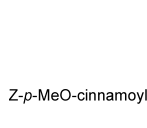
$C_{26}H_{32}O_{13}$; 552.1842; isolated as hexaacetate; amorphous powder; mp 208—210 °C (EtOH); $[\alpha]_D^{25} -35.0^\circ$ ($c=0.72$, $CHCl_3$); UV (MeOH): 220, 281; IR (KBr): 3521, 2960, 1760, 1646, 1602, 1509, 1435, 1374, 1246, 1219, 1163, 1037, 960; 1H -NMR (400 MHz, $CDCl_3$): 6.02 (s, H-1), 6.35 (d, 6.5, H-3), 5.49 (d, 6.5, H-4), 5.39 (d, 3.9, H-6), 1.94 (d, 16.0, H-7), 2.36 (d, 15.9, H-7), 3.17 (s, H-9), 1.46 (s, H_3 -10), 4.88 (d, 7.8, H-1'), 5.04—5.30 (H-2', 3', 4'), 3.85 (m, H-5'), 4.38 (dd, 12.3, 4.7, H-6'), 4.41 (dd, 12.3, 2.6, H-6'), 7.58 (d, 8.7, H-2''), 7.13 (d, 8.7, H-3''), 7.73 (d, 16.0, H-7''), 6.48 (d, 16.2, H-8''); ^{13}C -NMR (100 MHz, $CDCl_3$): 94.0 (C-1), 141.6 (C-3), 107.0 (C-4), 71.4 (C-5), 77.6 (C-6), 43.3 (C-7), 86.0 (C-8), 54.5 (C-9), 22.1 (C-10), 173.3, 22.4 (AcO-8), 96.4 (C-1'), 71.0 (C-2'), 72.0 (C-3'), 68.7 (C-4'), 72.0 (C-5'), 62.1 (C-6'), 132.1 (C-1''), 129.3 (C-2''), 122.1 (C-3''), 152.1 (C-4''), 117.5 (C-7''), 144.4 (C-8''), 166.3 (C-9''). *Caryopteris mongholica* (Verbenaceae).^{20,21}

23. 8-O-E-p-Methoxycinnamoylharpagide



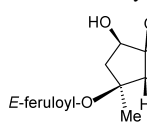
$C_{25}H_{32}O_{12}$; 524.1893; pale brown amorphous powder; $[\alpha]_D^{15} -37.4^\circ$ ($c=0.5$, MeOH); UV (MeOH): 226.0 (1.13), 286.5 (1.70), 306.5 (1.35); IR (?): 3400, 1690, 1625, 1600, 1515, 1100—1000; 1H -NMR (400 MHz, CD_3OD): 6.14 (br s, H-1), 6.37 (d, 6.4, H-3), 4.88 (dd, 6.3, 1.4, H-4), 3.70 (m, H-6), 2.02 (dd, 15.1, 4.4, H_{α} -7), 2.20 (d, 15.1, H_{β} -7), 2.89 (s, H-9), 1.47 (s, H_3 -10), 4.59 (d, 7.8, H-1'), 3.23 (t, 8.0, H-2'), 3.30 (t, 8.3, H-4'), 3.39 (dd, 5.8, 2.1, H-5'), 3.76 (dd, 11.0, 5.8, H-6'), 4.00 (dd, 11.0, 2.1, H-6'), 6.30 (d, 16.0, H-8''), 7.55 (d, 16.0, H-7''), 7.48 (d, 8.8, H-2''), 6.89 (d, 8.8, H-3''), 3.71 (s, MeO-4''); ^{13}C -NMR (100 MHz, CD_3OD): 94.8 (C-1), 144.1 (C-3), 106.9 (C-4), 73.6 (C-5), 77.7 (C-6), 46.4 (C-7), 88.2 (C-8), 55.9 (C-9), 22.9 (C-10), 100.1 (C-1'), 74.6 (C-2'), 77.8 (C-3'), 71.9 (C-4'), 77.8 (C-5'), 63.1 (C-6'), 169.2 (C-9''), 117.5 (C-8''), 146.0 (C-7''), 128.4 (C-1''), 131.1 (C-2''), 115.5 (C-3''), 163.2 (C-4''), 56.0 (MeO-4''). *Scrophularia buergeriana* (Scrophulariaceae).³²

24. 8-O-Z-p-Methoxycinnamoylharpagide



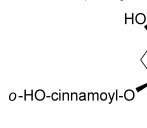
$C_{25}H_{32}O_{12}$; 524.1893; pale brown amorphous powder; $[\alpha]_D^{15} -54.3^\circ$ ($c=0.5$, MeOH); UV (MeOH): 226.5 (1.24), 286.2 (1.96), 306.0 (1.64); IR (?): 3400, 1690, 1625, 1600, 1515, 1100—1000; 1H -NMR (400 MHz, CD_3OD): 6.11 (d, 1.0, H-1), 6.38 (d, 6.3, H-3), 4.92 (dd, 6.3, 1.5, H-4), 3.73 (m, H-6), 1.98 (dd, 15.2, 4.6, H_{α} -7), 2.18 (d, 15.2, H_{β} -7), 2.91 (s, H-9), 1.50 (s, H_3 -10), 4.59 (d, 7.8, H-1'), 3.22 (t, 8.0, H-2'), 3.54 (t, 8.5, H-3'), 3.31 (t, 8.3, H-4'), 3.34 (dd, 5.7, 2.2, H-5'), 3.64 (dd, 12.2, 5.7, H-6'), 3.72 (dd, 12.2, 2.2, H-6'), 5.81 (d, 12.7, H-8''), 6.83 (d, 12.7, H-7''), 7.64 (d, 8.8, H-2''), 6.90 (d, 8.8, H-3''), 3.82 (s, MeO-4''); ^{13}C -NMR (100 MHz, CD_3OD): 94.6 (C-1), 143.7 (C-3), 107.3 (C-4), 73.3 (C-5), 77.8 (C-6), 46.2 (C-7), 88.3 (C-8), 55.8 (C-9), 22.7 (C-10), 99.9 (C-1'), 74.7 (C-2'), 77.8 (C-3'), 71.9 (C-4'), 77.8 (C-5'), 63.0 (C-6'), 168.8 (C-9''), 119.4 (C-8''), 143.9 (C-7''), 131.1 (C-1''), 133.3 (C-2''), 114.7 (C-3''), 162.1 (C-4''), 55.9 (MeO-4''). *Scrophularia buergeriana* (Scrophulariaceae).³²

25. 8-O-Feruloylharpagide

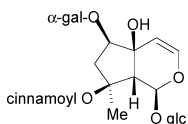


$C_{25}H_{32}O_{13}$; 540.1842; amorphous powder; mp 150—152 °C; $[\alpha]_D -24.2^\circ$ ($c=0.231$, MeOH); 1H -NMR (400 MHz, CD_3OD): 6.01 (s, H-1), 6.25 (d, 6.4, H-3), 4.77 (dd, 6.4, 1.4, H-4), 3.59 (d, 4.0, H-6), 1.85 (dd, 15.3, 4.0, H_{α} -7), 2.08 (d, 15.3, H_{β} -7), 2.76 (s, H-9), 1.35 (s, H_3 -10), 4.46 (d, 7.9, H-1'), 3.05 (t, 9.1, H-2'), 3.24 (t, 8.8, H-3'), 3.14 (t, 7.9, H-4'), 3.19 (dd, 5.7, 2.0, H-5'), 3.55 (dd, 12.1, 5.7, H-6'), 3.77 (dd, 12.1, 2.0, H-6'), 7.01 (d, 1.6, H-2''), 6.64 (d, 8.4, H-5''), 6.90 (dd, 8.4, 1.6, H-6''), 7.42 (d, 15.8, H-7''), 6.18 (d, 15.8, H-8''); ^{13}C -NMR (100 MHz, CD_3OD): 95.2 (C-1), 144.4 (C-3), 107.4 (C-4), 73.9 (C-5), 78.2 (C-6), 46.8 (C-7), 88.9 (C-8), 56.2 (C-9), 23.4 (C-10), 100.6 (C-1'), 75.2 (C-2'), 78.2 (C-3'), 72.3 (C-4'), 78.7 (C-5'), 63.6 (C-6'), 128.1 (C-1''), 112.2 (C-2''), 147.1 (C-3''), 149.9 (C-4''), 117.0 (C-5''), 124.6 (C-6''), 144.4 (C-7''), 117.3 (C-8''), 169.6 (C-9''), 57.0 (MeO-3''). *Scrophularia ningpoensis* (Scrophulariaceae).³³

26. 8-O-(2-Hydroxycinnamoyl)harpagide

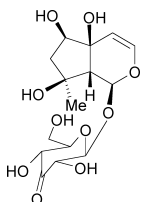


$C_{24}H_{30}O_{12}$; 510.1737; gum; $[\alpha]_D -35.7^\circ$ ($c=0.0187$, MeOH); 1H -NMR (400 MHz, $DMSO-d_6$): 5.99 (s, H-1), 6.39 (d, 6.3, H-3), 4.90 (d, 6.3, H-4), 3.61 (d, 4.0, H-6), 1.83 (dd, 14.8, 4.0, H_{α} -7), 2.16 (d, 14.6, H_{β} -7), 2.67 (s, H-9), 1.44 (s, H_3 -10), 4.41 (d, 8.0, H-1'), 2.99 (t, 8.4, H-2'), 3.14 (m, H-3'), 3.08 (t, 9.0, H-4'), 3.14 (m, H-5'), 3.49 (dd, 11.8, 5.7, H-6'), 3.70 (br d, 11.8, H-6'), 6.91 (d, 7.6, H-3''), 7.23 (t, 7.8, H-4''), 6.82 (t, 7.6, H-5''), 7.57 (d, 7.8, H-6''), 7.78 (d, 16.0, H-7''), 6.53 (d, 16.0, H-8''); ^{13}C -NMR (100 MHz, $DMSO-d_6$): 92.5 (C-1), 141.3 (C-3), 107.3 (C-4), 71.5 (C-5), 75.7 (C-6), 44.6 (C-7), 86.6 (C-8), 54.3 (C-9), 22.3 (C-10), 97.2 (C-1'), 73.1 (C-2'), 76.1 (C-3'), 70.1 (C-4'), 77.2 (C-5'), 61.0 (C-6'), 120.8 (C-1''), 156.8 (C-2''), 116.1 (C-3''), 131.6 (C-4''), 119.5 (C-5''), 129.2 (C-6''), 139.9 (C-7''), 118.7 (C-8''), 166.5 (C-9''). *Scro-*

phularia ningpoensis (Scrophulariaceae).³³⁾27. 6-O- α -D-Galctopyranosylrharpagoside

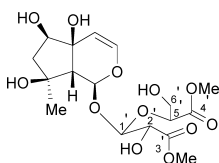
$C_{30}H_{40}O_{16}$: 656.2316; amorphous powder; mp 169–173 °C; $[\alpha]_D^{25}$ -7.4° ($c=0.336$, MeOH); 1H -NMR (400 MHz, CD_3OD): 6.02 (s, H-1), 6.29 (d, 6.4, H-3), 4.79 (dd, 6.4, 1.0, H-4), 3.55 (d, 4.0, H-6), 1.88 (dd, 15.4, 4.0, H_a -7), 2.31 (d, 15.3, H_b -7), 2.75 (s, H-9), 1.38 (s, H_3 -10), 4.44 (d, 7.8, H-1'), 3.06 (t, 8.3, H-2'), 3.24 (t, 8.8, H-3'), 4.14 (dd, 8.7, 6.4, H-4'), 3.20 (dd, 6.4, 2.0, H-5'), 3.55 (m, H-6'), 3.78 (dd, 12.0, 2.0, H-6''), 4.85 (d, 3.8, H-1''), 3.63 (dd, 10.0, 3.7, H-2''), 3.50 (dd, 9.9, 3.2, H-3''), 3.67 (d, 2.9, H-4''), 4.08 (t, 6.3, H-5''), 3.55 (m, H_2 -6''), 7.46 (m, H-2''', 6'''), 7.24 (m, H-3''', 4''', 5'''), 7.51 (d, 16.1, H-7'''), 6.36 (d, 16.1, H-8'''); ^{13}C -NMR (100 MHz, CD_3OD): 95.1 (C-1), 145.4 (C-3), 106.0 (C-4), 75.2 (C-5), 87.8 (C-6), 45.7 (C-7), 89.5 (C-8), 56.7 (C-9), 23.1 (C-10), 101.0 (C-1'), 75.0 (C-2'), 78.0 (C-3'), 72.5 (C-4'), 78.6 (C-5'), 63.7 (C-6'), 104.0 (C-1''), 71.3 (C-2''), 72.3 (C-3''), 71.3 (C-4''), 73.4 (C-5''), 62.9 (C-6''), 136.1 (C-1'''), 130.6 (C-2'''), 129.8 (C-3'''), 132.1 (C-4'''), 146.8 (C-7'''), 120.3 (C-8'''), 168.9 (C-9'''). *Scrophularia ningpoensis* (Scrophulariaceae).³³⁾

28. Clandonoside



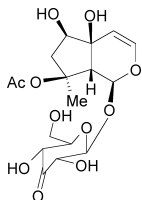
$C_{15}H_{22}O_{10}$: 362.1213; white amorphous powder; UV: 204; 1H -NMR (400 MHz, D_2O): 5.76 (d, 1.0, H-1), 6.34 (d, 6.5, H-3), 5.03 (dd, 6.5, 1.4, H-4), 3.80 (dd, 4.6, 4.4, H-6), 1.81 (dd, 14.2, 4.2, H_a -7), 1.98 (dd, 14.1, 4.8, H_b -7), 2.59 (s, H-9), 1.23 (s, H_3 -10), 4.85 (d, 8.2, H-1'), 4.32 (dd, 8.2, 1.6, H-2'), 4.37 (dd, 10.3, 1.6, H-4'), 3.59 (ddd, 10.3, 4.8, 2.0, H-5'), 3.83 (dd, 12.5, 4.8, H-6'), 3.98 (dd, 12.5, 2.0, H-6''); ^{13}C -NMR (100 MHz, D_2O): 95.7 (C-1), 143.9 (C-3), 109.2 (C-4), 73.8 (C-5), 79.0 (C-6), 48.1 (C-7), 79.7 (C-8), 59.6 (C-9), 26.7 (C-10), 102.2 (C-1'), 78.7 (C-2'), 208.7 (C-3'), 74.7 (C-4'), 78.9 (C-5'), 63.3 (C-6'). *Caryopteris clandonensis* (Verbenaceae).³⁴⁾

29. Clandonoside II



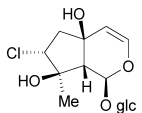
$C_{17}H_{26}O_{12}$: 422.1424, white amorphous powder; UV: 204; 1H -NMR (D_2O): 6.05 (s, H-1), 6.42 (d, 6.4, H-3), 4.97 (dd, 6.4, 1.4, H-4), 3.80 (d, 4.2, H-6), 1.98 (dd, 15.7, 4.2, H_a -7), 2.14 (d, 15.7, H_b -7), 2.54 (s, H-9), 1.24 (s, H_3 -10), 5.26 (d, 3.3, H-1'), 4.45 (d, 3.3, H-2'), 4.55 (dd, 4.6, 3.8, H-5'), 3.65 (dd, 11.4, 3.9, H-6'), 3.68 (dd, 11.3, 4.5, H-6'), 3.76, 3.78 (each s, $2 \times OMe$); ^{13}C -NMR (D_2O): 97.1 (C-1), 143.5 (C-3), 109.3 (C-4), 73.9 (C-5), 79.0 (C-6), 48.0 (C-7), 79.7 (C-8), 59.4 (C-9), 26.6 (C-10), 102.8 (C-1'), 75.1 (C-2'), 175.0 (C-3', 4'), 79.2 (C-5'), 65.0 (C-6'), 55.5, 55.6 ($2 \times OMe$). *Caryopteris clandonensis* (Lamiaceae/Verbenaceae).³⁰⁾

30. 8-O-Acetylcandonoside

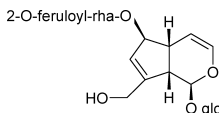


$C_{17}H_{24}O_{11}$: 404.1318; white amorphous powder; UV: 203; 1H -NMR (400 MHz, D_2O): 6.12 (d, 1.2, H-1), 6.42 (d, 6.4, H-3), 4.98 (dd, 6.3, 1.7, H-4), 3.82 (t, 4.3 H-6), 2.00 (ddd, 15.7, 4.3, 1.8, H_a -7), 2.14 (dd, 15.7, 4.0, H_b -7), 2.90 (s, H-9), 1.43 (s, H_3 -10), 2.07 (s, AcO-8), 4.87 (d, 8.2, H-1'), 4.30 (dd, 8.2, 1.7, H-2'), 4.38 (dd, 10.3, 1.7, H-4'), 3.55–3.61 (m, H-5'), 3.83 (dd, 12.3, 4.7, H-6'), 4.01 (dd, 12.7, 2.1, H_b -6''); ^{13}C -NMR (100 MHz, D_2O): 96.8 (C-1), 145.0 (C-3), 107.6 (C-4), 75.0 (C-5), 78.9 (C-6), 47.0 (C-7), 90.6 (C-8), 55.7 (C-9), 24.0 (C-10), 102.6 (C-1'), 78.7 (C-2'), 208.7 (C-3'), 74.7 (C-4'), 78.9 (C-5'), 63.2 (C-6'). *Caryopteris clandonensis* (Verbenaceae hybrid spp.).³⁴⁾

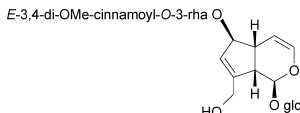
31. Stegioside I



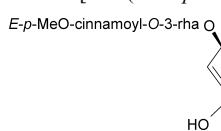
$C_{15}H_{23}O_9Cl$: 382.1030; $[\alpha]_D^{25}$ -179.4° ($c=0.32$, MeOH); 1H -NMR (400 MHz, CD_3OD): 5.67 (s, H-1), 6.20 (d, 6.8, H-3), 5.09 (dd, 6.6, 1.5, H-4), 1.88 (dd, 14.7, 12.0, H_a -6), 2.40 (dd, 14.3, 8.7, H_b -6), 4.32 (dd, 12.0, 8.3, H-7), 2.42 (brs, H-9), 1.18 (s, H_3 -10), 4.58 (d, 8.3, H-1'), 3.20 (dd, 9.8, 7.9, H-2'), 3.38 (t, 9.0, H-3'), 3.28 (partly covered by solvent signal, H-4', 5'), 3.88 (dd, 12.8, 2.7, H-6'), 3.36 (dd, 12.8, 6.0, H-6''); ^{13}C -NMR (100 MHz, CD_3OD): 92.1 (C-1), 139.5 (C-3), 110.9 (C-4), 66.4 (C-5), 48.7 (C-6), 66.1 (C-7), 80.2 (C-8), 59.3 (C-9), 17.2 (C-10), 99.0 (C-1'), 74.6 (C-2'), 77.6 (C-3'), 71.8 (C-4'), 78.3 (C-5'), 62.8 (C-6'). *Physostegia virginiana* ssp. *virginiana* (Lamiaceae).²⁸⁾

32. Unbuloside (6-O-[(2''-O-trans-Feruloyl)- α -L-rhamnopyranosyl]-aucubin)

$C_{31}H_{40}O_{16}$: 668.2316; amorphous powder; $[\alpha]_D^{25}$ -61.6° ($c=0.63$, MeOH); UV (MeOH): 300 (4.05), 312 (4.20); 1H -NMR (200 MHz, CD_3OD): 4.99 (d, 7.0, H-1), 6.44 (dd, 6.0, 1.5, H-3), 5.23 (dd, 6.0, 3.5, H-4), 2.90 (m, H-5), 4.53 (m, H-6), 5.95 (brs, H-7), 2.90 (m, H-9), 4.22 (d, 13.0, H-10), 4.44 (d, 13.0, H-10), 4.74 (d, 8.0, H-1'), 3.92–3.08 (H-2', 3', 4', 5', 6'), 4.11 (dd, 12.0, 1.5, H-6'), 4.95 (d, 1.5, H-1''), 5.13 (dd, 3.5, 1.5, H-2''), 3.92–3.08 (H-3'', 4'', 5''), 1.38 (d, 6.0, H_3 -6''), 6.53 (d, 16.0, H-8'''), 7.76 (d, 16.0, H-7'''), 7.33 (d, 2.0, H-2'''), 6.92 (d, 9.0, H-5'''), 7.20 (dd, 9.0, 2.0, H-6'''), 3.94 (s, MeO-3''); ^{13}C -NMR (50 MHz, CD_3OD): 98.0 (C-1), 142.0 (C-3), 105.5 (C-4), 44.3 (C-5), 89.2 (C-6), 127.0 (C-7), 149.4 (C-8), 48.4 (C-9), 61.5 (C-10), 100.0 (C-1'), 74.9 (C-2'), 78.2 (C-3'), 71.5 (C-4'), 77.9 (C-5'), 62.6 (C-6'), 98.4 (C-1''), 74.3 (C-2''), 70.5 (C-3''), 74.3 (C-4''), 70.3 (C-5''), 18.1 (C-6''), 166.6 (C-9'''), 115.7 (C-8'''), 147.4 (C-7'''), 129.3 (C-1'''), 111.7 (C-2'''), 149.4 (C-3'''), 150.8 (C-4'''), 116.3 (C-5'''), 124.4 (C-6'''), 56.5 (MeO-3'''). *Verbascum undulatum* (Scrophulariaceae).³⁵⁾

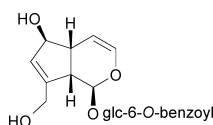
33. 6-O-[3-O-(trans-3,4-Dimethoxycinnamoyl)- α -L-rhamnopyranosyl]-aucubin

$C_{32}H_{42}O_{16}$: 682.2472; amorphous powder; $[\alpha]_D^{25}$ -80.5° ($c=0.1$, MeOH); 1H -NMR (400 MHz, CD_3OD): 4.95 (d, 7.0, H-1), 6.35 (dd, 5.9, 1.8, H-3), 5.17 (dd, 5.9, 3.9, H-4), 2.86 (m, H-5), 4.50 (m, H-6), 5.89 (brs, H-7), 2.91 (t, 7.0, H-9), 4.38 and 4.19 (each d, 15.2, H_2 -10), 4.69 (d, 7.9, H-1'), 3.26 (dd, 9.0, 7.9, H-2'), 3.41 (t, 9.0, H-3'), 3.31 (t, 9.0, H-4'), 3.30 (m, H-5'), 3.87 (m, H-6'), 3.68 (m, H-6'), 4.85 (d, 1.6, H-1''), 4.09 (dd, 3.5, 1.6, H-2''), 5.07 (dd, 9.5, 3.5, H-3''), 3.70 (t, 9.5, H-4''), 3.87 (dq, 9.5, 5.8, H-5''), 1.33 (d, 5.8, H_3 -6''), 7.23 (d, 1.7, H-2'''), 6.98 (d, 8.5, H-5'''), 7.19 (dd, 8.5, 2.0, H-6'''), 7.71 (d, 16.0, H-7'''), 6.48 (d, 16.0, H-8'''), 3.86, 3.87 (each s, $2 \times MeO$); ^{13}C -NMR (100 MHz, CD_3OD): 98.0 (C-1), 141.9 (C-3), 105.5 (C-4), 44.3 (C-5), 89.0 (C-6), 127.1 (C-7), 149.6 (C-8), 48.0 (C-9), 61.5 (C-10), 99.9 (C-1'), 74.9 (C-2', 3''), 77.9 (C-3'), 70.4 (C-4', 2''), 78.3 (C-5'), 62.7 (C-6'), 101.1 (C-1''), 71.6 (C-4'', 5''), 18.0 (C-6''), 128.9 (C-1'''), 111.4 (C-2'''), 150.5 (C-3'''), 152.5 (C-4'''), 111.2 (C-5'''), 123.9 (C-6'''), 147.1 (C-7'''), 115.5 (C-8'''), 169.1 (C-9'''), 56.5 ($2 \times OMe$). *Verbascum undulatum* (Scrophulariaceae).³⁶⁾

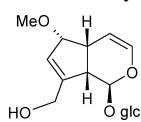
34. 6-O-[3-O-(*trans-p*-Methoxycinnamoyl)- α -L-rhamnopyranosyl]-aucubin

$C_{31}H_{40}O_{15}$: 652.2367; amorphous powder; $[\alpha]_D^{20} -82.5^\circ$ ($c=0.1$, MeOH); 1H -NMR (400 MHz, CD_3OD): 4.93 (d, 7.0, H-1), 6.35 (dd, 5.9, 1.8, H-3), 5.17 (dd, 5.9, 3.9, H-4), 2.83 (m, H-5), 4.48 (m, H-6), 5.89 (br s, H-7), 2.90 (t, 7.0, H-9), 4.38 and 4.18 (each d, 15.2, H₂-10), 4.68 (d, 7.9, H-1'), 3.26 (dd, 9.0, 7.9, H-2'), 3.41 (t, 9.0, H-3'), 3.31 (t, 9.0, H-4'), 3.30 (m, H-5'), 3.87 (m, H-6'), 3.68 (m, H-6'), 4.85 (d, 1.6, H-1''), 3.99 (dd, 3.5, 1.6, H-2''), 5.07 (dd, 9.5, 3.5, H-3''), 3.70 (t, 9.5, H-4''), 3.87 (dq, 9.5, 5.8, H-5''), 1.29 (d, 5.8, H₃-6''), 7.55 (d, 8.7, H-2'''), 6.95 (d, 8.7, H-3'''), 7.71 (d, 16.0, H-7'''), 6.44 (d, 16.0, H-8'''), 3.81 (s, MeO-4'''); ^{13}C -NMR (100 MHz, CD_3OD): 98.0 (C-1), 141.9 (C-3), 105.5 (C-4), 44.3 (C-5), 89.0 (C-6), 127.1 (C-7), 149.6 (C-8), 48.0 (C-9), 61.5 (C-10), 99.9 (C-1'), 74.9 (C-2', 3''), 77.9 (C-3'), 70.4 (C-4', 2''), 78.3 (C-5'), 62.7 (C-6'), 101.1 (C-1''), 71.6 (C-4'', 5''), 18.0 (C-6''), 128.5 (C-1'''), 130.0 (C-2'', 6''), 115.4 (C-3''', 5''', 8''), 162.8 (C-4'''), 146.3 (C-7'''), 169.6 (C-9'''), 56.5 (OMe). *Verbascum undulatum* (Scrophulariaceae).³⁶⁾

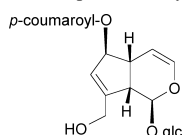
35. Dumuloside



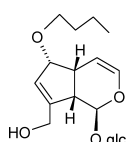
$C_{22}H_{26}O_{10}$: 450.1526; amorphous powder; $[\alpha]_D^{20} -70.0^\circ$ ($c=0.1$, MeOH); UV (MeOH): 207, 233, 273; IR (KBr): 3460, 1718, 1654, 1603, 1559, 1542, 1508; 1H -NMR (300 MHz, CD_3OD): 4.73 (d, 7.7, H-1), 6.30 (dd, 6.1, 1.8, H-3), 5.08 (dd, 6.1, 4.0, H-4), 2.59 (m, H-5), 4.25 (overlapped, H-6), 5.63 (d, 1.0, H-7), 2.84 (t, 7.7, H-9), 4.23 and 4.11 (each d, 15.4, H₂-10), 4.70 (d, 7.8, H-1'), 3.26 (dd, 8.6, 7.8, H-2'), 3.39 (overlapped, H-3'), 3.38 (overlapped, H-4'), 3.60 (m, H-5'), 4.62 (dd, 11.8, 2.3, H-6'), 4.47 (dd, 11.8, 6.8, H-6'), 8.00 (dd, 7.5, 1.3, H-2'', 6''), 7.48 (t, 7.5, H-3'', 5''), 7.61 (m, H-4''); ^{13}C -NMR (75.5 MHz, CD_3OD): 98.4 (C-1), 141.7 (C-3), 105.6 (C-4), 46.7 (C-5), 83.0 (C-6), 130.7 (C-7), 147.7 (C-8), 47.7 (C-9), 61.5 (C-10), 100.1 (C-1'), 74.8 (C-2'), 77.8 (C-3'), 72.0 (C-4'), 75.6 (C-5'), 65.1 (C-6'), 131.3 (C-1''), 130.6 (C-2'', 6''), 129.6 (C-3'', 5''), 134.4 (C-4''), 167.8 (C-7''). *Globularia dumulosa* (Globulariaceae).³⁷⁾

36. 6-O-Methyl-*epi*-aucubin

$C_{16}H_{24}O_9$: 360.1420; amorphous powder; $[\alpha]_D^{20} -62.4^\circ$ ($c=0.25$, MeOH); UV (MeOH): 203; IR (KBr): 3254, 1707, 1652, 1481, 1356, 1083, 1048; 1H -NMR (400 MHz, $DMSO-d_6$): 4.99 (d, 4.2, H-1), 6.34 (dd, 6.1, 1.8, H-3), 4.83 (dd, 6.1, 3.6, H-4), 2.65 (m, H-5), 4.90 (d, 6.4, H-6), 5.84 (br s, H-7), 2.74 (dd, 6.2, 5.0, H-9), 4.21 (br d, 11.2, H₂-10), 3.41 (br s, MeO-6), 4.48 (d, 7.9, H-1'); ^{13}C -NMR (100 MHz, $DMSO-d_6$): 95.5 (C-1), 140.6 (C-3), 101.6 (C-4), 38.4 (C-5), 84.6 (C-6), 125.8 (C-7), 149.3 (C-8), 46.2 (C-9), 59.4 (C-10), 56.3 (MeO), 98.2 (C-1'), 73.3 (C-2'), 77.0 (C-3'), 69.9 (C-4'), 76.6 (C-5'), 60.8 (C-6'). *Pedicularis artselaeri* (Scrophulariaceae).³⁸⁾

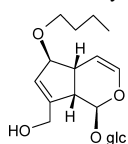
37. 6-O-*p*-Coumaroylaucubin

$C_{24}H_{28}O_{11}$: 492.1631; solid foam; $[\alpha]_D^{21} -152^\circ$ ($c=0.5$, MeOH); 1H -NMR (500 MHz, CD_3OD): 5.13 (d, 6.0, H-1), 6.30 (dd, 6.0, 1.8, H-3), 5.06 (dd, 6.0, 3.5, H-4), 2.95 (m, H-5), 5.43 (m, H-6), 5.85 (m, H-7), 3.07 (br t, 6.5, H-9), 4.21, 4.38 (each br d, 15.5, H₂-10), 4.67 (d, 8.0, H-1'), 3.20—3.40 (H-2', 3', 4', 5'), 3.65 (dd-like, 12.0, 5.0, H-6'), 3.87 (dd, 12.0, 1.5, H-6'), 7.44, 6.79 (each d, 8.5, H-2'', 6'', 3'', 5''), 7.59 (d, 16.0, H-7''), 6.30 (d, 16.0, H-8''); ^{13}C -NMR (62.5 MHz, CD_3OD): 95.4 (C-1), 140.6 (C-3), 103.9 (C-4), 41.2 (C-5), 83.9 (C-6), 124.8 (C-7), 150.5 (C-8), 47.2 (C-9), 60.0 (C-10), 98.6 (C-1'), 73.7 (C-2'), 76.7 (C-3'), 70.4 (C-4'), 77.1 (C-5'), 61.5 (C-6'), 125.9 (C-1''), 130.0 (C-2'', 6''), 115.7 (C-3'', 5''), 160.2 (C-4''), 145.5 (C-7''), 114.0 (C-8''), 167.9 (C-9''). *Utricularia vulgaris* (Lentibulariaceae).⁴⁰⁾

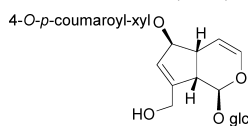
38. 6-O-Butyl-*epi*-aucubin

$C_{19}H_{30}O_9$: 402.1889; isolated as a mixture with β -epimer in a ratio 1 : 2; 1H -NMR (400 MHz, $DMSO-d_6$): 5.00 (d, 4.7, H-1), 6.33 (dd, 6.0, 1.5, H-3), 4.85 (dd, 6.0, 3.5, H-4), — (H-5), 4.93 (d, 6.7, H-6), 5.78 (br s, H-7), 2.87 (dd, 6.7, 4.7, H-9), — (H₂-10), 4.46 (d, 7.8, H-1'), 0.85 (t, H₃-1''), 1.32 (m, H₂-2''), 1.35 (m, H₂-3''), 4.28 (t, H₂-4''); ^{13}C -NMR (100 MHz, $DMSO-d_6$): 95.2 (C-1), 140.7 (C-3), 101.7 (C-4), 38.4 (C-5), 83.1 (C-6), 126.4 (C-7), 148.6 (C-8), 46.2 (C-9), 60.4 (C-10), 98.2 (C-1'), 73.4 (C-2'), 77.0 (C-3'), 70.0 (C-4'), 76.6 (C-5'), 60.6 (C-6'), 13.9 (C-1''), 18.7 (C-2''), 34.7 (C-3''), 68.2 (C-4''). *Pedicularis chinensis* (Scrophulariaceae).⁴¹⁾

39. 6-O-Butylaucubin

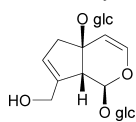


$C_{19}H_{30}O_9$: 402.1889; isolated as a mixture with α -epimer in a ratio 2 : 1; IR (MeOH): 3331, 2958, 2930, 1660, 1377, 1226, 1076, 1049, 699, 586; 1H -NMR (400 MHz, $DMSO-d_6$): 4.95 (d, 5.0, H-1), 6.28 (dd, 6.0, 1.5, H-3), 4.83 (dd, 6.0, 5.6, H-4), 2.64 (m, H-5), 4.90 (d, 6.0, H-6), 5.74 (br s, H-7), 2.76 (dd, 6.8, 5.0, H-9), — (H₂-10), 4.47 (d, 7.8, H-1'), 3.00—3.50 (m, H-2', 3', 4', 5', 6'), 0.85 (t, H₃-1''), 1.30 (m, H₂-2''), 1.45 (m, H₂-3''), 4.35 (t, H₂-4''); ^{13}C -NMR (100 MHz, $DMSO-d_6$): 94.8 (C-1), 140.2 (C-3), 104.9 (C-4), 41.1 (C-5), 88.4 (C-6), 125.7 (C-7), 148.2 (C-8), 46.4 (C-9), 59.4 (C-10), 98.0 (C-1'), 73.4 (C-2'), 77.1 (C-3'), 70.1 (C-4'), 76.6 (C-5'), 61.0 (C-6'), 13.9 (C-1''), 18.9 (C-2''), 31.7 (C-3''), 68.7 (C-4''). *Pedicularis chinensis* (Scrophulariaceae).⁴¹⁾

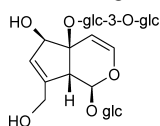
40. Phlomidoidide (6-O-(4''-O-*p*-Coumaroyl- β -D-xylopyranosyl)-aucubin)

$C_{29}H_{36}O_{15}$: 624.5884; UV (MeOH): 225, 312; IR (KBr): 3400, 1690, 1650, 1620, 1605, 1510; 1H -NMR (300 MHz, CD_3OD): 4.91 (d, 6.0, H-1), 6.31 (dd, 6.0, 1.4, H-3), 5.14 (dd, 6.0, 4.0, H-4), 2.89 (br s, H-5), 4.51 (br s, H-6), 5.90 (br s, H-7), 2.89 (br s, H-9), 4.18, 4.38 (each d, 15.4, H₂-10), 4.68 (d, 7.8, H-1'), 3.25 (dd, 9.0, 7.0, H-2'), 3.38 (t, 9.0, H-3'), 3.27 (t, 9.0, H-4'), 3.30 (m, H-5'), 3.85 (dd, 12.5, 1.5, H-6'), 3.64 (dd, 12.0, 4.0, H-6'), 4.38 (d, 7.5, H-1''), 3.20 (dd, 9.0, 7.8, H-2''), 3.65 (t, 9.0, H-3''), 4.81 (ddd, 9.5, 9.1, 5.5, H-4''), 3.25 (dd, 12.1, 9.0, H_a-5''), 4.05 (dd, 11.3, 5.4, H_b-5''), 7.47 (d, 8.5, H-2'''), 6.81 (d, 8.5, H-3'''), 7.68 (d, 16.0, H-7'''), 6.36 (d, 16.0, H-8'''); ^{13}C NMR (75 MHz, CD_3OD): 97.9 (C-1), 141.6 (C-3), 104.6 (C-4), 44.4 (C-5), 91.2 (C-6), 127.1 (C-7), 149.4 (C-8), 50.3 (C-9), 61.4 (C-10), 99.9 (C-1'), 75.1 (C-2'), 78.2 (C-3'), 71.5 (C-4'), 77.8 (C-5'), 62.6 (C-6'), 105.7 (C-1''), 73.1 (C-2''), 75.1 (C-3''), 74.8 (C-4''), 63.7 (C-5''), 127.6 (C-1'''), 131.2 (C-2'''), 116.9 (C-3'''), 161.3 (C-4'''), 147.1 (C-7'''), 114.7 (C-8'''), 168.6 (C-9'''). *Verbascum phlomidoides* (Scrophulariaceae).⁴²⁾

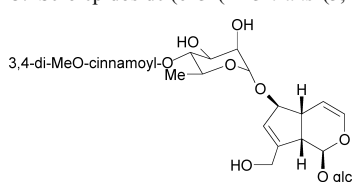
41. 6-Deoxymelittoside



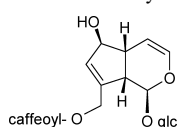
$C_{21}H_{32}O_{14}$: 508.1791; 1H -NMR (500 MHz, D_2O): 5.31 (d, 6.8, H-1), 6.53 (d, 6.4, H-3), 5.20 (d, 6.4, H-4), 2.79 (br d, 17.5, H-6), 2.66 (d, 17.5, H-6), 5.85 (m, H-7), 3.32 (br d, 6.4, H-9), 4.79 (d, 8.1, H-1'), 3.24 (dd, 9.4, 8.0, H-2'), 3.35—3.54 (H-3', 4', 5', 2'', 3'', 4'', 5''), 3.89 (H-6', 6''), 3.72 (H-6', 6''), 4.60 (d, 8.1, H-1''); ^{13}C -NMR (125 MHz, D_2O): 97.4 (C-1), 143.5 (C-3), 108.3 (C-4), 84.5 (C-5), 46.2 (C-6), 127.6 (C-7), 140.6 (C-8), 52.7 (C-9), 60.6 (C-10), 99.3 (C-1'), 73.5 (C-2'), 76.3 (C-3'), 70.3 (C-4'), 76.9 (C-5'), 61.5 (C-6'), 98.5 (C-1''), 73.9 (C-2''), 76.3 (C-3''), 70.2 (C-4''), 76.3 (C-5''), 61.3 (C-6''). *Plantago subulata* (Plantaginaceae).³⁹⁾

42. Sammangaoside C (Melittoside 3''-O- β -glucopyranoside)

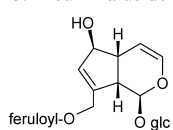
$C_{27}H_{42}O_{20}$: 686.2269; amorphous; $[\alpha]_D^{20} -36.1^\circ$ ($c=0.7$ MeOH); 1H -NMR (400 MHz, CD_3OD): 5.63 (d, 3.7, H-1), 6.65 (d, 6.7, H-3), 5.15 (dd, 6.4, 1.1, H-4), 5.79 (br s, H-7), 4.59 (d, 7.8, H-1'), 4.74 (d, 7.8, H-1''), 4.54 (d, 7.8, H-1'''); ^{13}C -NMR (100 MHz, CD_3OD): 93.8 (C-1), 143.4 (C-3), 105.0 (C-4), 79.8 (C-5), 79.6 (C-6), 128.0 (C-7), 147.6 (C-8), 51.4 (C-9), 60.9 (C-10), 98.0 (C-1'), 74.9 (C-2'), 78.2 (C-3''), 71.6 (C-4''), 77.2 (C-5''), 62.8 (C-6''), 99.3 (C-1''), 74.4 (C-2''), 88.3 (C-3''), 69.3 (C-4''), 77.8 (C-5''), 62.0 (C-6''), 105.2 (C-1'''), 75.5 (C-2'''), 78.5 (C-3'''), 71.7 (C-4'''), 77.8 (C-5'''), 62.6 (C-6'''). *Clerodendrum inerme* (Verbenaceae).⁴³⁾

43. Scrolepidoside (6-*O*-(4''-*O*-*trans*-(3,4-Dimethoxycinnamoyl)- α -L-rhamnopyranosyl)-aucubin)

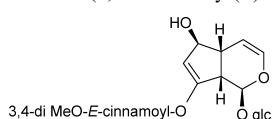
$C_{32}H_{42}O_{16}$; 682.2472; amorphous powder; $[\alpha]_D^{22} -140.0^\circ$ ($c=0.23$, MeOH); UV (MeOH): 214, 240, 280 sh, 316; IR (film): 3374, 2922, 1705, 1632, 1599, 1514, 1453, 1260; 1H -NMR (600 MHz, CD_3OD): 4.93 (d, 7.3, H-1), 6.34 (dd, 6.1, 1.8, H-3), 5.13 (dd, 6.1, 3.9, H-4), 2.82 (m, H-5), 4.48 (dd, 3.5, 1.7, H-6), 5.89 (br s, H-7), 2.92 (m, H-9), 4.19 and 3.38 (each d, 16.1, H_2 -10), 4.69 (d, 8.0, H-1'), 3.22 (dd, 9.2, 8.0, H-2'), 3.39 (t, 9.0, H-3'), 3.29 (overlapped, H-4'), 3.28 (overlapped, H-5'), 3.64 (dd, 12.0, 5.4, H-6'), 3.85 (overlapped, H-6'), 4.86 (d, 1.2, H-1''), 3.83 (overlapped, H-2''), 3.89 (overlapped, H-3''), 5.08 (t-like dd, 9.7, H-4''), 3.92 (overlapped, H-5''), 1.19 (d, 6.3, H_3 -6''), 7.22 (d, 1.9, H-2'''), 6.97 (d, 8.4, H-5'''), 7.19 (dd, 8.4, 1.9, H-6'''), 7.67 (d, 15.9, H-7'''), 6.45 (d, 15.9, H-8'''), 3.87, 3.86 (each s, $2\times MeO$); ^{13}C -NMR (150 MHz, CD_3OD): 98.1 (C-1), 142.1 (C-3), 105.6 (C-4), 44.4 (C-5), 89.4 (C-6), 127.3 (C-7), 149.8 (C-8), 48.3 (C-9), 61.6 (C-10), 100.1 (C-1'), 75.1 (C-2'), 78.0 (C-3'), 71.7 (C-4'), 78.4 (C-5'), 62.8 (C-6'), 101.4 (C-1''), 70.5 (C-2''), 72.8 (C-3''), 75.7 (C-4''), 68.5 (C-5''), 18.1 (C-6''), 128.9 (C-1'''), 111.8 (C-2'''), 150.9 (C-3'''), 153.0 (C-4'''), 112.8 (C-5'''), 124.2 (C-6'''), 146.9 (C-7'''), 116.6 (C-8'''), 168.8 (C-9'''), 56.6, 56.7 ($2\times OMe$). *Scrophularia lepidota* (Scrophulariaceae).⁴⁴

44. 10-*O*-Caffeoylaucubin

$C_{24}H_{28}O_{12}$; 492.1631; solid foam; $[\alpha]_D^{21} -73.0^\circ$ ($c=0.3$, MeOH); 1H -NMR (500 MHz, CD_3OD): 4.95 (d, 7.5, H-1), 6.33 (dd, 6.0, 1.8, H-3), 5.11 (dd, 6.0, 4.0, H-4), 2.68 (m, H-5), 4.46 (m, H-6), 5.79 (m, H-7), 2.95 (br t, 7.5, H-9), 4.80, 4.98 (each br d, 15.0, H_2 -10), 4.69 (d, 8.0, H-1'), 3.20—3.40 (H-2', 3', 4', 5'), 3.66 (dd, 12.0, 5.5, H-6'), 3.85 (dd, 12.0, 1.5, H-6'), 7.05 (br d, 1.5, H-2''), 6.78 (d, 8.0, H-5''), 6.95 (dd, 8.0, 1.5, H-6''), 7.58 (d, 16.0, H-7''), 6.30 (d, 16.0, H-8''); ^{13}C -NMR (62.5 MHz, CD_3OD): 96.8 (C-1), 140.5 (C-3), 104.3 (C-4), 45.0 (C-5), 81.6 (C-6), 131.2 (C-7), 141.5 (C-8), 47.2 (C-9), 62.2 (C-10), 98.9 (C-1'), 73.5 (C-2'), 76.6 (C-3'), 70.2 (C-4'), 76.9 (C-5'), 61.5 (C-6'), 126.4 (C-1''), 115.3 (C-2''), 145.5 (C-3''), 148.4 (C-4''), 114.0 (C-5''), 121.9 (C-6''), 146.2 (C-7''), 113.5 (C-8''), 166.6 (C-9''). *Utricularia vulgaris* (Lentibulariaceae).⁴⁰

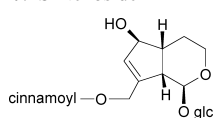
45. Acuminatuside (10-*E*-Feruloylaucubin)

$C_{25}H_{30}O_{12}$; 522.1737; $[\alpha]_D^{23} -82.0^\circ$ ($c=0.1$, MeOH); 1H -NMR (500 MHz, CD_3OD): 4.89 (d, 7.4, H-1), 6.24 (dd, 6.1, 2.0, H-3), 5.04 (dd, 6.1, 3.8, H-4), 2.58 (m, H-5), 4.36 (ddd, 5.6, 1.9, 1.6, H-6), 5.71 (dd, 1.6, 1.3, H-7), 2.86 (br dd, 7.7, 7.4, H-9), 4.73 (H_2 -10), 4.62 (d, 7.8, H-1'), 3.13 (dd, 9.1, 7.8, H-2'), 3.38 (dd, 9.1, 8.7, H-3'), 3.27 (H-4'), 3.16 (m, H-5'), 3.55 (dd, 12.0, 5.5, H-6'), 3.78 (dd, 12.0, 2.0, H-6''), 7.12 (d, 1.9, H-2''), 6.71 (d, 8.2, H-5''), 6.98 (dd, 8.2, 1.9, H-6''), 7.55 (d, 15.9, H-7''), 6.31 (d, 15.9, H-8''), 3.79 (s, MeO-3''); ^{13}C -NMR (75.5 MHz, CD_3OD): 98.0 (C-1), 141.8 (C-3), 105.5 (C-4), 46.4 (C-5), 82.9 (C-6), 132.5 (C-7), 142.8 (C-8), — (C-9), 63.4 (C-10), 100.2 (C-1'), 74.9 (C-2'), 78.0 (C-3'), 71.6 (C-4'), 78.3 (C-5'), 62.8 (C-6'), 126.9 (C-1''), 111.7 (C-2''), 151.4 (C-3''), 149.6 (C-4''), 116.6 (C-5''), 124.4 (C-6''), 147.4 (C-7''), 114.9 (C-8''), 168.9 (C-9''), 56.4 (MeO-3''). *Penstemon acuminatus* (Scrophulariaceae).⁴⁵

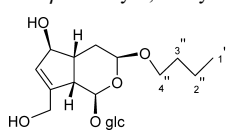
46. 10-*O*-(3,4-Dimethoxy-*E*-cinnamoyl)-aucubin

$C_{26}H_{32}O_{12}$; 536.1894; white amorphous powder, $[\alpha]_D^{24} -60.1^\circ$ ($c=0.28$, MeOH); UV (?): 234, 296, 322; IR (?): 3448, 1700, 1630, 1598, 1510; 1H -NMR (500 MHz, $DMSO-d_6$): 4.87 (d, 7.4, H-1), 6.37 (dd, 6.0, 2.0, H-3), 5.06 (dd, 6.0, 3.8, H-4), 2.58 (m, H-5), 4.37 (br s, H-6), 5.81 (br s, H-7), 2.85 (dd, 7.9, 7.4, H-9), 4.82 (s, H_2 -10), 4.56 (d, 7.5, H-1'), 3.14 (dd, 9.1, 7.5, H-2'), 3.42 (dd, 9.1, 8.7, H-3'), 3.20 (m, H-4'), 3.19 (m, H-5'), 3.60 (m, H-6'), 3.65 (d, 11.9, H-6''), 6.60 (d, 15.9, H-8''), 7.64 (d, 15.9, H-7''), 7.35 (d, 1.9, H-2''), 7.00 (d, 8.0, H-5''), 7.26 (dd, 8.0, 1.9, H-6''), 3.81 (s, MeO), 3.82 (s, MeO); ^{13}C -NMR (125 MHz, $DMSO-d_6$): 95.7 (C-1), 140.3 (C-3), 104.6 (C-4), 44.6 (C-5), 80.5 (C-6), 132.4 (C-7), 139.8 (C-8), 46.5 (C-9), 61.7 (C-10), 98.3 (C-1'), 73.3 (C-2'), 76.5 (C-3'), 70.0 (C-4'), 77.0 (C-5'), 61.1 (C-6'), 166.2 (C-9''), 115.2 (C-8''), 148.9 (C-7''), 126.8 (C-1''), 111.5 (C-2''), 144.9 (C-3''), 151.0 (C-4''), 110.4 (C-5''), 148.9 (C-6''), 55.5, 55.6 (OMe). *Lagotis yunnanensis*.⁴⁶

47. Sintenoside

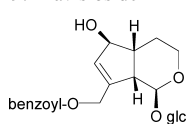


$C_{24}H_{30}O_{10}$; 478.1839; amorphous powder; $[\alpha]_D^{20} -73.9^\circ$ ($c=0.1$, MeOH); UV (MeOH): 217, 275; IR (KBr): 3421, 1704, 1636, 1450; 1H -NMR (600 MHz, CD_3OD): 4.95 (d, 5.7, H-1), 4.02 (m, H-3), 3.06 (m, H-7), 1.84 (m, H-4), 1.69 (m, H-4), 2.45 (m, H-5), 4.58 (br d, 5.3, H-6), 5.86 (br s, H-7), 2.86 (t, 6.6, H-9), 4.99 and 4.86 (each d, 14.5, H_2 -10), 4.64 (d, 7.9, H-1'), 3.25 (dd, 8.7, 7.9, H-2'), 3.39 (t, 8.7, H-3'), 3.33 (t, 8.7, H-4'), 3.30 (m, H-5'), 3.88 (dd, 11.9, 1.6, H-6'), 3.68 (dd, 11.9, 5.3, H-6''), 7.67 (m, H-2''), 7.44 (m, H-3''), 7.77 (d, 16.2, H-7''), 6.62 (d, 16.2, H-8''); ^{13}C -NMR (150 MHz, CD_3OD): 99.4 (C-1), 61.7 (C-3), 25.3 (C-4), 46.1 (C-5), 79.3 (C-6), 132.1 (C-7), 143.8 (C-8), 48.6 (C-9), 63.5 (C-10), 99.6 (C-1'), 75.0 (C-2'), 78.1 (C-3'), 71.6 (C-4'), 78.2 (C-5'), 62.9 (C-6'), 135.7 (C-1''), 129.3 (C-2''), 130.6 (C-3''), 131.6 (C-4''), 146.7 (C-7''), 118.6 (C-8''), 168.3 (C-9''). *Globularia sintenisii* (Globulariaceae).⁴⁷

48. 3 β -Butoxy-3,4-dihydroaucubin

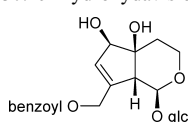
$C_{19}H_{32}O_{10}$; 420.1995; amorphous light yellow powder; $[\alpha]_D^{15} -26.2^\circ$ ($c=0.275$, MeOH); IR (MeOH): 3334, 2991, 1661, 1446, 1240, 1076, 1036, 633; 1H -NMR (400 MHz, D_2O): 4.85 (d, 5.8, H-1), 4.73 (dd, 9.0, 3.7, H-3), 1.75 (m, H_2 -4), 2.63 (m, H-5), 4.88 (d, 6.0, H-6), 5.53 (br s, H-7), 2.28 (m, H-9), 4.50 (br d, 15.5, H_2 -10), 5.05 (d, 7.8, H-1'), 3.00—4.25 (m, H-2', 3', 4', 5', 6'), 0.66 (t, H_3 -1''), 1.10 (m, H_2 -2''), 1.35 (m, H_2 -3''), 4.00 (t, H_2 -4''); ^{13}C -NMR (100 MHz, D_2O): 98.6 (C-1), 99.1 (C-3), 30.2 (C-4), 44.8 (C-5), 80.6 (C-6), 130.4 (C-7), 147.5 (C-8), 48.1 (C-9), 60.8 (C-10), 99.0 (C-1'), 74.1 (C-2'), 77.4 (C-3'), 70.8 (C-4'), 77.0 (C-5'), 61.8 (C-6'), 14.3 (C-1''), 19.8 (C-2''), 32.1 (C-3''), 70.3 (C-4''). *Pedicularis chinensis* (Scrophulariaceae).⁴¹

49. Davisioside



$C_{22}H_{28}O_{10}$; 452.1682; white amorphous powder; $[\alpha]_D^{20} -69.0^\circ$ ($c=0.48$, MeOH); UV (MeOH): 229, 274; IR (KBr): 3421, 1715, 1654, 1508, 1451; 1H -NMR (400 MHz, CD_3OD): 4.96 (d, 6.0, H-1), 3.99 (m, H_{α} -3), 3.58 (m, H_{β} -3), 1.66 (m, H_{α} -4), 1.81 (m, H_{β} -4), 2.43 (m, H-5), 4.56 (br d, 5.5, H-6), 5.86 (br s, H-7), 2.86 (t, 6.0, H-9), 5.08 and 4.94 (each d, 14.7, H_2 -10), 4.60 (d, 7.8, H-1'), 3.20 (dd, 8.9, 7.8, H-2'), 3.36 (t, 8.9, H-3'), 3.26 (overlapped, H-4'), 3.25 (overlapped, H-5'), 3.80 (dd, 11.9, 1.6, H-6'), 3.64 (dd, 11.9, 5.2, H-6''), 8.06 (dd, 7.4, 1.3, H-2''), 7.49 (t, 7.4, H-3''), 7.62 (tt, 7.4, 1.3, H-4''); ^{13}C -NMR (100 MHz, CD_3OD): 95.5 (C-1), 61.7 (C-3), 25.3 (C-4), 46.1 (C-5), 79.3 (C-6), 132.2 (C-7), 143.8 (C-8), 48.6 (C-9), 63.9 (C-10), 99.6 (C-1'), 74.9 (C-2'), 78.1 (C-3'), 71.6 (C-4'), 78.2 (C-5'), 62.8 (C-6'), 131.3 (C-1''), 130.6 (C-2''), 129.6 (C-3''), 134.4 (C-4''), 167.7 (C-7''). *Globularia davisiana* (Globulariaceae).⁴⁸

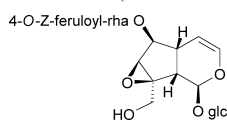
50. 5-Hydroxydavisioside



$C_{22}H_{28}O_{11}$; 468.1631; amorphous powder; $[\alpha]_D^{20} -76.0^\circ$ ($c=0.1$, MeOH); UV (MeOH): 231, 275; IR (KBr): 3415, 1739, 1475, 1438; 1H -NMR (500 MHz, CD_3OD): 5.26 (d, 3.4, H-1), 4.15 (overlapped, H_3 -3), 3.50 (m, H_3 -3), 1.88 (m, H-4), 1.62 (m, H-4), 4.15 (overlapped, H-6), 5.89 (br s, H-7), 2.81 (br s, H-9), 5.00 (d, 12.5, H-10), 4.96 (d, 12.5, H-10), 4.57 (d, 7.9, H-1'), 3.24 (dd, 9.0, 7.9, H-2'), 3.37 (t, 9.0, H-3'), 3.27 (overlapped, H-4'), 3.25 (overlapped, H-5'), 3.79 (dd, 11.9, 1.8, H-6'), 3.59 (dd, 11.9, 5.5, H-6''), 8.07 (dd, 7.5, 1.5, H-2''), 7.50 (t, 7.5, H-3''), 7.62 (m, H-4''); ^{13}C -NMR (125 MHz, CD_3OD): 96.5 (C-1), 58.2 (C-3), 33.3 (C-4), 77.4 (C-5), 79.3 (C-6), 130.3 (C-7), 143.5 (C-8), 53.6 (C-9),

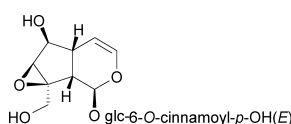
63.5 (C-10), 99.7 (C-1'), 74.7 (C-2'), 77.7 (C-3'), 71.7 (C-4'), 78.1 (C-5'), 62.8 (C-6'), 131.2 (C-1''), 130.7 (C-2''), 6''), 129.7 (C-3''), 5''), 134.4 (C-4''), 167.6 (C-7''). *Globularia cordifolia* (Globulariaceae).⁴⁹

51. 6-O- α -L-(4''-O-cis-Feruloyl)-rhamnopyranosylcatalpol



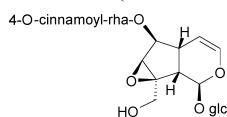
$C_{31}H_{40}O_{17}$: 684.2265; isolated as a mixture with 4''-O-trans feruloyl isomer; pale yellow powder; ¹H-NMR (400 MHz, CD₃OD): 5.07 (d, 10.0, H-1), 6.38 (dd, 6.0, 2.0, H-3), 5.03—5.10 (m, H-4, 4''), 2.41 (m, H-5), 4.20 (dd, 8.0, 2.0, H-6), 3.64 (brs, H-7), 2.55 (dd, 10.0, 8.0, H-9), 3.81 and 4.14 (each d, 13.0, H₂-10), 4.75 (d, 8.0, H-1'), 3.25 (dd, 9.0, 8.0, H-2'), 3.39 (t, 9.0, H-3'), 3.24 (dd, 10.0, 8.0, H-4'), 3.30 (m, H-5'), 3.62 (dd, 12.0, 6.0, H-6'), 3.85—3.93 (m, H-6', H-2'', 3'', 5''), 4.98 (d, 2.0, H-1''), 1.15 (d, 6.0, H₃-6''), 7.76 (d, 2.0, H-2'''), 6.75 (d, 8.0, H-5'''), 7.13 (dd, 8.0, 2.0, H-6'''), 6.90 (d, 13.0, H-7'''). *Holmskioldia sanguinea* (Labiatae/Verbenaceae).⁵⁰

52. Picoside IV



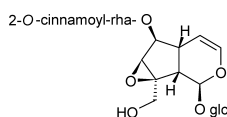
$C_{24}H_{28}O_{12}$: 508.1580; yellow amorphous powder; [α]_D²⁰ -84.8° (c=0.08, MeOH); UV (MeOH): 195 (4.12), 203 (4.50), 227 (4.33), 313 (4.58), 377 (2.57); IR (KBr): 1720, 1650, 1600, 1580, 1210; ¹H-NMR (400 MHz, CD₃D₂N): 5.53 (d, 10.0, H-1), 6.46 (dd, 6.0, 1.5, H-3), 5.32 (dd, 6.0, 4.5, H-4), 2.84 (tdd, 8.0, 4.5, 1.5, H-5), 4.32 (d, 8.0, H-6), 3.87 (s, H-7), 2.92 (dd, 10.0, 8.0, H-9), 4.66 and 4.46 (each d, 13.0, H₂-10), 5.50 (d, 8.0, H-1'), 4.16 (t, 8.0, H-2'), 4.29 (dd, 9.0, 8.0, H-3'), 4.18 (t, 9.0, H-4'), 4.09 (m, H-5'), 5.01 (dd, 12.0, 2.0, H-6'), 4.87 (dd, 12.0, 5.0, H-6'), 7.52 (d, 8.5, H-2''), 7.11 (d, 8.5, H-3''), 7.94 (d, 16.0, H-7''), 6.56 (d, 16.0, H-8''); ¹³C-NMR (100 MHz, CD₃D₂N): 95.4 (C-1), 141.0 (C-3), 104.6 (C-4), 39.2 (C-5), 79.1 (C-6), 62.3 (C-7), 66.1 (C-8), 43.5 (C-9), 60.9 (C-10), 100.4 (C-1'), 74.9 (C-2'), 78.1 (C-3'), 71.1 (C-4'), 75.9 (C-5'), 63.8 (C-6'), 126.1 (C-1''), 130.7 (C-2''), 116.7 (C-3''), 5''), 116.7 (C-3''), 5''), 161.4 (C-4''), 145.4 (C-7''), 115.0 (C-8''), 167.4 (C-9''). *Picrorhiza scrophulariiflora*.⁵¹

53. 6-O- α -L-(4''-O-trans-Cinnamoyl)rhamnopyranosylcatalpol



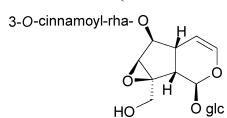
$C_{30}H_{38}O_{15}$: 638.2210; white amorphous powder; [α]_D²⁴ -150.0° (c=0.20, MeOH); ¹H-NMR (400 MHz, CD₃OD): 5.08 (d, 10.0, H-1), 6.38 (dd, 6.0, 2.0, H-3), 5.05 (dd, 6.0, 5.0, H-4), 2.42 (m, H-5), 4.04 (dd, 8.0, 2.0, H-6), 3.65 (d, 2.0, H-7), 2.56 (dd, 10.0, 8.0, H-9), 1.81 and 4.13 (each d, 13.0, H₂-10), 4.77 (d, 8.0, H-1'), 3.25 (dd, 9.0, 8.0, H-2'), 3.40 (dd, 9.0, 8.0, H-3'), 3.24 (dd, 10.0, 8.0, H-4'), 3.30 (m, partially overlapped by solvent signal, H-5'), 3.64 (dd, 12.0, 6.0, H-6'), 3.91 (dd, 12.0, 2.0, H-6''), 4.99 (d, 2.0, H-1''), 3.88—3.95 (overlapped, H-2'', 3'', 5''), 5.09 (t, 10.0, H-4'), 1.17 (d, 6.0, H₃-6''), 7.62 (m, H-2'''), 7.41 (m, H-3'''), 4'', 5''), 7.73 (d, 16.1, H-7'''), 6.58 (d, 16.0, H-8'''); ¹³C-NMR (100 MHz, CD₃OD): 95.2 (C-1), 142.3 (C-3), 103.5 (C-4), 37.4 (C-5), 84.2 (C-6), 59.5 (C-7), 66.6 (C-8), 43.4 (C-9), 61.5 (C-10), 99.8 (C-1'), 74.9 (C-2'), 77.7 (C-3'), 71.8 (C-4'), 78.6 (C-5'), 63.0 (C-6'), 100.5 (C-1''), 72.5 (C-2''), 70.3 (C-3''), 75.6 (C-4''), 68.3 (C-5''), 17.9 (C-6''), 135.8 (C-1'''), 129.3 (C-2'''), 6''), 130.0 (C-3'''), 5''), 131.6 (C-4'''), 146.7 (C-7'''), 118.9 (C-8'''), 168.3 (C-9'''). *Holmskioldia sanguinea* (Labiatae/Verbenaceae).⁵⁰

54. 6-O- α -L-(2''-O-trans-Cinnamoyl)-rhamnopyranosylcatalpol



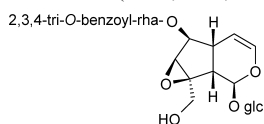
$C_{30}H_{38}O_{15}$: 638.2210; isolated as a mixture with 3''-O-cinnamoyl isomer; ¹H-NMR (400 MHz, CD₃OD): 5.08 (d, 10.0, H-1), 6.37 (dd, 6.0, 2.0, H-3), 5.07 (dd, 6.0, 5.0, H-4), 2.45 (m, H-5), 4.03 (dd, 8.0, 2.0, H-6), 3.65 (brs, H-7), 2.56 (dd, 10.0, 8.0, H-9), 3.81 and 4.15 (each d, 13.0, H₂-10), 4.77 (d, 8.0, H-1'), 3.22—3.29 (overlapped, H-2', 4'), 3.38 (t, 9.0, H-3'), 3.30 (m, partially overlapped by solvent signal, H-5'), 3.63 (dd, 12.0, 6.0, H-6'), 3.89 (dd, 12.0, 2.0, H-6'), 5.04 (d, 2.0, H-1''), 5.16 (dd, 4.0, 2.0, H-2''), 3.92 (dd, 9.0, 4.0, H-3''), 3.48 (t, 9.0, H-4''), 3.73—3.86 (overlapped, H-5''), 1.30 (d, 6.0, H₃-6''), 7.63 (m, H-2'''), 6''), 7.41 (m, H-3'''), 4'', 5''), 7.75 (d, 16.0, H-7'''), 6.60 (d, 16.0, H-8'''). *Holmskioldia sanguinea* (Labiatae/Verbenaceae).⁵⁰

55. 6-O- α -L-(3''-O-trans-Cinnamoyl)-rhamnopyranosylcatalpol



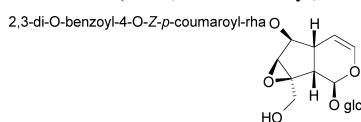
$C_{30}H_{38}O_{15}$: 638.2210; isolated as a mixture with 2''-O-cinnamoyl isomer; ¹H-NMR (400 MHz, CD₃OD): 5.10 (d, 10.0, H-1), 6.38 (dd, 6.0, 2.0, H-3), 5.13 (dd, 6.0, 5.0, H-4), 2.45 (m, H-5), 4.05 (dd, 8.0, 2.0, H-6), 3.66 (brs, H-7), 2.57 (dd, 10.0, 8.0, H-9), 3.83 and 4.15 (each d, 13.0, H₂-10), 4.78 (d, 8.0, H-1'), 3.22—3.29 (overlapped, H-2', 4'), 3.39 (t, 9.0, H-3'), 3.30 (m, partially overlapped by solvent signal, H-5'), 3.64 (dd, 12.0, 6.0, H-6'), 3.91 (dd, 12.0, 2.0, H-6'), 4.98 (d, 2.0, H-1''), 4.09 (dd, 4.0, 2.0, H-2''), 5.12 (dd, 9.0, 4.0, H-3''), 3.69 (t, 9.0, H-4''), 3.73—3.86 (overlapped, H-5''), 1.32 (d, 6.0, H₃-6''), 7.63 (m, H-2'''), 6''), 7.41 (m, H-3'''), 4'', 5''), 7.78 (d, 16.0, H-7'''), 6.61 (d, 16.0, H-8'''). *Holmskioldia sanguinea* (Labiatae/Verbenaceae).⁵⁰

56. 6-O- α -L-(2''-O-, 3''-O-, 4''-O-Tribenzoyl)-rhamnopyranosylcatalpol

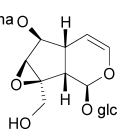


$C_{42}H_{46}O_{17}$: 822.2734; white amorphous powder; [α]_D²² -56.0° (c=0.11, MeOH), ¹H-NMR (500 MHz, CD₃OD): 5.13 (d, 10.0, H-1), 6.43 (dd, 6.0, 2.0, H-3), 5.19 (dd, 6.0, 5.0, H-4), 2.59 (m, H-5), 4.18 (dd, 8.0, 1.0, H-6), 3.75 (brs, H-7), 2.63 (dd, 10.0, 8.0, H-9), 3.83 and 4.18 (each d, 13.0, H₂-10), 4.78 (d, 8.0, H-1'), 3.27 (dd, 9.0, 8.0, H-2'), 3.39 (t, 9.0, H-3'), 3.24 (dd, 10.0, 8.0, H-4'), 3.30 (m, overlapped by solvent signal, H-5'), 3.62 (dd, 12.0, 6.0, H-6'), 3.91 (dd, 12.0, 2.0, H-6'), 5.32 (d, 2.0, H-1''), 5.72 (dd, 3.0, 2.0, H-2''), 5.79 (dd, 10.0, 3.0, H-3''), 5.64 (t, 10.0, H-4''), 4.35 (m, H-5''), 1.35 (d, 6.0, H₃-6''), 8.08 (m, H-2'''), 6''), 7.55 (m, H-3'''), 5''), 7.68 (m, H-4'''), 7.74 (m, H-2'''), 6''), 7.27 (m, H-3'''), 5''), 7.46 (m, H-4'''), 7.95 (m, H-2'''), 6''), 7.41 (m, H-3'''), 5''), 7.55 (m, H-4'''); ¹³C-NMR (125 MHz, CD₃OD): 95.2 (C-1), 142.6 (C-3), 103.3 (C-4), 37.3 (C-5), 85.4 (C-6), 59.6 (C-7), 66.6 (C-8), 43.4 (C-9), 61.5 (C-10), 99.8 (C-1'), 74.9 (C-2'), 77.7 (C-3'), 71.8 (C-4'), 78.7 (C-5'), 63.0 (C-6'), 98.1 (C-1''), 72.1 (C-2''), 71.6 (C-3''), 73.1 (C-4''), 68.3 (C-5''), 17.9 (C-6''), 130.7 (C-1'''), 130.8 (C-2'''), 6''), 129.9 (C-3'''), 5''), 134.9 (C-4'''), 166.9 (C-7'''), 130.4 (C-1'''), 130.5 (C-2'''), 6''), 129.4 (C-3'''), 5''), 134.5 (C-4'''), 166.8 (C-7'''), 130.5 (C-1'''), 130.6 (C-2'''), 6''), 129.7 (C-3'''), 5''), 134.7 (C-4'''). *Gmelina philippensis* (Verbenaceae).⁵²

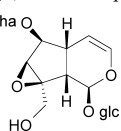
57. 6-O- α -L-(2''-O-, 3''-O-Dibenzoyl, 4''-O-cis-p-coumaroyl)rhamnopyranosylcatalpol



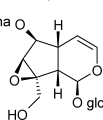
$C_{44}H_{46}O_{18}$: 862.2683; isolated as a mixture with 4''-O-trans coumaroyl isomer; ¹H-NMR (500 MHz, CD₃OD): 5.11 (d, 10.0, H-1), 6.41 (dd, 6.0, 2.0, H-3), 5.10 (dd, 6.0, 5.0, H-4), 2.57 (m, H-5), 4.13 (dd, 8.0, 1.0, H-6), 3.72 (d, 1.0, H-7), 2.61 (dd, 10.0, 8.0, H-9), 3.82 and 4.16 (each d, 13.0, H₂-10), 4.77 (d, 8.0, H-1'), 3.26 (dd, 9.0, 8.0, H-2'), 3.39 (t, 9.0, H-3'), 3.24 (dd, 10.0, 8.0, H-4'), 3.30 (m, overlapped by solvent signal, H-5'), 3.62 (dd, 12.0, 6.0, H-6'), 3.91 (dd, 12.0, 2.0, H-6'), 5.27 (d, 2.0, H-1''), 5.69 (dd, 3.0, 2.0, H-2''), 5.57 (dd, 10.0, 3.0, H-3''), 5.46 (t, 10.0, H-4''), 4.15 (m, H-5''), 1.31 (d, 6.0, H₃-6''), 8.05 (m, H-2'''), 6''), 7.53 (m, H-3'''), 5''), 7.66 (m, H-4'''), 7.82 (m, H-2'''), 6''), 7.29 (m, H-3'''), 5''), 7.49 (m, H-4'''), 7.48 (m, H-2'''), 6''), 6.63 (m, H-3'''), 5''), 6.83 (d, 13.0, H-7'''), 5.67 (d, 13.0, H-8'''); ¹³C-NMR (125 MHz, CD₃OD): 95.1 (C-1), 142.6 (C-3), 103.2 (C-4), 37.2 (C-5), 84.8 (C-6), 59.4 (C-7), 66.6 (C-8), 43.3 (C-9), 61.5 (C-10), 99.7 (C-1'), 74.8 (C-2'), 77.7 (C-3'), 71.8 (C-4'), 78.7 (C-5'), 63.0 (C-6'), 97.7 (C-1''), 71.8 (C-2''), 71.8 (C-3''), 72.2 (C-4''), 68.1 (C-5''), 17.9 (C-6''), 130.7 (C-1'''), 130.8 (C-2'''), 6''), 129.8 (C-3'''), 5''), 134.8 (C-4'''), 167.0 (C-7'''), 130.5 (C-1'''), 130.6 (C-2'''), 6''), 129.5 (C-3'''), 5''), 134.6 (C-4'''), 166.8 (C-7'''), 127.0 (C-1'''), 133.8 (C-2'''), 6''), 116.1 (C-3'''), 5''), 161.1 (C-4'''), 147.3 (C-7'''), 114.9 (C-8'''), 167.0 (C-9'''). *Gmelina philippensis* (Verbenaceae/Scutellarioideae).⁵²

58. 6-*O*- α -L-(2''-*O*-,3''-*O*-Dibenzoyl,4''-*O*-*trans*-*p*-coumaroyl)rhamnopyranosylcatalpol

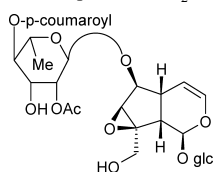
$C_{44}H_{46}O_{18}$: 862.2683; isolated as a mixture with 4''-*O*-*cis*-coumaroyl isomer; 1H -NMR (500 MHz, CD_3OD): 5.12 (d, 10.0, H-1), 6.42 (dd, 6.0, 2.0, H-3), 5.17 (dd, 6.0, 5.0, H-4), 2.57 (m, H-5), 4.15 (dd, 8.0, 1.0, H-6), 3.74 (d, 1.0, H-7), 2.63 (dd, 10.0, 8.0, H-9), 3.83 and 4.17 (each d, 13.0, H_2 -10), 4.78 (d, 8.0, H-1'), 3.27 (dd, 9.0, 8.0, H-2'), 3.39 (t, 9.0, H-3'), 3.25 (dd, 10.0, 8.0, H-4'), 3.30 (m, overlapped with solvent signal, H-5'), 3.62 (dd, 12.0, 6.0, H-6'), 3.91 (dd, 12.0, 2.0, H-6'), 5.28 (d, 2.0, H-1''), 5.70 (dd, 3.0, 2.0, H-2''), 5.67 (dd, 10.0, 3.0, H-3''), 5.51 (t, 10.0, H-4''), 4.25 (m, H-5''), 1.32 (d, 6.0, H_3 -6''), 8.06 (m, H-2'''), 7.53 (m, H-3'''), 5'''), 7.66 (m, H-4'''), 7.80 (m, H-2''''), 6'''), 7.31 (m, H-3''''), 5'''), 7.49 (m, H-4''''), 7.36 (m, H-2''''), 6'''), 6.70 (m, H-3''''), 5'''), 7.57 (d, 16.0, H-7''''), 6.20 (d, 16.0, H-8''''), 13C-NMR (125 MHz, CD_3OD): 95.1 (C-1), 142.6 (C-3), 103.2 (C-4), 37.3 (C-5), 85.1 (C-6), 59.5 (C-7), 66.6 (C-8), 43.3 (C-9), 61.5 (C-10), 99.7 (C-1'), 74.8 (C-2'), 77.7 (C-3'), 71.8 (C-4'), 78.7 (C-5'), 63.0 (C-6'), 97.9 (C-1''), 71.8 (C-2''), 71.8 (C-3''), 71.9 (C-4''), 68.4 (C-5''), 17.9 (C-6''), 130.7 (C-1'''), 130.8 (C-2'''), 129.8 (C-3'''), 134.8 (C-4'''), 166.8 (C-7'''), 130.5 (C-1''''), 130.6 (C-2''''), 6'''), 129.5 (C-3''''), 5'''), 134.5 (C-4''''), 166.8 (C-7''''), 126.1 (C-1'''''), 131.5 (C-2'''''), 117.3 (C-3'''''), 163.1 (C-4'''''), 148.2 (C-7'''''), 113.2 (C-8'''''), 168.4 (C-9'''''). *Gmelina philippensis* (Verbenaceae/Scutellarioideae).⁵²

59. 6-*O*- α -L-(2''-*O*-Benzoyl,3''-*O*-*trans*-*p*-coumaroyl)rhamnopyranosylcatalpol

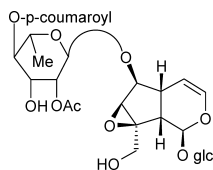
$C_{37}H_{42}O_{17}$: 758.2421; 1H -NMR (500 MHz, CD_3OD): 5.11 (d, 10.0, H-1), 6.39 (dd, 6.0, 2.0, H-3), 5.14 (dd, 6.0, 5.0, H-4), 2.52 (m, H-5), 4.10 (dd, 8.0, 1.0, H-6), 3.68 (brs, H-7), 2.59 (dd, 10.0, 8.0, H-9), 3.81 and 4.15 (each d, 13.0, H_2 -10), 4.75 (d, 8.0, H-1'), 3.26 (dd, 9.0, 8.0, H-2'), 3.39 (t, 9.0, H-3'), 3.24 (dd, 10.0, 8.0, H-4'), 3.30 (m, overlapped with solvent peak, H-5'), 3.62 (dd, 12.0, 6.0, H-6'), 3.91 (dd, 12.0, 2.0, H_6 -6'), 5.16 (d, 2.0, H-1''), 5.54 (dd, 3.0, 2.0, H-2''), 5.32 (dd, 10.0, 3.0, H-3''), 3.76 (t, 10.0, H-4''), 3.95 (m, H-5''), 1.38 (d, 6.0, H_3 -6''), 8.05 (m, H-2'''), 7.51 (m, H-3'''), 5'''), 7.65 (m, H-4'''), 7.27 (m, H-2''''), 6'''), 6.71 (m, H-3''''), 5'''), 7.50 (d, 16.0, H-7''''), 6.19 (d, 16.0, H-8''''), 13C-NMR (125 MHz, CD_3OD): 95.2 (C-1), 142.4 (C-3), 103.4 (C-4), 37.2 (C-5), 84.4 (C-6), 59.4 (C-7), 66.6 (C-8), 43.3 (C-9), 61.5 (C-10), 99.7 (C-1'), 74.8 (C-2'), 77.7 (C-3'), 71.8 (C-4'), 78.7 (C-5'), 63.0 (C-6'), 97.7 (C-1''), 72.2 (C-2''), 73.0 (C-3''), 71.9 (C-4''), 70.3 (C-5''), 18.1 (C-6''), 130.7 (C-1'''), 130.8 (C-2'''), 129.8 (C-3'''), 134.7 (C-4'''), 166.9 (C-7'''), 126.5 (C-1''''), 131.2 (C-2''''), 6'''), 117.1 (C-3''''), 5'''), 162.5 (C-4''''), 147.2 (C-7''''), 114.2 (C-8''''), 168.5 (C-9'''''). *Gmelina philippensis* (Verbenaceae/Scutellarioideae).⁵²

60. 6-*O*- α -L-(2''-*O*-,3''-*O*-Dibenzoyl)rhamnopyranosylcatalpol

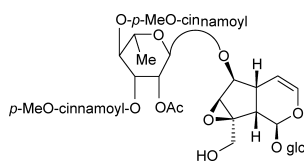
$C_{35}H_{40}O_{16}$: 716.2316; 1H -NMR (500 MHz, CD_3OD): 5.11 (d, 10.0, H-1), 6.41 (dd, 6.0, 2.0, H-3), 5.16 (dd, 6.0, 5.0, H-4), 2.54 (m, H-5), 4.12 (dd, 8.0, 1.0, H-6), 3.71 (brs, H-7), 2.60 (dd, 10.0, 8.0, H-9), 3.82 and 4.16 (each d, 13.0, H_2 -10), 4.78 (d, 8.0, H-1'), 3.26 (dd, 9.0, 8.0, H-2'), 3.39 (t, 9.0, H-3'), 3.25 (dd, 10.0, 8.0, H-4'), 3.30 (m, overlapped with solvent signal, H-5'), 3.62 (dd, 12.0, 6.0, H-6'), 3.91 (dd, 12.0, 2.0, H_6 -6'), 5.19 (d, 2.0, H-1''), 5.61 (dd, 3.0, 2.0, H-2''), 5.47 (dd, 10.0, 3.0, H-3''), 3.48 (t, 10.0, H-4''), 3.99 (m, H-5''), 1.41 (d, 6.0, H_3 -6''), 8.02 (m, H-2'''), 7.51 (m, H-3'''), 5'''), 7.64 (m, H-4'''), 7.89 (m, H-2''''), 6'''), 7.35 (m, H-3''''), 5'''), 7.53 (m, H-4''''), 13C-NMR (125 MHz, CD_3OD): 95.2 (C-1), 142.4 (C-3), 103.4 (C-4), 37.3 (C-5), 84.5 (C-6), 59.4 (C-7), 66.6 (C-8), 43.3 (C-9), 61.5 (C-10), 99.7 (C-1'), 74.9 (C-2'), 77.7 (C-3'), 71.8 (C-4'), 78.7 (C-5'), 63.0 (C-6'), 97.8 (C-1''), 72.1 (C-2''), 73.8 (C-3''), 71.9 (C-4''), 70.4 (C-5''), 18.1 (C-6''), 130.7 (C-1'''), 130.8 (C-2'''), 129.8 (C-3'''), 134.7 (C-4'''), 166.9 (C-7'''), 130.5 (C-1''''), 130.6 (C-2''''), 6'''), 129.4 (C-3''''), 134.3 (C-4''''), 167.3 (C-7'''''). *Gmelina philippensis* (Verbenaceae/Scutellarioideae).⁵²

61. Scrophuloside A₂

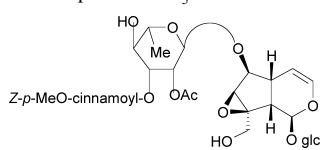
$C_{32}H_{40}O_{17}$: 696.2265; amorph. powder, $[\alpha]_D^{23} - 151.0^\circ$ ($c=0.15$, MeOH); UV (MeOH): 226 (4.19), 301 sh (4.28), 314 (4.34); 1H -NMR (400 MHz, CD_3OD): 5.08 (d, 1.0, H-1), 6.38 (dd, 6.0, 2.0, H-3), 5.06 (superimposed, H-4), 2.44 (m, H-5), 4.03 (dd, 8.0, 1.0, H-6), 3.64 (brs, H-7), 2.57 (dd, 10.0, 7.5, H-9), 3.81 (d, 13.0, H-10), 4.15 (d, 13.0, H-10), 4.77 (d, 7.5, H-1'), 3.26 (superimposed, H-2'), 3.39 (dd, 9.0, 9.0, H-3'), 3.26 (superimposed, H-4'), 3.32 (m, H-5'), 3.62 (dd, 12.6, 6.0, H-6'), 3.91 (dd, 12.0, 2.0, H-6'), 5.02 (d, 2.0, H-1''), 5.11 (dd, 3.0, 2.0, H-2''), 4.12 (dd, 10.0, 3.0, H-3''), 5.03 (dd, 10.0, 10.0, H-4''), 3.93 (m, H-5''), 1.18 (d, 6.0, H_3 -6''), 2.16 (s, AcO-2''), 6.38 (d, 16.0, H-8''), 7.67 (d, 16.0, H-7''), 7.48 (d, 9.0, H-2'''), 6.81 (d, 9.0, H-3'''), 5'''), 13C-NMR (100 MHz, CD_3OD): 95.1 (C-1), 142.4 (C-3), 103.0 (C-4), 37.2 (C-5), 84.8 (C-6), 59.5 (C-7), 66.5 (C-8), 43.3 (C-9), 61.4 (C-10), 99.7 (C-1'), 75.1 (C-2'), 77.7 (C-3'), 71.8 (C-4'), 78.6 (C-5'), 62.9 (C-6'), 97.7 (C-1''), 74.2 (C-2''), 68.4 (C-3''), 74.8 (C-4''), 68.3 (C-5''), 17.8 (C-6''), 20.8, 172.2 (AcO-2''), 168.6 (C-9''), 114.9 (C-8'''), 147.1 (C-7'''), 127.1 (C-1'''), 131.2 (C-2'''), 6'''), 116.8 (C-3'''), 5'''), 161.3 (C-4'''). *Scrophularia nodosa* (Scrophulariaceae).⁵³

62. Scrophuloside A₃

$C_{32}H_{40}O_{17}$: 696.2265; amorphous powder, $[\alpha]_D^{23} - 161.3^\circ$ ($c=0.19$, MeOH); UV (MeOH): 228 (4.30), 302 sh (4.34), 315 (4.41); 1H -NMR (400 MHz, CD_3OD): 5.10 (d, 10.0, H-1), 6.40 (dd, 6.0, 2.0, H-3), 5.10 (superimposed, H-4), 2.47 (m, H-5), 4.05 (dd, 8.0, 1.0, H-6), 3.67 (brs, H-7), 2.58 (dd, 10.0, 7.5, H-9), 3.83 (d, 13.0, H-10), 4.15 (d, 13.0, H-10), 4.78 (d, 8.0, H-1'), 3.26 (superimposed, H-2'), 3.40 (dd, 9.0, 9.0, H-3'), 3.26 (superimposed, H-4'), 3.31 (m, H-5'), 3.92 (dd, 12.6, 2.0, H-6'), 5.02 (d, 2.0, H-1''), 4.08 (dd, 3.0, 2.0, H-2''), 5.22 (dd, 10.0, 3.0, H-3''), 5.27 (dd, 10.0, 10.0, H-4''), 4.12 (m, H-5''), 1.20 (d, 6.0, H_3 -6''), 2.00 (s, AcO-3''), 6.31 (d, 16.0, H-8''), 7.63 (d, 16.0, H-7''), 7.47 (d, 9.0, H-2'''), 6.81 (d, 9.0, H-3'''), 5'''), 13C-NMR (100 MHz, CD_3OD): 95.1 (C-1), 142.3 (C-3), 103.0 (C-4), 37.2 (C-5), 84.3 (C-6), 59.4 (C-7), 66.5 (C-8), 43.3 (C-9), 61.4 (C-10), 99.7 (C-1'), 74.8 (C-2'), 77.7 (C-3'), 71.8 (C-4'), 78.6 (C-5'), 62.9 (C-6'), 100.3 (C-1''), 70.1 (C-2''), 73.1 (C-3''), 72.2 (C-4''), 68.3 (C-5''), 17.8 (C-6''), 20.8, 172.0 (AcO-3''), 168.2 (C-9''), 114.3 (C-8'''), 147.3 (C-7'''), 127.0 (C-1'''), 131.3 (C-2'''), 6'''), 116.8 (C-3'''), 5'''), 161.5 (C-4'''). *Scrophularia nodosa* (Scrophulariaceae).⁵³

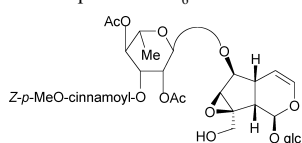
63. Scrophuloside A₄

$C_{43}H_{50}O_{19}$: 870.2945; amorphous powder, $[\alpha]_D^{23} + 49.3^\circ$ ($c=0.74$, MeOH); UV (MeOH): 227 (4.43), 300 sh (4.69), 311 (4.73); 1H -NMR (400 MHz, CD_3OD): 5.11 (d, 10.0, H-1), 6.41 (dd, 6.0, 2.0, H-3), 5.12 (superimposed, H-4), 2.52 (m, H-5), 4.09 (dd, 8.0, 1.0, H-6), 3.69 (brs, H-7), 2.61 (dd, 10.0, 7.5, H-9), 3.84 (d, 13.0, H-10), 4.17 (d, 13.0, H-10), 4.79 (d, 8.0, H-1'), 3.27 (superimposed, H-2'), 3.41 (dd, 9.0, 9.0, H-3'), 3.27 (superimposed, H-4'), 3.33 (m, H-5'), 3.64 (dd, 12.0, 6.0, H-6'), 3.93 (dd, 12.0, 2.0, H-6'), 5.11 (superimposed, H-1''), 5.39 (dd, 3.0, 2.0, H-2''), 5.48 (dd, 10.0, 3.0, H-3''), 5.28 (dd, 10.0, 10.0, H-4''), 4.13 (m, H-5''), 1.25 (d, 6.0, H_3 -6''), 2.17 (s, AcO-2''), 6.34 (d, 16.0, H-8''), 7.64 (d, 16.0, H-7''), 7.48 (d, 9.0, H-2'''), 6.81 (d, 9.0, H-3'''), 5'''), 3.79 (s, MeO-4'''), 6.23 (d, 16.0, H-8'''), 7.55 (d, 16.0, H-7'''), 7.44 (d, 9.0, H-2''''), 6'''), 6.88 (d, 9.0, H-3''''), 5'''), 3.79 (s, MeO-4''''), 13C-NMR (100 MHz, CD_3OD): 95.1 (C-1), 142.4 (C-3), 103.2 (C-4), 37.1 (C-5), 84.9 (C-6), 59.4 (C-7), 66.5 (C-8), 43.2 (C-9), 61.4 (C-10), 99.7 (C-1'), 74.8 (C-2'), 77.6 (C-3'), 71.7 (C-4'), 78.6 (C-5'), 62.9 (C-6'), 97.7 (C-1''), 71.5 (C-2''), 70.6 (C-3''), 72.2 (C-4''), 68.3 (C-5''), 17.8

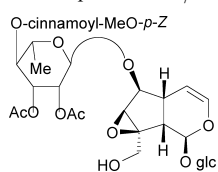
64. Scrophuloside A₅

(C-6''), 20.7, 171.6 (AcO-2''), 167.7 (C-9''), 115.0 (C-8''), 147.2 (C-7''), 128.0 (C-1''), 131.1 (C-2''), 6''), 115.3 (C-3''), 5''), 163.3 (C-4''), 55.8 (MeO-4''), 168.0 (C-9'''), 115.0 (C-8'''), 147.7 (C-7'''), 128.0 (C-1'''), 131.0 (C-2'''), 6'''), 115.3 (C-3'''), 5'''), 163.2 (C-4'''). *Scrophularia nodosa* (Scrophulariaceae).⁵³

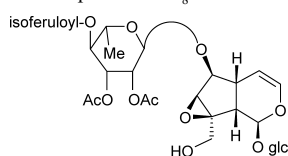
C₃₃H₄₂O₁₇: 710.2421; amorphous powder; $[\alpha]_D^{25}$ -94.8° (*c*=0.30, MeOH); UV (MeOH): 225 (4.10), 300 sh (4.26), 310 (4.29); ¹H-NMR (400 MHz, CD₃OD): 5.09 (d, 10.0, H-1), 6.38 (dd, 6.0, 2.0, H-3), 5.10 (superimposed, H-4), 2.47 (m, H-5), 4.04 (dd, 8.0, 1.0, H-6), 3.65 (br s, H-7), 2.57 (dd, 9.0, 7.5, H-9), 3.81 (d, 13.0, H-10), 4.14 (d, 13.0, H-10), 4.77 (d, 7.5, H-1'), 3.25 (superimposed, H-2', 4'), 3.39 (dd, 9.0, 9.0, H-3'), 3.32 (m, H-5'), 3.61 (dd, 12.0, 6.0, H-6'), 3.91 (dd, 12.0, 2.0, H-6'), 5.00 (d, 2.0, H-1''), 5.27 (dd, 3.0, 2.0, H-2''), 5.19 (dd, 10.0, 3.0, H-3''), 3.56 (dd, 10.0, 10.0, H-4''), 3.86 (m, H-5''), 1.31 (d, 6.0, H₃-6''), 2.02 (s, AcO-2''), 5.80 (d, 13.0, H-8''), 6.91 (d, 13.0, H-7''), 7.69 (d, 9.0, H-2'''), 6.89 (d, 9.0, H-3'''), 3.82 (s, MeO-4''); ¹³C-NMR (100 MHz, CD₃OD): 95.1 (C-1), 142.3 (C-3), 103.3 (C-4), 37.2 (C-5), 84.3 (C-6), 59.3 (C-7), 66.5 (C-8), 43.3 (C-9), 61.4 (C-10), 99.7 (C-1'), 74.8 (C-2'), 78.6 (C-3'), 71.8 (C-4'), 77.7 (C-5'), 62.9 (C-6'), 97.5 (C-1''), 71.4 (C-2''), 71.6 (C-3''), 72.6 (C-4''), 70.3 (C-5''), 17.9 (C-6''), 20.6, 171.7 (AcO-2''), 167.3 (C-9''), 117.1 (C-8''), 144.9 (C-7''), 128.7 (C-1'''), 133.3 (C-2'''), 114.4 (C-3'''), 5''), 162.1 (C-4'''), 113.3 (C-6'''), 55.7 (MeO-4''). *Scrophularia nodosa* (Scrophulariaceae).⁵³

65. Scrophuloside A₆

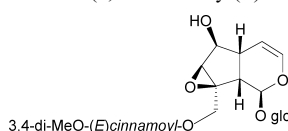
C₃₅H₄₄O₁₈: 752.2527; amorphous powder; $[\alpha]_D^{25}$ -77.5° (*c*=1.15, MeOH); UV (MeOH): 224 sh (4.10), 291 sh (4.09), 311 (4.19); ¹H-NMR (400 MHz, CD₃OD): 5.09 (d, 10.0, H-1), 6.39 (dd, 6.0, 2.0, H-3), 5.07 (superimposed, H-4), 2.48 (m, H-5), 4.05 (dd, 8.0, 1.0, H-6), 3.66 (br s, H-7), 2.58 (dd, 10.0, 7.5, H-9), 3.81 (d, 13.0, H-10), 4.15 (d, 13.0, H-10), 4.77 (d, 8.0, H-1'), 3.26 (dd, 9.0, 8.0, H-2'), 3.40 (dd, 9.0, 9.0, H-3'), 3.25 (dd, 9.0, 9.0, H-4'), 3.25 (m, H-5'), 3.63 (dd, 12.0, 5.0, H-6'), 3.91 (dd, 12.0, 2.0, H-6'), 5.05 (d, 2.0, H-1''), 5.31 (dd, 4.0, 2.0, H-2''), 5.35 (dd, 10.0, 4.0, H-3''), 5.08 (dd, 10.0, 10.0, H-4''), 4.01 (m, H-5''), 1.20 (d, 6.0, H₃-6''), 2.01 (s, AcO-2''), 2.06 (s, AcO-4''), 5.70 (d, 13.0, H-8''), 6.92 (d, 13.0, H-7''), 7.69 (d, 9.0, H-2'''), 6.91 (d, 9.0, H-3'''), 3.82 (s, MeO-4''); ¹³C-NMR (100 MHz, CD₃OD): 95.1 (C-1), 142.4 (C-3), 103.2 (C-4), 37.1 (C-5), 84.8 (C-6), 59.4 (C-7), 66.5 (C-8), 43.2 (C-9), 61.4 (C-10), 99.7 (C-1'), 74.8 (C-2'), 77.6 (C-3'), 71.7 (C-4'), 78.6 (C-5'), 62.9 (C-6'), 97.6 (C-1''), 71.3 (C-2''), 70.2 (C-3''), 72.2 (C-4''), 68.1 (C-5''), 17.7 (C-6''), 20.6, 171.6 (AcO-2''), 20.7, 171.7 (AcO-4''), 166.7 (C-9''), 116.3 (C-8''), 146.0 (C-7''), 128.5 (C-1'''), 133.6 (C-2'''), 114.5 (C-3'''), 5''), 162.2 (C-4'''), 113.6 (C-6'''), 55.8 (MeO-4''). *Scrophularia nodosa* (Scrophulariaceae).⁵³

66. Scrophuloside A₇

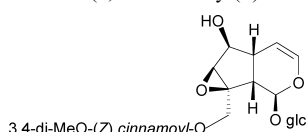
C₃₅H₄₄O₁₈: 752.2527; amorphous powder; $[\alpha]_D^{25}$ -141.2° (*c*=0.70, MeOH); UV (MeOH): 224 sh (4.07), 300 sh (4.20), 311 (4.25); ¹H-NMR (400 MHz, CD₃OD): 5.08 (d, 10.0, H-1), 6.38 (dd, 6.0, 2.0, H-3), 5.00 (dd, 6.0, 4.0, H-4), 2.45 (m, H-5), 4.03 (dd, 8.0, 1.0, H-6), 3.65 (br s, H-7), 2.57 (dd, 10.0, 7.5, H-9), 3.18 (d, 13.0, H-10), 4.14 (d, 13.0, H-10), 4.76 (d, 8.0, H-1'), 3.25 (superimposed, H-2', 4'), 3.39 (dd, 9.0, 9.0, H-3'), 3.29 (superimposed, H-5') 3.62 (dd, 12.0, 6.0, H-6'), 3.91 (dd, 12.0, 2.5, H-6'), 5.05 (d, 2.0, H-1''), 5.29 (dd, 4.0, 2.0, H-2''), 5.24 (dd, 10.0, 4.0, H-3''), 5.10 (dd, 10.0, 9.5, H-4''), 3.94 (m, H-5''), 1.18 (d, 6.0, H₃-6''), 2.15 (s, AcO-2''), 1.96 (s, AcO-3''), 5.81 (d, 12.5, H-8''), 7.00 (d, 12.5, H-7''), 7.69 (d, 9.0, H-2'''), 6.91 (d, 9.0, H-3'''), 3.82 (s, MeO-4''); ¹³C-NMR (100 MHz, CD₃OD): 95.1 (C-1), 142.4 (C-3), 103.1 (C-4), 37.1 (C-5), 84.6 (C-6), 59.3 (C-7), 66.5 (C-8), 43.2 (C-9), 61.3 (C-10), 99.7 (C-1'), 74.8 (C-2'), 77.6 (C-3'), 71.7 (C-4'), 78.6 (C-5'), 62.9 (C-6'), 97.6 (C-1''), 71.0 (C-2''), 70.7 (C-3''), 71.8 (C-4''), 68.1 (C-5''), 17.7 (C-6''), 20.6, 171.6 (AcO-2''), 20.6, 171.5 (AcO-3''), 166.7 (C-9''), 116.5 (C-8''), 146.5 (C-7''), 128.6 (C-1'''), 133.4 (C-2'''), 114.4 (C-3'''), 5''), 162.2 (C-4'''), 113.4 (C-6'''), 55.8 (MeO-4''). *Scrophularia nodosa* (Scrophulariaceae).⁵³

67. Scrophuloside A₈

C₃₅H₄₄O₁₉: 768.2476; amorphous powder; $[\alpha]_D^{25}$ -91.5° (*c*=0.56, MeOH); UV (MeOH): 216 sh (4.29), 231 sh (4.11), 243 sh (4.03); ¹H-NMR (400 MHz, CD₃OD): 5.09 (d, 10.0, H-1), 6.39 (dd, 6.0, 1.5, H-3), 5.08 (superimposed, H-4), 2.48 (m, H-5), 4.05 (d, 8.0, H-6), 3.67 (s, H-7), 2.59 (dd, 10.0, 7.5, H-9), 3.82 (d, 13.0, H-10), 4.16 (d, 13.0, H-10), 4.79 (d, 8.0, H-1'), 3.28 (dd, 9.0, 8.0, H-2'), 3.42 (dd, 9.0, 9.0, H-3'), 3.27 (dd, 9.0, 9.0, H-4'), 3.34 (m, H-5'), 3.64 (dd, 12.0, 6.0, H-6'), 3.92 (dd, 12.0, 1.0, H-6'), 5.07 (d, 1.5, H-1''), 5.31 (dd, 3.0, 1.5, H-2''), 5.36 (dd, 10.0, 3.0, H-3''), 5.17 (dd, 10.0, 10.0, H-4''), 4.07 (m, H-5''), 1.22 (d, 6.0, H₃-6''), 2.16 (s, AcO-2''), 1.93 (s, AcO-3''), 6.31 (d, 16.0, H-8''), 7.61 (d, 16.0, H-7''), 7.09 (d, 2.0, H-2'''), 6.94 (d, 8.0, H-5'''), 7.07 (dd, 8.0, 2.0, H-6'''), 3.88 (s, MeO-4''); ¹³C-NMR (100 MHz, CD₃OD): 95.1 (C-1), 142.4 (C-3), 103.4 (C-4), 37.1 (C-5), 84.9 (C-6), 59.4 (C-7), 66.5 (C-8), 43.2 (C-9), 61.4 (C-10), 99.7 (C-1'), 74.8 (C-2'), 77.6 (C-3'), 71.7 (C-4'), 78.5 (C-5'), 62.9 (C-6'), 97.7 (C-1''), 71.6 (C-2''), 70.6 (C-3''), 71.9 (C-4''), 68.2 (C-5''), 17.8 (C-6''), 20.7, 171.7 (AcO-2''), 20.0, 171.6 (AcO-3''), 167.9 (C-9''), 115.0 (C-8''), 147.7 (C-7''), 128.6 (C-1'''), 114.9 (C-2'''), 148.6 (C-3'''), 151.7 (C-4'''), 112.5 (C-5'''), 123.1 (C-6'''), 56.4 (MeO-4''). *Scrophularia nodosa* (Scrophulariaceae).⁵³

68. 10-*O*-(3,4-Dimethoxy-*E*-cinnamoyl)catalpol

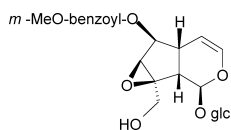
C₂₆H₃₂O₁₃: 552.1843; isolated as a mixture with *Z*-isomer in ratio (2 : 1); UV (?): 230, 294, 321; IR (?): 3367, 1700, 1630, 1598, 1508; ¹H-NMR (500 MHz, CD₃OD): 5.05 (d, 9.2, H-1), 6.36 (dd, 6.0, 1.8, H-3), 5.08 (dd, 6.0, 4.9, H-4), 2.66 (m, H-5), 3.95 (dd, 7.9, 1.2, H-6), 3.64 (br s, H-7), 2.98 (dd, 9.2, 7.7, H-9), 4.25 (d, 12.8, H-10), 4.98 (d, 12.8, H-10), 4.75 (d, 7.8, H-1'), 3.21 (dd, 9.1, 7.8, H-2'), 3.42 (dd, 9.1, 8.4, H-3'), 3.17 (dd, 10.0, 8.4, H-4'), 3.38 (m, H-5'), 3.64 (dd, 11.9, 6.0, H-6'), 3.92 (dd, 11.9, 2.0, H-6'), 6.45 (d, 16.0, H-8''), 7.66 (d, 16.0, H-7''), 7.32 (d, 1.9, H-2''), 6.98 (d, 8.4, H-5''), 7.19 (dd, 8.4, 1.9, H-6''), 3.86 (s, MeO), 3.87 (s, MeO); ¹³C-NMR (125 MHz, CD₃OD): 95.6 (C-1), 141.8 (C-3), 103.7 (C-4), 37.4 (C-5), 79.5 (C-6), 62.8 (C-7), 63.6 (C-8), 43.7 (C-9), 64.4 (C-10), 100.3 (C-1'), 74.8 (C-2'), 78.5 (C-3'), 71.5 (C-4'), 77.9 (C-5'), 63.0 (C-6'), 168.7 (C-9''), 116.3 (C-8''), 146.7 (C-7''), 128.9 (C-1''), 117.7 (C-2''), 150.8 (C-3''), 152.9 (C-4''), 112.7 (C-5''), 124.1 (C-6''), 56.6, 56.7 (OMe). *Lagotis yunnanensis*.⁵⁴

69. 10-*O*-(3,4-Dimethoxy-*Z*-cinnamoyl)catalpol

C₂₆H₃₂O₁₃: 552.1842; isolated as a mixture with *E*-isomer in ratio (1 : 2); UV (?): 230, 294, 321; IR (?): 3367, 1700, 1630, 1598, 1508; ¹H-NMR (500 MHz, CD₃OD): 5.03 (d, 9.2, H-1), 6.34 (dd, 6.0, 1.8, H-3), 5.07 (dd, 6.0, 4.9, H-4), 2.66 (m, H-5), 3.93 (dd, 7.9, 1.2, H-6), 3.64 (br s, H-7), 3.01 (dd, 9.2, 7.7, H-9), 4.20 (d, 12.7, H-10), 4.94 (d, 12.7, H-10), 4.74 (d, 7.8, H-1'), 3.19 (dd, 9.1, 7.8, H-2'), 3.40 (dd, 9.1, 8.4, H-3'), 3.16 (dd, 10.0, 8.4, H-4'), 3.38 (m, H-5'), 3.62 (dd, 11.9, 6.0, H-6'), 3.90 (dd, 11.9, 2.0, H-6'), 7.70 (d, 1.9, H-2''), 6.94 (d, 8.4, H-5''), 7.12 (dd, 8.4, 1.9, H-6''), 6.91 (d, 12.9, H-7''), 5.88 (d, 12.9, H-8''), 3.85 (s, 2×MeO); ¹³C-NMR (125 MHz, CD₃OD): 95.6 (C-1), 141.8 (C-3), 103.7 (C-4), 37.4 (C-5), 79.5 (C-6), 62.8 (C-7), 63.6 (C-8), 43.7 (C-9), 64.4 (C-10), 100.3 (C-1'), 74.8 (C-2'), 78.5 (C-3'), 71.5 (C-4'), 77.9 (C-5')

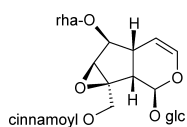
63.0 (C-6'), 129.2 (C-1''), 112.1 (C-2''), 149.8 (C-3''), 151.8 (C-4''), 115.0 (C-5''), 126.2 (C-6''), 145.2 (C-7''), 117.5 (C-8''), 167.9 (C-9''), 56.4 (2×MeO). *Lagotis yunnanensis*.⁵⁴⁾

70. Picoside V (6-*m*-Methoxybenzoylcatalpol)



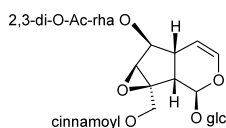
$C_{23}H_{28}O_{12}$: 496.1580; isolated as its pentaacetate; amorphous powder; mp 158—160 °C; $[\alpha]_D^{28} -79.2^\circ$ ($c=0.84$, $CHCl_3$); IR (KBr): 3449, 2945, 1753, 1653, 1598, 1513, 1430, 1374, 1286, 1221, 1103, 932, 763, 600, 532; 1H -NMR (300 MHz, $CDCl_3$): 4.88 (d, 9.6, H-1), 6.32 (d, 5.7, H-3), 4.99 (d, 5.0, H-4), 2.70 (m, H-5), 5.24 (m, H-6), 3.75 (br s, H-7), 2.69 (m, H-9), 4.02 (d, 12.7, H-10), 4.90 (d, 12.7, H-10), 5.13 (d, 9.0, H-1'), 5.0, 5.24, 5.18, 5.27 (m, H-2'—5'), 4.23 (dd, 12.6, 4.2, H-6'), 4.32 (dd, 12.6, 4.2, H-6'), 7.55 (d, 1.5, H-2''), 6.95 (d, 8.4, H-4''), 7.68 (d, 8.4, H-5''), 7.73 (d, 8.4, H-6''), 3.97 (s, MeO-3''), 2.04, 2.07, 2.08, 2.12, 2.13 (5×Ac); ^{13}C -NMR (75 MHz, $CDCl_3$): 94.7 (C-1), 141.5 (C-3), 102.6 (C-4), 35.5 (C-5), 80.2 (C-6), 59.3 (C-7), 63.1 (C-8), 42.1 (C-9), 61.7 (C-10), 97.1 (C-1'), 71.1 (C-2'), 72.7 (C-3'), 68.7 (C-4'), 73.0 (C-5'), 62.7 (C-6'), 121.8 (C-1''), 112.3 (C-2''), 146.6 (C-3''), 114.5 (C-4''), 133.9 (C-5''), 125.1 (C-6''), 166.6 (C-7''), 56.6 (MeO-3''), 20.94, 21.02×2, 21.07×2, 169.5, 169.7, 170.6, 170.9, 171.1 (5×Ac). *Picrorhiza kurroa* (Scrophulariaceae).¹⁹⁹⁾

71. Gmelinoside A



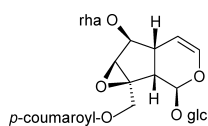
$C_{30}H_{38}O_{15}$: 638.2210; white amorphous powder; $[\alpha]_D^{25} -98.8^\circ$ ($c=0.72$, MeOH); UV (MeOH): 222 (4.18), 312 (4.32); IR (KBr): 3400, 1720, 1630, 1655, 1540; 1H -NMR (600 MHz, CD_3OD): 5.01 (d, 9.6, H-1), 6.38 (dd, 6.5, 1.7, H-3), 5.06 (dd, 6.5, 4.5, H-4), 2.45 (m, H-5), 4.04 (dd, 8.0, 1.7, H-6), 3.66 (s, H-7), 2.57 (dd, 9.6, 7.6, H-9), 4.65 (d, 13.1, H-10), 5.69 (d, 13.1, H-10), 4.78 (d, 7.9, H-1'), 3.26 (dd, 9.2, 7.9, H-2''), 3.40 (t, 9.2, H-3'), 3.27 (t, 9.2, H-4'), 3.30 (m, H-5'), 3.63 (dd, 11.9, 6.6, H-6'), 3.91 (dd, 12.0, 2.0, H-6'), 5.10 (d, 1.7, H-1''), 3.89 (dd, 3.7, 2.0, H-2'''), 3.81 (dd, 9.3, 3.7, H-3'''), 3.49 (t, 9.5, H-4''), 3.97 (dd, 10.6, 6.2, H-5''), 1.18 (d, 6.3, H₃-6''), 7.62 (d, 8.0, H-2'''), 6.93 (t, 8.0, H-3'''), 7.40 (m, H-4'''), 7.73 (d, 16.0, H-7'''), 6.58 (d, 16.0, H-8'''); ^{13}C -NMR (90 MHz, CD_3OD): 95.2 (C-1), 142.4 (C-3), 103.5 (C-4), 37.4 (C-5), 84.2 (C-6), 59.5 (C-7), 63.2 (C-8), 43.3 (C-9), 64.9 (C-10), 100.5 (C-1'), 75.5 (C-1''), 77.7 (C-3'), 71.9 (C-4'), 78.1 (C-5'), 61.7 (C-6'), 99.8 (C-1''), 72.3 (C-2''), 72.2 (C-3''), 73.6 (C-4''), 69.3 (C-5''), 18.3 (C-6''), 135.8 (C-1'''), 130.1 (C-2'''), 129.3 (C-3'''), 146.7 (C-7'''), 118.9 (C-8'''), 168.3 (C-9'''). *Gmelina arborea* (Verbenaceae).⁵⁶⁾

72. Gmelinoside B



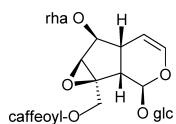
$C_{34}H_{42}O_{17}$: 722.2421; amorphous powder; $[\alpha]_D^{25} -138.6^\circ$ ($c=0.65$, MeOH); UV (MeOH): 218 (4.31), 300 (4.27), 315 (4.30); IR (KBr): 3425, 1725, 1665, 1620, 1520; 1H -NMR (600 MHz, CD_3OD): 5.08 (d, 9.6, H-1), 6.36 (dd, 6.0, 1.7, H-3), 5.05 (dd, 6.0, 5.0, H-4), 2.53 (m, H-5), 4.07 (dd, 8.0, 1.0, H-6), 3.67 (s, H-7), 2.60 (dd, 9.6, 7.7, H-9), 4.76 (d, 12.5, H-10), 5.72 (d, 12.5, H-10), 4.76 (d, 7.9, H-1'), 3.27 (dd, 9.3, 7.9, H-2''), 3.40 (t, 9.1, H-3'), 3.25 (t, 9.1, H-4'), 3.34 (m, H-5'), 3.67 (dd, 11.9, 6.7, H-6'), 3.94 (dd, 11.9, 2.1, H-6'), 5.12 (d, 1.7, H-1''), 5.31 (dd, 3.4, 1.7, H-2'''), 5.37 (dd, 9.9, 3.4, H-3'''), 3.41 (t, 9.9, H-4''), 3.95 (dd, 10.0, 6.0, H-5''), 1.22 (d, 6.2, H₃-6''), 7.42 (d, 8.2, H-2'''), 6.79 (t, 8.5, H-3'''), 7.43 (m, H-4'''), 7.77 (d, 16.0, H-7'''), 6.52 (d, 16.0, H-8'''), 1.89, 2.12 (each s, 2×Ac); ^{13}C -NMR (90 MHz, CD_3OD): 95.1 (C-1), 142.5 (C-3), 103.2 (C-4), 37.2 (C-5), 84.2 (C-6), 59.4 (C-7), 63.1 (C-8), 43.6 (C-9), 64.1 (C-10), 99.7 (C-1'), 74.9 (C-2'), 77.7 (C-3'), 71.8 (C-4'), 77.8 (C-5'), 62.4 (C-6'), 97.9 (C-1''), 72.3 (C-2''), 72.2 (C-3''), 72.8 (C-4''), 69.0 (C-5''), 17.8 (C-6''), 135.5 (C-1'''), 129.8 (C-2'''), 129.5 (C-3'''), 132.0 (C-4'''), 147.6 (C-7'''), 117.9 (C-8'''), 167.5 (C-9'''), 20.7×2, 171.7, 171.9 (2×Ac). *Gmelina arborea* (Verbenaceae).⁵⁶⁾

73. Gmelinoside C



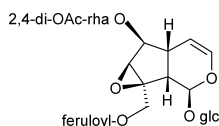
$C_{30}H_{38}O_{16}$: 654.2159; white amorphous powder; $[\alpha]_D^{25} -187.3^\circ$ ($c=0.82$, MeOH); UV (MeOH): 231 (4.03), 304 (4.13), 338 (4.39); IR (KBr): 3385, 1695, 1650, 1610, 1515; 1H -NMR (600 MHz, CD_3OD): 5.13 (d, 9.5, H-1), 6.34 (dd, 6.0, 1.8, H-3), 5.07 (dd, 6.0, 4.5, H-4), 2.55 (m, H-5), 4.04 (dd, 8.2, 1.7, H-6), 3.63 (s, H-7), 2.63 (dd, 9.5, 8.0, H-9), 4.71 (d, 13.0, H-10), 5.65 (d, 13.0, H-10), 4.83 (d, 7.8, H-1'), 3.34 (dd, 9.5, 7.8, H-3'), 3.67 (t, 9.5, H-3'), 3.44 (t, 9.5, H-4'), 3.18 (m, H-5'), 3.54 (dd, 12.0, 5.8, H-6'), 3.95 (dd, 12.0, 1.8, H-6'), 5.11 (d, 1.8, H-1''), 3.94 (br d, 3.8, H-2''), 3.90 (dd, 9.0, 3.7, H-3''), 3.68 (t, 9.2, H-4''), 3.88 (dd, 10.0, 6.3, H-5''), 1.29 (d, 6.5, H₃-6''), 7.46 (d, 8.7, H-2'''), 6.81 (d, 8.7, H-3'''), 7.59 (d, 16.1, H-7'''), 6.29 (d, 16.1, H-8'''); ^{13}C -NMR (90 MHz, CD_3OD): 95.2 (C-1), 142.2 (C-3), 103.4 (C-4), 37.2 (C-5), 84.1 (C-6), 59.6 (C-7), 63.1 (C-8), 43.6 (C-9), 64.1 (C-10), 101.0 (C-1'), 74.4 (C-2'), 78.1 (C-3'), 71.9 (C-4'), 78.4 (C-5'), 62.9 (C-6'), 100.0 (C-1''), 72.8 (C-2''), 72.3 (C-3''), 73.1 (C-4''), 69.0 (C-5''), 18.3 (C-6''), 127.2 (C-1'''), 130.7 (C-2'''), 116.4 (C-3'''), 161.4 (C-4'''), 147.3 (C-7'''), 114.6 (C-8'''), 169.1 (C-9'''). *Gmelina arborea* (Verbenaceae).⁵⁶⁾

74. Gmelinoside D



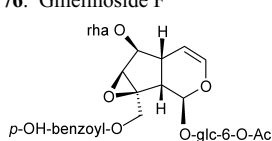
$C_{30}H_{38}O_{17}$: 670.2108; amorphous powder; $[\alpha]_D^{25} -158.5^\circ$ ($c=0.54$, MeOH); UV (MeOH): 223 (4.10), 248 (3.98), 304 sh (4.17), 332 (4.28); IR (KBr): 3415, 1686, 1660, 1623, 1528; 1H -NMR (600 MHz, CD_3OD): 5.10 (d, 9.5, H-1), 6.43 (dd, 6.2, 1.8, H-3), 5.12 (dd, 6.2, 4.4, H-4), 2.67 (m, H-5), 4.01 (dd, 8.0, 1.6, H-6), 3.63 (s, H-7), 2.59 (dd, 9.5, 8.5, H-9), 4.68 (d, 13.0, H-10), 4.98 (d, 8.0, H-1'), 3.43 (dd, 9.1, 8.0, H-2''), 3.49 (t, 9.1, H-3'), 3.38 (t, 9.0, H-4'), 3.12 (m, H-5'), 3.65 (dd, 11.7, 5.7, H-6'), 3.88 (dd, 11.7, 1.8, H-6'), 5.19 (d, 1.6, H-1''), 4.03 (dd, 3.5, 1.8, H-2'''), 3.88 (dd, 9.5, 3.5, H-3'''), 3.48 (t, 9.5, H-4'''), 3.73 (dd, 10.2, 6.3, H-5'''), 1.23 (d, 6.0, H₃-6''), 7.06 (d, 2.0, H-2'''), 6.78 (d, 8.23, H-5'''), 6.95 (dd, 8.2, 2.0, H-6'''), 7.65 (d, 15.9, H-7'''), 6.36 (d, 15.9, H-8'''); ^{13}C -NMR (90 MHz, CD_3OD): 95.6 (C-1), 142.4 (C-3), 103.5 (C-4), 37.3 (C-5), 84.4 (C-6), 59.6 (C-7), 63.3 (C-8), 43.5 (C-9), 64.1 (C-10), 101.3 (C-1'), 74.6 (C-2'), 78.9 (C-3'), 71.4 (C-4'), 78.1 (C-5'), 62.5 (C-6'), 99.9 (C-1''), 72.7 (C-2''), 71.3 (C-3''), 73.5 (C-4''), 69.6 (C-5''), 18.1 (C-6''), 126.9 (C-1'''), 114.6 (C-2'''), 149.6 (C-3'''), 146.3 (C-4'''), 116.2 (C-5'''), 123.6 (C-6'''), 147.8 (C-7'''), 115.7 (C-8'''), 168.2 (C-9'''). *Gmelina arborea* (Verbenaceae).⁵⁶⁾

75. Gmelinoside E



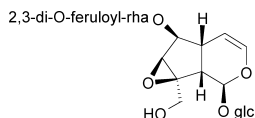
$C_{35}H_{44}O_{19}$: 768.2476; white amorphous powder; $[\alpha]_D^{25} -116.8^\circ$ ($c=0.43$, MeOH); UV (MeOH): 216 (4.21), 228 (4.12), 245 (4.18), 279 (4.27), 310 (4.33); IR (KBr): 3460, 1695, 1650, 1630, 1590; 1H -NMR (600 MHz, CD_3OD): 5.07 (d, 9.5, H-1), 6.53 (dd, 6.0, 1.7, H-3), 5.10 (dd, 6.0, 4.3, H-4), 2.46 (m, H-5), 4.11 (dd, 8.2, 1.7, H-6), 3.65 (s, H-7), 2.65 (dd, 9.5, 8.2, H-9), 4.81 (d, 12.5, H-10), 5.69 (d, 12.5, H-10), 4.79 (d, 7.8, H-1'), 3.28 (dd, 9.1, 7.8, H-2''), 3.45 (t, 9.0, H-3'), 3.28 (t, 9.0, H-4'), 3.29 (m, H-5'), 3.77 (dd, 11.8, 5.7, H-6'), 3.85 (dd, 11.8, 2.0, H-6'), 5.12 (d, 1.7, H-1''), 5.43 (dd, 3.5, 1.8, H-2'''), 3.97 (dd, 9.5, 3.5, H-3'''), 4.92 (t, 9.6, H-4''), 3.82 (dd, 10.2, 6.2, H-5''), 1.22 (d, 6.2, H₃-6''), 7.19 (d, 2.0, H-2'''), 6.92 (d, 8.5, H-5'''), 7.06 (dd, 8.5, 1.8, H-6'''), 7.69 (d, 15.9, H-7'''), 6.43 (d, 15.9, H-8'''), 3.89 (s, MeO-3''), 1.88, 2.03 (each s, Ac); ^{13}C -NMR (90 MHz, CD_3OD): 95.1 (C-1), 142.7 (C-3), 103.4 (C-4), 37.4 (C-5), 84.6 (C-6), 59.1 (C-7), 63.1 (C-8), 43.3 (C-9), 64.9 (C-10), 100.1 (C-1'), 74.4 (C-2'), 78.4 (C-3'), 71.1 (C-4'), 78.1 (C-5'), 62.1 (C-6'), 98.9 (C-1''), 73.9 (C-2''), 70.1 (C-3''), 75.0 (C-4''), 68.7 (C-5''), 17.9 (C-6''), 127.4 (C-1'''), 111.8 (C-2'''), 149.8 (C-3'''), 150.2 (C-4'''), 116.6 (C-5'''), 124.3 (C-6'''), 147.5 (C-7'''), 115.1 (C-8'''), 168.8 (C-9'''), 56.5 (MeO-3''), 20.2, 20.5, 171.3, 171.9 (2×Ac). *Gmelina arborea* (Verbenaceae).⁵⁶⁾

76. Gmelinoside F



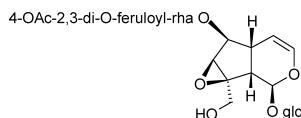
$C_{30}H_{38}O_{17}$; 670.2108; white amorphous powder; $[\alpha]_D^{25} -162.2^\circ$ ($c=0.74$, MeOH); UV (MeOH): 233 (4.64), 258 (4.58), 272 (4.45), 302 sh (4.64), 327 (4.23); IR (KBr): 3370, 1725, 1658, 1630, 1530; 1H -NMR (600 MHz, CD_3OD): 5.09 (d, 9.2, H-1), 6.40 (dd, 6.0, 2.0, H-3), 5.12 (dd, 6.0, 4.5, H-4), 2.50 (m, H-5), 4.07 (dd, 8.0, 1.5, H-6), 3.70 (s, H-7), 2.71 (dd, 9.2, 8.0, H-9), 4.74 (d, 12.9, H-10), 5.83 (d, 12.9, H-10), 4.86 (d, 8.0, H-1'), 3.49 (dd, 9.5, 8.0, H-2'), 3.71 (t, 9.5, H-3'), 3.49 (t, 9.5, H-4'), 3.24 (m, H-5'), 4.18 (dd, 11.9, 6.7, H-6'), 4.39 (dd, 11.9, 2.0, H-6''), 5.14 (d, 1.8, H-1''), 3.78 (dd, 3.3, 1.8, H-2''), 3.69 (dd, 9.5, 3.5, H-3''), 3.40 (t, 9.3, H-4''), 3.87 (dd, 10.0, 6.2, H-5''), 1.21 (d, 6.3, H₃-6''), 7.93 (d, 8.8, H-2'''), 6.98 (d, 8.8, H-3'''), 7.28 (d, 8.4, H-5'''), 2.10 (s, AcO-6'); ^{13}C -NMR (90 MHz, CD_3OD): 95.3 (C-1), 143.0 (C-3), 103.3 (C-4), 37.4 (C-5), 84.2 (C-6), 59.3 (C-7), 63.3 (C-8), 43.5 (C-9), 64.7 (C-10), 102.4 (C-1'), 73.5 (C-2'), 77.2 (C-3'), 71.6 (C-4'), 74.4 (C-5'), 63.7 (C-6'), 100.7 (C-1''), 70.5 (C-2''), 71.1 (C-3''), 71.9 (C-4''), 68.5 (C-5''), 18.6 (C-6''), 124.1 (C-1'''), 130.3 (C-2'''), 116.1 (C-3'''), 163.6 (C-4'''), 168.9 (C-7'''), 20.9, 171.4 (AcO-6'). *Gmelina arborea* (Verbenaceae).⁵⁶

77. Gmelinoside G



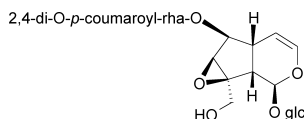
$C_{41}H_{48}O_{20}$; 860.2738; colorless amorphous powder; $[\alpha]_D^{25} -146.9^\circ$ ($c=1.01$, MeOH); UV (MeOH): 225 (4.49), 328 (4.58); IR (KBr): 3450, 1718, 1650, 1638, 1545; 1H -NMR (600 MHz, CD_3OD): 5.00 (d, 9.4, H-1), 6.41 (dd, 6.5, 1.8, H-3), 5.13 (dd, 6.5, 4.5, H-4), 2.59 (m, H-5), 4.08 (dd, 8.5, 1.8, H-6), 3.66 (s, H-7), 2.67 (dd, 9.4, 7.8, H-9), 3.84 (d, 13.2, H-10), 4.05 (d, 13.2, H-10), 4.87 (d, 8.1, H-1'), 3.37 (dd, 9.5, 8.1, H-2'), 3.26 (t, 9.5, H-3'), 3.43 (t, 10.1, H-4'), 3.40 (m, H-5'), 3.72 (dd, 11.6, 6.5, H-6'), 3.90 (dd, 11.6, 2.2, H-6''), 5.10 (d, 1.9, H-1''), 5.33 (dd, 3.5, 1.9, H-2''), 4.98 (dd, 9.5, 3.5, H-3''), 3.55 (t, 9.5, H-4''), 3.71 (dd, 10.0, 6.2, H-5''), 1.38 (d, 6.5, H₃-6''), 7.21 (d, 1.8, H-2'''), 6.79 (d, 8.5, H-5'''), 7.10 (dd, 8.5, 1.8, H-6'''), 7.57 (d, 16.0, H-7'''), 6.46 (d, 16.0, H-8'''), 7.18 (d, 2.0, H-2'''), 6.88 (d, 8.0, H-5'''), 6.92 (dd, 8.0, 2.0, H-6'''), 7.38 (d, 16.5, H-7'''), 6.32 (d, 16.5, H-8'''), 3.78, 3.90 (each s, OMe); ^{13}C -NMR (90 MHz, CD_3OD): 95.1 (C-1), 142.2 (C-3), 103.8 (C-4), 36.9 (C-5), 84.2 (C-6), 59.1 (C-7), 66.1 (C-8), 43.7 (C-9), 61.6 (C-10), 101.8 (C-1'), 73.9 (C-2'), 78.6 (C-3'), 71.5 (C-4'), 77.8 (C-5'), 62.7 (C-6'), 98.3 (C-1''), 71.6 (C-2''), 71.2 (C-3''), 72.1 (C-4''), 69.7 (C-5''), 17.8 (C-6''), 127.3 (C-1'''), 112.2 (C-2'''), 151.9 (C-3'''), 149.2 (C-4'''), 116.9 (C-5'''), 123.7 (C-6'''), 148.1 (C-7'''), 115.8 (C-8'''), 168.4 (C-9'''), 128.0 (C-1'''), 112.0 (C-2'''), 150.6 (C-3'''), 148.9 (C-4'''), 114.9 (C-5'''), 123.4 (C-6'''), 147.6 (C-7'''), 115.5 (C-8'''), 167.9 (C-9'''), 56.4, 56.5 (2×OMe). *Gmelina arborea* (Verbenaceae).⁵⁶

78. Gmelinoside H



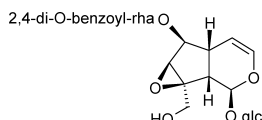
$C_{43}H_{50}O_{21}$; 902.2844; amorphous powder; $[\alpha]_D^{25} -166.2^\circ$ ($c=0.58$, MeOH); UV (MeOH): 229 (4.24), 301 (4.06), 334 (4.43); IR (KBr): 3455, 1705, 1668, 1635, 1535; 1H -NMR (600 MHz, CD_3OD): 5.16 (d, 9.5, H-1), 6.33 (dd, 6.0, 1.2, H-3), 5.18 (dd, 6.0, 4.0, H-4), 2.45 (m, H-5), 4.06 (dd, 8.8, 1.5, H-6), 3.75 (s, H-7), 2.60 (dd, 9.5, 7.9, H-9), 3.92 (d, 13.3, H-10), 4.29 (d, 13.3, H-10), 4.99 (d, 8.0, H-1'), 3.27 (dd, 9.2, 8.0, H-2'), 3.40 (t, 9.2, H-3'), 3.32 (t, 9.2, H-4'), 3.27 (m, H-5'), 3.69 (dd, 12.1, 6.5, H-6'), 3.93 (dd, 12.1, 2.1, H-6''), 5.07 (d, 1.8, H-1''), 5.42 (dd, 3.5, 1.7, H-2''), 5.53 (dd, 9.2, 3.5, H-3''), 4.98 (t, 9.9, H-4''), 4.00 (dq, 10.0, 6.5, H-5''), 1.18 (d, 6.2, H₃-6''), 7.37 (d, 2.1, H-2'''), 6.96 (d, 8.0, H-5'''), 7.21 (dd, 8.0, 2.1, H-6'''), 7.72 (d, 15.9, H-7'''), 6.42 (d, 15.9, H-8'''), 3.87, 3.93 (each s, OMe), 1.96 (s, OAc); ^{13}C -NMR (90 MHz, CD_3OD): 95.8 (C-1), 142.4 (C-3), 103.6 (C-4), 37.1 (C-5), 84.1 (C-6), 58.4 (C-7), 65.9 (C-8), 43.2 (C-9), 62.1 (C-10), 100.1 (C-1'), 74.1 (C-2'), 77.8 (C-3'), 71.5 (C-4'), 78.0 (C-5'), 62.9 (C-6'), 97.7 (C-1''), 71.8 (C-2''), 70.9 (C-3''), 72.9 (C-4''), 68.8 (C-5''), 18.4 (C-6''), 129.9 (C-1'''), 111.9 (C-2'''), 150.5 (C-3'''), 150.2 (C-4'''), 116.5 (C-5'''), 124.3 (C-6'''), 147.9 (C-7'''), 115.7 (C-8'''), 168.0 (C-9'''), 129.2 (C-1'''), 111.1 (C-2'''), 149.5 (C-3'''), 150.0 (C-4'''), 116.3 (C-5'''), 124.0 (C-6'''), 147.4 (C-7'''), 115.2 (C-8'''), 166.6 (C-9'''), 56.1, 56.8 (2×OMe), 20.7, 171.2 (Ac). *Gmelina arborea* (Verbenaceae).⁵⁶

79. Gmelinoside I



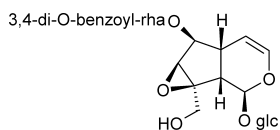
$C_{39}H_{44}O_{18}$; 800.2527; amorphous powder; $[\alpha]_D^{25} -106.2^\circ$ ($c=0.45$, MeOH); UV (MeOH): 235 (4.13), 302 (4.13), 328 (4.49); IR (KBr): 3465, 1715, 1662, 1630, 1528; 1H -NMR (600 MHz, CD_3OD): 5.14 (d, 9.5, H-1), 6.44 (dd, 6.3, 2.0, H-3), 5.21 (dd, 6.3, 4.5, H-4), 2.55 (m, H-5), 4.11 (dd, 8.0, 1.5, H-6), 3.78 (s, H-7), 2.64 (dd, 9.6, 8.0, H-9), 3.80 (d, 12.9, H-10), 4.14 (d, 12.9, H-10), 4.63 (d, 7.8, H-1'), 3.23 (dd, 8.8, 7.8, H-2'), 3.39 (t, 9.0, H-3'), 3.24 (t, 9.0, H-4'), 3.29 (m, H-5'), 3.67 (dd, 11.7, 5.4, H-6'), 3.86 (dd, 11.7, 3.0, H-6''), 5.09 (d, 1.8, H-1''), 5.23 (dd, 9.2, 3.5, H-2''), 4.08 (dd, 9.5, 3.5, H-3''), 4.84 (t, 9.5, H-4''), 3.94 (dd, 9.5, 6.6, H-5''), 1.23 (d, 6.1, H₃-6''), 7.49 (d, 8.6, H-2'''), 6.76 (d, 8.6, H-3'''), 5.76 (d, 16.5, H-7'''), 7.68 (d, 16.5, H-8'''), 6.47 (d, 16.5, H-8'''), 7.33 (d, 8.6, H-2'''), 6.65 (d, 8.6, H-3'''), 7.56 (d, 16.5, H-7'''), 6.39 (d, 16.5, H-8'''); ^{13}C -NMR (90 MHz, CD_3OD): 95.3 (C-1), 142.1 (C-3), 103.1 (C-4), 37.7 (C-5), 84.7 (C-6), 59.4 (C-7), 66.1 (C-8), 43.6 (C-9), 61.1 (C-10), 102.2 (C-1'), 74.9 (C-2'), 77.5 (C-3'), 71.0 (C-4'), 78.6 (C-5'), 62.4 (C-6'), 98.2 (C-1''), 73.7 (C-2''), 69.8 (C-3''), 74.1 (C-4''), 68.6 (C-5''), 17.2 (C-6''), 127.6 (C-1'''), 131.7 (C-2'''), 116.9 (C-3'''), 161.6 (C-4'''), 147.4 (C-7'''), 114.7 (C-8'''), 168.4 (C-9'''), 126.9 (C-1'''), 131.3 (C-2'''), 115.4 (C-3'''), 159.6 (C-4'''), 147.1 (C-7'''), 114.5 (C-8'''), 167.8 (C-9'''). *Gmelina arborea* (Verbenaceae).⁵⁶

80. Gmelinoside J



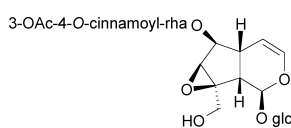
$C_{35}H_{40}O_{16}$; 716.2316; white amorphous powder; $[\alpha]_D^{25} -132.5^\circ$ ($c=0.38$, MeOH); UV (MeOH): 236 (4.43), 276 (3.78); IR (KBr): 3535, 1698, 1658, 1613, 1545; 1H -NMR (600 MHz, CD_3OD): 5.18 (d, 9.5, H-1), 6.32 (dd, 6.0, 1.9, H-3), 5.11 (dd, 6.0, 4.5, H-4), 2.50 (m, H-5), 4.09 (dd, 8.0, 1.5, H-6), 3.70 (s, H-7), 2.61 (dd, 9.6, 8.0, H-9), 3.82 (d, 13.5, H-10), 4.16 (d, 13.5, H-10), 4.78 (d, 8.0, H-1'), 3.26 (dd, 9.5, 7.8, H-2'), 3.41 (t, 9.5, H-3'), 3.28 (t, 9.5, H-4'), 3.31 (m, H-5'), 3.63 (dd, 11.9, 6.8, H-6'), 3.90 (dd, 11.9, 2.3, H-6''), 5.09 (d, 2.1, H-1''), 5.53 (dd, 3.8, 2.1, H-2''), 4.01 (dd, 9.8, 3.8, H-3''), 5.38 (t, 9.8, H-4''), 3.81 (dq, 9.7, 6.0, H-5''), 1.26 (d, 6.4, H₃-6''), 8.13 (dd, 8.0, 1.0, H-2'''), 7.41 (t, 8.0, H-3'''), 7.54 (tt, 8.0, H-4'''), 8.08 (dd, 8.0, 1.0, H-2'''), 7.39 (t, 8.0, H-3'''), 7.49 (tt, 8.0, H-4'''); ^{13}C -NMR (90 MHz, CD_3OD): 95.2 (C-1), 142.5 (C-3), 103.4 (C-4), 37.3 (C-5), 84.6 (C-6), 59.7 (C-7), 66.6 (C-8), 43.3 (C-9), 61.2 (C-10), 99.7 (C-1'), 74.8 (C-2'), 77.7 (C-3'), 71.8 (C-4'), 78.6 (C-5'), 63.0 (C-6'), 98.9 (C-1''), 73.9 (C-2''), 70.2 (C-3''), 74.6 (C-4''), 68.4 (C-5''), 18.1 (C-6''), 131.2 (C-1'''), 130.8 (C-2'''), 129.6 (C-3'''), 134.4 (C-4'''), 167.7 (C-7'''), 131.1 (C-1'''), 130.6 (C-2'''), 129.4 (C-3'''), 134.4 (C-4'''), 167.3 (C-7'''). *Gmelina arborea* (Verbenaceae).⁵⁶

81. Gmelinoside K



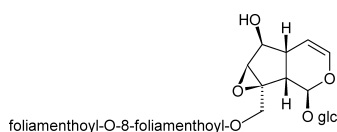
$C_{35}H_{40}O_{16}$; 716.2316; white amorphous powder; $[\alpha]_D^{25} -140.2^\circ$ ($c=0.62$, MeOH); UV (MeOH): 236 (4.36), 276 (4.22); IR (KBr): 3500, 1705, 1664, 1625, 1585; 1H -NMR (600 MHz, CD_3OD): 5.12 (d, 9.5, H-1), 6.46 (dd, 6.0, 1.8, H-3), 5.12 (dd, 6.2, 4.4, H-4), 2.67 (m, H-5), 4.01 (dd, 8.0, 1.6, H-6), 3.65 (s, H-7), 2.59 (dd, 9.5, 8.0, H-9), 3.98 (d, 12.8, H-10), 4.62 (d, 12.8, H-10), 4.98 (d, 8.0, H-1'), 3.43 (dd, 9.1, 8.0, H-2'), 3.49 (t, 9.1, H-3'), 3.38 (t, 9.1, H-4'), 3.12 (m, H-5'), 3.65 (dd, 11.7, 5.7, H-6'), 3.88 (dd, 11.7, 1.8, H-6'), 5.19 (d, 1.8, H-1''), 4.03 (dd, 3.5, 1.8, H-2''), 5.38 (dd, 9.5, 3.5, H-3''), 5.48 (t, 9.5, H-4''), 3.63 (dd, 10.2, 6.3, H-5''), 1.19 (d, 6.2, H₃-6''), 7.96 (dd, 8.5, 1.2, H-2'''), 7.47 (t, H-3'''), 7.62 (tt, 7.6, H-4'''), 7.85 (dd, 8.5, 1.2, H-2'''), 7.45 (t, 7.8, H-3'''), 7.59 (tt, 8.0, H-4'''); ^{13}C -NMR (90 MHz, CD_3OD): 95.7 (C-1), 142.3 (C-3), 103.2 (C-4), 37.5 (C-5), 83.4 (C-6), 59.0 (C-7), 66.2 (C-8), 42.9 (C-9), 61.6 (C-10), 99.8 (C-1'), 73.3 (C-2'), 77.2 (C-3'), 71.3 (C-4'), 77.4 (C-5'), 61.3 (C-6'), 98.9 (C-1''), 70.1 (C-2''), 73.3 (C-3''), 72.4 (C-4''), 68.0 (C-5''), 17.3 (C-6''), 129.9 (C-1'''), 129.2 (C-2'''), 128.8 (C-3'''), 133.5 (C-4'''), 167.2 (C-5'''), 129.1 (C-1'''), 129.2 (C-2'''), 128.5 (C-3'''), 133.4 (C-4'''), 165.1 (C-7'''). *Gmelina arborea* (Verbenaceae).⁵⁶⁾

82. Gmelinoside L



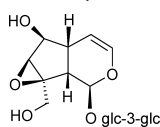
$C_{32}H_{40}O_{16}$; 680.2316; amorphous powder; $[\alpha]_D^{25} -125.6^\circ$ ($c=0.80$, MeOH); UV (MeOH): 236 (4.68), 316 (4.63); IR (KBr): 3380, 1725, 1665, 1636, 1560; 1H -NMR (600 MHz, CD_3OD): 5.08 (d, 9.6, H-1), 6.39 (dd, 6.0, 1.7, H-3), 5.11 (dd, 6.0, 4.6, H-4), 2.47 (m, H-5), 4.06 (dd, 8.0, 1.7, H-6), 3.67 (s, H-7), 2.58 (dd, 9.6, 7.3, 4'), 3.82 (d, 13.0, H-10), 4.16 (d, 13.0, H-10), 4.78 (d, 7.9, H-1'), 3.29 (dd, 9.3, 7.9, H-2'), 3.43 (t, 9.3, H-3'), 3.34 (t, 9.1, H-4'), 3.25 (m, H-5'), 3.66 (dd, 11.9, 6.8, H-6'), 3.92 (dd, 11.9, 1.9, H-6'), 5.02 (d, 1.6, H-1''), 4.09 (dd, 3.0, 1.6, H-2''), 5.29 (dd, 10.0, 3.0, H-3''), 5.42 (t, 10.0, H-4''), 4.00 (dq, 10.0, 6.0, H-5''), 1.21 (d, 6.2, H₃-6''), 7.70 (d, 8.2, H-2'''), 7.13 (t, 8.2, H-3'''), 7.34 (m, H-4'''), 7.76 (d, 16.0, H-7'''), 6.52 (d, 16.0, H-8'''), 1.90 (s, AcO-3''); ^{13}C -NMR (90 MHz, CD_3OD): 95.2 (C-1), 142.1 (C-3), 103.4 (C-4), 37.2 (C-5), 84.1 (C-6), 59.3 (C-7), 66.6 (C-8), 43.3 (C-9), 61.4 (C-10), 100.3 (C-1'), 74.8 (C-2'), 78.6 (C-3'), 71.8 (C-4'), 77.7 (C-5'), 61.9 (C-6'), 99.7 (C-1''), 70.1 (C-2''), 73.2 (C-3''), 72.5 (C-4''), 68.3 (C-5''), 17.8 (C-6''), 135.4 (C-1'''), 130.1 (C-2'''), 129.4 (C-3'''), 131.8 (C-4'''), 147.3 (C-7'''), 118.1 (C-8'''), 167.6 (C-9'''), 20.6, 171.3 (AcO-3''). *Gmelina arborea* (Verbenaceae).⁵⁶⁾

83. 10-Bisfoliamenthoylecatalpol



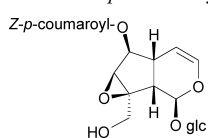
$C_{35}H_{50}O_{14}$; 694.320; $[\alpha]_D^{25} -32.0^\circ$ ($c=0.12$, MeOH); 1H -NMR (300 MHz, CD_3OD): 5.03 (d, 9.6, H-1), 6.32 (dd, 6.1, 1.8, H-3), 5.06 (m, H-4), 2.21 (m, H-5), 3.93 (d, 8.3, H-6), 3.44 (brs, H-7), 2.58 (dd, 9.6, 7.8, H-9), 4.19 and 4.96 (each d, 12.7, H₂-10), 4.75 (d, 7.5, H-1'), 3.10—3.35 (m, H-2', 3', 4', 5'), 3.63 (dd, 5.8, 5.2, H-6'), 3.87 (m, H-6'), 6.75 (m, H-3'', 3''), 2.35 (m, H₂-4'', 4''), 2.17 (m, H₂-5'', 5''), 5.39 (m, H-7'', 7''), 4.64 (d, 7.0, H-8''), 4.07 (d, 6.7, H-8''); ^{13}C -NMR (75 MHz, CD_3OD): 95.7 (C-1), 141.7 (C-3), 103.7 (C-4), 39.1 (C-5), 79.4 (C-6), 62.7 (C-7), 63.6 (C-8), 43.7 (C-9), 64.3 (C-10), 100.4 (C-1'), 74.8 (C-2'), 77.8 (C-3'), 71.4 (C-4'), 78.4 (C-5'), 62.3 (C-6'), 169.4, 169.6 (C-1'', 1''), 128.9, 129.0 (C-2'', 2''), 143.2, 143.6 (C-3'', 3''), 28.0 (C-4'', 4''), 39.0 (C-5'', 5''), 142.4, 138.4 (C-6'', 6''), 120.7, 125.7 (C-7'', 7''), 63.0, 59.4 (C-8'', 8''), 12.5, 12.6 (C-9'', 9''), 16.2, 16.5 (C-10'', 10''). *Penstemon newberryi* (Scrophulariaceae).⁵⁷⁾

84. 3'-O-β-D-Glucopyranosylcatalpol



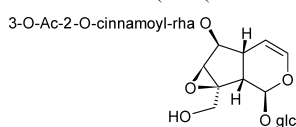
$C_{21}H_{32}O_{15}$; 524.1741; amorphous powder; $[\alpha]_D^{27} -74.9^\circ$ ($c=3.41$, MeOH); 1H -NMR (400 MHz, CD_3OD): 5.02 (d, 9.8, H-1), 6.34 (d, 5.4, H-3), 5.07 (dd, 5.4, 4.6, H-4), 2.27 (m, H-5), 3.92 (brd, 8.0, H-6), 3.45 (brs, H-7), 2.53 (dd, 9.8, 8.3, H-9), 3.80 (d, 13.1, H-10), 4.11 (d, 13.1, H-10), 4.77 (d, 7.8, H-1'), 4.59 (d, 7.8, H-1''); ^{13}C -NMR (100 MHz, CD_3OD): 95.3 (C-1), 141.7 (C-3), 104.0 (C-4), 39.0 (C-5), 79.5 (C-6), 62.5 (C-7), 66.2 (C-8), 43.5 (C-9), 61.4 (C-10), 99.4 (C-1'), 74.2 (C-2'), 87.1 (C-3'), 70.1 (C-4'), 77.7 (C-5')^a, 62.7 (C-6')^b, 105.1 (C-1''), 75.5 (C-2''), 78.0 (C-3'')^a, 71.5 (C-4''), 78.1 (C-5'')^a, 62.6 (C-6'')^b. *Asystasia intrusa* (Acanthaceae).⁵⁸⁾

85. 6-O-cis-p-Coumaroylcatalpol



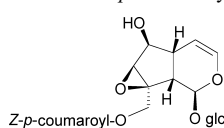
$C_{24}H_{28}O_{12}$; 508.1580; isolated as hexaacetate; amorphous powder; $[\alpha]_D^{26} -75.3^\circ$ ($c=0.09$, MeOH); UV (MeOH): 283 (4.04); 1H -NMR (270 MHz, $CDCl_3$): 4.81 (d, 9.6, H-1), 6.30 (dd, 6.0, 1.7, H-3), 4.87 (m, H-4), 2.51 (m, H-5), 3.70 (brs, H-7), 2.63 (dd, 9.6, 7.7, H-9), 3.96 (d, 12.7, H-10), 4.82 (d, 12.7, H-10), 5.00 (m, H-1', 2'), 5.22 (t, 9.5, H-3'), 5.13 (t, 9.5, H-4'), 3.68 (m, H-5'), 4.19 (dd, 12.3, 4.3, H-6'), 4.30 (dd, 12.3, 2.7, H-6'), 7.67 (d, 8.8, H-2''), 7.09 (d, 8.8, H-3''), 7.00 (d, 12.9, H-7''), 6.01 (d, 12.9, H-8''), 2.02×2, 2.04×2, 2.12, 2.31 (s, 6×Ac); ^{13}C -NMR (67.8 MHz, $CDCl_3$): 96.6 (C-1), 141.0 (C-3), 108.5 (C-4), 34.7 (C-5), 77.6 (C-6), 58.6 (C-7), 62.6 (C-8), 41.4 (C-9), 61.2 (C-10), 102.4 (C-1'), 70.6 (C-2'), 72.3 (C-3'), 68.2 (C-4'), 72.6 (C-5'), 61.2 (C-6'), 132.2 (C-1''), 141.0 (C-2''), 6''), 121.3 (C-3''), 5''), 151.3 (C-4''), 143.9 (C-7''), 118.8 (C-8''), 165.9 (C-9''), 20.6×2, 20.7×2, 21.2×2, 169.1, 169.2, 169.3, 170.3, 170.5, 170.7 (6×Ac). *Catalpa fructus* (Bignoniaceae).⁵⁹⁾

86. Scorodioside (6-O-(3'-O-Acetyl-2'-O-trans-cinnamoyl)-α-L-rhamnopyranosyl catalpol)

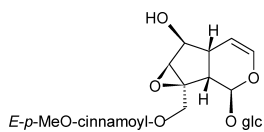


$C_{32}H_{40}O_{16}$; 680.2316; amorphous powder, UV (MeOH): 205 (4.02), 218 sh (4.17), 282 (4.46); 1H -NMR (400 MHz, CD_3OD): 5.08 (d, 9.6, H-1), 6.38 (dd, 6.0, 1.7, H-3), 5.09 (dd, 6.0, 4.7, H-4), 2.47 (m, H-5), 4.05 (dd, 8.5, 0.9, H-6), 3.65 (brs, H-7), 2.57 (dd, 9.6, 7.7, H-9), 3.80 (d, 13.2, H-10), 4.14 (d, 13.2, H-10), 4.76 (d, 7.9, H-1'), 3.24—3.39 (m, H-2', 3', 4', 5'), 3.61 (dd, 12.0, 5.6, H-6'), 3.90 (dd, 12.0, 1.9, H-6'), 5.05 (d, 1.6, H-1''), 5.36 (dd, 3.4, 1.6, H-2''), 5.14 (dd, 9.9, 3.4, H-3''), 3.61 (dt, 9.9, 9.6, H-4''), 1.33 (d, 6.2, H₃-6''), 7.62 (m, H-2'''), 7.41 (m, H-3'''), 4'''), 5'''), 7.73 (d, 16.0, H-7'''), 6.59 (d, 16.0, H-8'''), 2.01 (s, AcO-3''); ^{13}C -NMR (100 MHz, CD_3OD): 95.2 (C-1), 142.4 (C-3), 103.4 (C-4), 37.2 (C-5), 84.4 (C-6), 59.4 (C-7), 66.6 (C-8), 43.3 (C-9), 61.5 (C-10), 99.7 (C-1'), 74.8 (C-2'), 77.7 (C-3'), 71.8 (C-4'), 78.6 (C-5'), 63.0 (C-6'), 97.8 (C-1''), 71.5 (C-2'')^a, 73.2 (C-3''), 71.5 (C-4''), 70.3 (C-5''), 18.0 (C-6''), 135.6 (C-1'''), 130.1 (C-2'''), 129.4 (C-3'''), 131.8 (C-4'''), 147.3 (C-7'''), 118.2 (C-8'''), 167.5 (C-9'''), 20.9, 172.3 (Ac). *Scrophularia scorodonia* (Scrophulariaceae).⁶⁰⁾

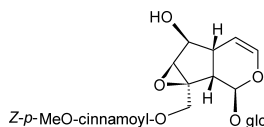
87. 10-O-cis-p-Coumaroylcatalpol



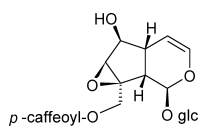
$C_{24}H_{30}O_{12}$; 510.1737; amorphous powder; $[\alpha]_D^{24} -70.6^\circ$ ($c=1.76$, MeOH); UV (MeOH): 210 (3.96), 225 sh (3.88), 300 sh (4.01), 307 (4.11); IR (KBr): 3325, 2875, 1695, 1600, 1510, 1165, 1070, 1010, 920, 840; 1H -NMR (400 MHz, CD_3OD): 5.04 (d, 10.0, H-1), 6.35 (dd, 6.0, 2.0, H-3), 5.06 (dd, 6.0, 5.0, H-4), 2.27 (ddt, 8.0, 5.0, 2.0, H-5), 3.92 (dd, 8.0, 1.0, H-6), 3.42 (d, 1.0, H-7), 2.57 (dd, 10.0, 8.0, H-9), 4.25 and 4.93 (each d, 13.0, H₂-10), 4.75 (d, 8.0, H-1'), 3.22 (dd, 9.0, 8.0, H-2'), 3.66 (dd, 12.0, 6.0, H-6'), 3.92 (dd, 12.0, 2.0, H-6'), 7.64 (d, 9.0, H-2''), 6''), 6.77 (d, 9.0, H-3''), 5''), 6.88 (d, 13.0, H-7''), 5.80 (d, 13.0, H-8''); ^{13}C -NMR (100 MHz, CD_3OD): 95.7 (C-1), 141.8 (C-3), 103.7 (C-4), 39.0 (C-5), 79.5 (C-6), 62.8 (C-7), 63.5 (C-8), 43.7 (C-9), 63.1 (C-10), 100.3 (C-1'), 74.9 (C-2'), 78.6 (C-3'), 71.6 (C-4'), 77.9 (C-5'), 63.1 (C-6'), 127.6 (C-1''), 133.8 (C-2''), 6''), 116.0 (C-3''), 5''), 160.1 (C-4''), 145.6 (C-7''), 116.3 (C-8''), 168.0 (C-9''). *Premna subscandens* (Verbenaceae).⁶¹⁾

88. 10-*O-trans-p*-Methoxycinnamoylcatalpol

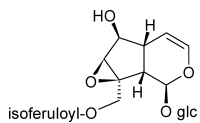
$C_{25}H_{30}O_{12}$: 522.1737; amorphous powder; $[\alpha]_D^{24} -62.2^\circ$ ($c=1.38$, MeOH); UV (MeOH): 209 (4.01), 226 (4.04), 299 sh (4.22), 305 (4.25); IR (KBr): 3350, 2900, 1685, 1630, 1600, 1570, 1510, 1420, 1250, 1170, 1075, 1015, 925, 830; 1H -NMR (400 MHz, CD_3OD): 5.07 (d, 10.0, H-1), 6.36 (dd, 6.0, 2.0, H-3), 5.08 (dd, 6.0, 5.0, H-4) 2.30 (ddt, 8.0, 5.0, 2.0, H-5), 3.96, (dd, 8.0, 1.0, H-6), 3.50 (d, 1.0, H-7), 2.67 (dd, 10.0, 8.0, H-9), 4.28 and 4.99 (each d, 13.0, H_2 -10), 4.75 (d, 8.0, H-1'), 3.20 (dd, 9.0, 8.0, H-2'), 3.37 (t, 9.0, H-3'), 3.68 (dd, 12.0, 6.0, H-6'), 3.92 (dd, 12.0, 2.0, H-6''), 7.56 (d, 9.0, H-2'', 6''), 6.95 (d, 9.0, H-3'', 5''), 7.66 (d, 16.0, H-7''), 6.40 (d, 16.0, H-8''), 3.82 (s, MeO-4''); ^{13}C -NMR (100 MHz, CD_3OD): 95.6 (C-1), 141.8 (C-3), 103.7 (C-4), 39.0 (C-5), 79.5 (C-6), 62.8 (C-7), 63.6 (C-8), 43.6 (C-9), 63.0 (C-10), 100.3 (C-1'), 74.8 (C-2'), 78.4 (C-3'), 71.4 (C-4'), 77.8 (C-5'), 63.0 (C-6'), 128.3 (C-1''), 131.1 (C-2'', 6''), 115.4 (C-3'', 5''), 163.2 (C-4''), 146.6 (C-7''), 115.9 (C-8''), 168.9 (C-9''), 55.9 (MeO-4''). *Premna subscandens* (Verbenaceae).⁶¹

89. 10-*O-cis-p*-Methoxycinnamoylcatalpol

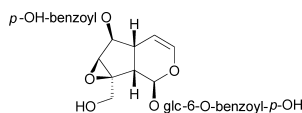
$C_{25}H_{30}O_{12}$: 522.1737; amorphous powder; $[\alpha]_D^{24} -76.1^\circ$ ($c=1.38$, MeOH); UV (MeOH): 209 (4.06), 223 sh (3.97), 300 sh (4.10), 307 (4.13); IR (KBr): 3350, 2890, 1700, 1600, 1510, 1255, 1170, 1075—1015, 920, 840; 1H -NMR (400 MHz, CD_3OD): 5.04 (d, 10.0, H-1), 6.35 (dd, 6.0, 2.0, H-3), 5.05 (dd, 6.0, 5.0, H-4), 2.26 (ddt, 8.0, 5.0, 2.0, H-5), 3.92 (dd, 8.0, 1.0, H-6), 3.42 (d, 1.0, H-7), 2.56 (dd, 10.0, 8.0, H-9), 4.21 and 4.96 (each d, 13.0, H_2 -10), 4.75 (d, 8.0, H-1'), 3.22 (dd, 9.0, 8.0, H-2'), 3.66 (dd, 12.0, 6.0, H-6'), 3.92 (dd, 12.0, 2.0, H-6''), 7.69 (d, 9.0, H-2'', 6''), 6.92 (d, 9.0, H-3'', 5''), 6.93 (d, 13.0, H-7''), 5.86 (d, 13.0, H-8''), 3.81 (s, MeO-4''); ^{13}C -NMR (100 MHz, CD_3OD): 95.7 (C-1), 141.8 (C-3), 103.7 (C-4), 39.0 (C-5), 79.5 (C-6), 62.8 (C-7), 63.5 (C-8), 43.6 (C-9), 63.1 (C-10), 100.3 (C-1'), 74.9 (C-2'), 78.5 (C-3'), 71.5 (C-4'), 77.9 (C-5'), 63.1 (C-6'), 128.7 (C-1''), 133.4 (C-2'', 6''), 114.6 (C-3'', 5''), 162.1 (C-4''), 145.0 (C-7''), 117.3 (C-8''), 167.9 (C-9''), 55.8 (MeO-4''). *Premna subscandens* (Verbenaceae).⁶¹

90. 10-*O-trans-p*-Caffeoylcatalpol

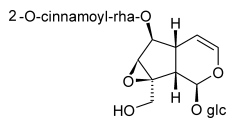
$C_{24}H_{28}O_{13}$: 524.1529; amorphous powder; $[\alpha]_D^{26} -52.0^\circ$ ($c=1.96$, MeOH); UV (MeOH): 217 (4.03), 244 (3.89), 308 (4.03), 331 (4.13); IR (KBr): 3350, 1680, 1600, 1510, 1440, 1270, 1160, 1070—1010; 1H -NMR (400 MHz, CD_3OD): 5.06 (d, 10.0, H-1), 6.35 (dd, 6.0, 2.0, H-3), 5.07 (dd, 6.0, 5.0, H-4) 2.30 (ddt, 8.0, 5.0, 2.0, H-5), 3.95 (br d, 8.0, H-6), 3.48 (br s, H-7), 2.65 (dd, 10.0, 8.0, H-9), 4.27 and 4.97 (each d, 13.0, H_2 -10), 4.75 (d, 8.0, H-1'), 3.19 (dd, 9.0, 8.0, H-2'), 3.37 (t, 9.0, H-3'), 3.67 (dd, 12.0, 6.0, H-6'), 3.94 (dd, 12.0, 2.0, H-6''), 7.06 (d, 2.0, H-2''), 6.78 (d, 8.0, H-5''), 6.96 (dd, 8.0, 2.0, H-6''), 7.57 (d, 16.0, H-7''), 6.29 (d, 16.0, H-8''); ^{13}C -NMR (100 MHz, CD_3OD): 95.7 (C-1), 141.8 (C-3), 103.8 (C-4), 39.1 (C-5), 79.5 (C-6), 62.8 (C-7), 63.7 (C-8), 43.7 (C-9), 64.2 (C-10), 100.4 (C-1'), 74.8 (C-2'), 78.5 (C-3'), 71.5 (C-4'), 77.9 (C-5'), 63.0 (C-6'), 127.8 (C-1''), 114.9 (C-2''), 149.6 (C-3''), 146.8 (C-4''), 116.5 (C-5''), 123.1 (C-6''), 147.4 (C-7''), 115.3 (C-8''), 169.1 (C-9''). *Premna subscandens* (Verbenaceae).⁶¹

91. 10-*O-trans*-Isoferuloylcatalpol

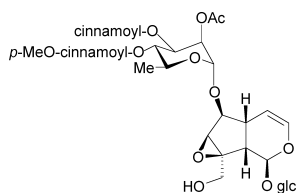
$C_{25}H_{30}O_{13}$: 538.1686; amorphous powder; $[\alpha]_D^{24} -61.2^\circ$ ($c=1.19$, MeOH); UV (MeOH): 216 (4.13), 243 (4.01), 297 (4.12), 324 (4.18); IR (KBr): 3350, 2875, 1685, 1600, 1505, 1440, 1265, 1160, 1125, 1070—1010, 920, 805; 1H -NMR (400 MHz, CD_3OD): 5.06 (d, 10.0, H-1), 6.35 (dd, 6.0, 2.0, H-3), 5.07 (dd, 6.0, 5.0, H-4) 2.30 (ddt, 8.0, 5.0, 2.0, H-5), 3.95 (dd, 8.0, 1.0, H-6), 3.48 (d, 1.0, H-7), 2.65 (dd, 10.0, 8.0, H-9), 4.27 and 4.98 (each d, 13.0, H_2 -10), 4.74 (d, 8.0, H-1'), 3.19 (dd, 9.0, 8.0, H-2'), 3.66 (dd, 12.0, 6.0, H-6'), 3.89 (dd, 12.0, 2.0, H-6''), 7.09 (d, 2.0, H-2''), 6.94 (d, 8.0, H-5''), 7.06 (dd, 8.0, 2.0, H-6''), 7.59 (d, 16.0, H-7''), 6.34 (d, 16.0, H-8''), 3.88 (s, MeO-4''); ^{13}C -NMR (100 MHz, CD_3OD): 95.7 (C-1), 141.8 (C-3), 103.8 (C-4), 39.1 (C-5), 79.5 (C-6), 62.8 (C-7), 63.6 (C-8), 43.7 (C-9), 64.3 (C-10), 100.4 (C-1'), 74.8 (C-2'), 78.5 (C-3'), 71.5 (C-4'), 77.9 (C-5'), 63.0 (C-6'), 128.9 (C-1''), 112.5 (C-2''), 151.6 (C-3''), 148.0 (C-4''), 114.9 (C-5''), 122.9 (C-6''), 146.9 (C-7''), 115.9 (C-8''), 168.9 (C-9''), 56.4 (MeO). *Premna subscandens* (Verbenaceae).⁶¹

92. 6'-*O-p*-Hydroxybenzoylcatalposide

$C_{29}H_{30}O_{14}$: 602.1635; amorphous powder; $[\alpha]_D^{25} -123.5^\circ$ ($c=0.2$, MeOH); UV (MeOH): 202 (4.43), 257 (4.40); 1H -NMR (400 MHz, CD_3OD): 4.85 (m, H-1), 6.31 (dd, 5.8, 1.7, H-3), 4.95 (m, H-4), 2.62 (m, H-5), 4.84 (m, H-6), 3.62 (d, 1.2, H-7), 2.64 (m, H-9), 3.59 and 4.17 (each d, 13.2, H_2 -10), 4.81 (d, 7.8, H-1'), 3.30 (m, H-2'), 3.44 (m, H-3', 4'), 3.60 (m, H-5'), 4.53 (dd, 11.7, 6.1, H-6'), 4.64 (dd, 11.7, 2.4, H-6''), 7.92 (d, 9.0, H-2'', 6''), 6.84 (d, 9.0, H-3'', 5''), 7.91 (d, 8.8, H-2''', 6'''), 6.84 (d, 8.8, H-3''', 5'''); ^{13}C -NMR (100 MHz, CD_3OD): 95.3 (C-1), 142.3 (C-3), 103.2 (C-4), 36.9 (C-5), 81.7 (C-6), 60.2 (C-7), 66.8 (C-8), 43.1 (C-9), 61.7 (C-10), 99.9 (C-1'), 74.9 (C-2'), 77.6 (C-3'), 71.9 (C-4'), 76.1 (C-5'), 64.2 (C-6'), 121.9 (C-1''), 132.9 (C-2'', 6''), 116.3 (C-3'', 5''), 163.9 (C-4''), 168.1 (C-7''), 122.9 (C-1'''), 133.1 (C-2'''), 116.4 (C-3'''), 163.7 (C-4'''), 167.8 (C-7'''). *Catalpa ovata* (Bignoniaceae).⁶²

93. Verbaspinoside (6-*O*-[(2''-*O-trans*-Cinnamoyl)- α -L-rhamnopyranosyl]catalpol)

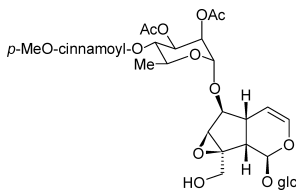
$C_{30}H_{38}O_{15}$: 638.2210; white amorphous powder; $[\alpha]_D^{20} -110.9^\circ$ ($c=0.72$, MeOH); UV (MeOH): 216 (4.10), 222 (4.05), 280 (4.16); 1H -NMR (400 MHz, CD_3OD): 5.09 (d, 9.9, H-1), 6.38 (dd, 6.0, 1.7, H-3), 5.08 (dd, 6.0, 4.6, H-4), 2.44 (m, H-5), 4.04 (d, 8.3, H-6), 3.66 (s, H-7), 2.58 (dd, 9.9, 7.9, H-9), 4.16 and 3.81 (each d, 13.3, H_2 -10), 4.78 (d, 7.9, H-1'), 3.27 (dd, 9.1, 7.9, H-2'), 3.41 (t, 9.1, H-3'), 3.25 (t, 9.1, H-4'), 3.32 (overlapped with solvent signal, H-5'), 3.62 (dd, 12.0, 6.0, H-6'), 3.89 (dd, 12.0, 2.0, H-6'), 5.05 (d, 1.7, H-1''), 5.18 (dd, 3.3, 1.7, H-2''), 3.95 (dd, 9.9, 3.3, H-3''), 3.50 (t, 9.9, H-4''), 3.77 (m, H-5''), 1.32 (d, 6.2, H_3 -6''), 7.61—7.65 (overlapped, H-2''', 6'''), 7.40—7.44 (overlapped, H-3''', 4''', 5'''), 7.75 (d, 16.2, H-7'''), 6.61 (d, 16.2, H-8'''), ^{13}C -NMR (100 MHz, CD_3OD): 95.1 (C-1), 142.3 (C-3), 103.4 (C-4), 37.2 (C-5), 84.3 (C-6), 59.4 (C-7), 66.5 (C-8), 43.2 (C-9), 61.5 (C-10), 99.7 (C-1'), 74.8 (C-2'), 77.6 (C-3'), 71.8 (C-4'), 78.6 (C-5'), 62.9 (C-6'), 97.6 (C-1''), 74.4 (C-2''), 70.4 (C-3''), 74.2 (C-4''), 70.3 (C-5''), 18.0 (C-6''), 135.7 (C-1'''), 129.3 (C-2'''), 6'''), 130.0 (C-3'''), 131.6 (C-4'''), 146.9 (C-7'''), 118.6 (C-8'''), 168.0 (C-9'''). *Verbascum spinosum* (Scrophulariaceae).⁶³

94. Scrophuloside B₄ [6-*O*-[(2''-*O*-Acetyl-3''-*O*-cinnamoyl-4''-*O*-*p*-methoxycinnamoyl)- α -L-rhamnopyranosyl]catalpol]

$C_{42}H_{48}O_{18}$: 840.2840; yellowish powder; $[\alpha]_D^{25} -31.8^\circ$ ($c=0.29$, $CHCl_3$); 1H -NMR (300 MHz, $CDCl_3$ - CD_3OD): 4.92 (d, 9.6, H-1), 6.36 (d, 5.8, H-3), 5.13 (dd, 5.8, 4.7, H-4), 2.55 (m, H-5), 4.02 (dd, 8.7, 2.1, H-6), 3.65 (d, 2.1, H-7), 2.66 (dd, 9.6, 7.8, H-9), 3.98 (dd, 11.0, 2.0, H-10), 4.00 (dd, 11.0, 5.5, H-10), 4.82 (d, 7.8, H-1'), 3.36 (dd, 7.8, 7.2, H-2'), 3.51 (dd, 7.8, 7.2, H-3'), 3.49 (dd, 7.8, 7.2, H-4'), 3.38 (m, H-5'), 3.88 (dd, 11.4, 5.5, H-6'), 3.77 (dd, 11.4, 2.0, H-6''), 5.03 (d, 1.2, H-1''), 5.41 (dd, 3.0, 1.2, H-2''), 5.53 (dd, 9.6, 3.0, H-3''), 5.34 (t, 9.6, H-4'') 4.10 (m, H-5''), 1.28 (d, 6.6, H_3 -6''), 2.20 (s, Ac), 7.47 (dd, 8.5, 2.5, H-2'''), 7.36 (dd, 8.5, 8.5, H-3'''), 7.35 (dd, 8.5, 8.5, H-4'''), 7.49 (dd, 8.5, 2.5, H-6'''), 7.63 (d, 16.0, H-7'''), 6.33 (d, 16.0, H-8'''), 7.46 (d, 9.0, H-2''''), 6.89 (d, 9.0, H-3''''), 7.64 (d, 16.2, H-7''''), 6.25 (d, 16.2, H-8''''), 3.83 (s, MeO-4''''), ^{13}C -NMR (75 MHz, $CDCl_3$ - CD_3OD): 94.6 (C-1), 141.3 (C-3), 102.5 (C-4), 35.9 (C-5), 83.6 (C-6), 58.4 (C-7), 65.0 (C-8), 42.4 (C-9), 60.9 (C-10), 99.0 (C-1'), 73.2 (C-2'), 76.2 (C-3'), 69.6 (C-4'), 76.7 (C-5'), 61.4 (C-6'), 96.6 (C-1''), 70.4 (C-2''), 69.1 (C-3''), 71.7 (C-4''), 67.3 (C-5''), 17.5 (C-6''), 21.0, 170.5 (Ac), 134.1 (C-1'''), 128.9 (C-2'''), 129.0 (C-3'''), 130.6 (C-4'''), 128.9 (C-5'''), 128.3 (C-6'''), 146.2 (C-7''').

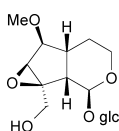
117.0 (C-8^{'''}), 166.1 (C-9^{'''}), 126.8 (C-1^{'''}), 130.2 (C-2^{'''}, 6^{'''}), 114.4 (C-3^{'''}, 5^{'''}), 161.7 (C-4^{'''}), 146.1 (C-7^{'''}), 114.3 (C-8^{'''}), 166.9 (C-9^{'''}), 55.5 (MeO-4^{'''}). *Scrophularia ningpoensis* (Scrophulariaceae).⁶⁴⁾

95. Scrovalentinoside



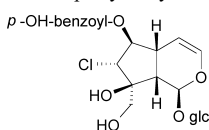
C₃₅H₄₄O₁₈: 752.2527; amorphous powder; [α]_D²⁰ -136.0° (c=0.1, MeOH); UV (MeOH): 203, 228, 313; IR (KBr): 3400, 1715, 1640; ¹H-NMR (400 MHz, CD₃OD-C₆D₆, 9:1): 5.14 (d, 9.6, H-1), 6.33 (dd, 6.0, 1.7, H-3), 5.07 (dd, 6.0, 4.6, H-4), 2.55 (dddd, 8.1, 7.3, 4.6, 1.7, H-5), 4.03 (dd, 8.1, 0.8, H-6), 3.61 (s, H-7), 2.68 (dd, 9.6, 7.3, H-9), 4.24 and 3.90 (each d, 13.2, H₂-10), 4.89 (d, 7.9, H-1'), 3.43 (m, H-2', 4'), 3.55 (t, 8.7, H-3'), 3.40 (m, H-5'), 3.75 (dd, 12.9, 1.7, H-6'), 3.99 (dd, 12.9, 5.8, H-6''), 5.10 (d, 1.7, H-1''), 5.45 (dd, 3.4, 1.7, H-2''), 5.57 (dd, 10.1, 3.4, H-3''), 5.38 (t, 10.1, H-4''), 4.17 (dq, 10.1, 6.3, H-5''), 1.27 (d, 6.3, H₃-6''), 7.40 (d, 8.8, H-2'''), 6.84 (d, 8.8, H-3'''), 7.75 (d, 16.0, H-7'''), 6.36 (d, 16.0, H-8'''), 1.84, 2.02 (each s, 2×Ac); ¹³C-NMR (100 MHz, CD₃OD-C₆D₆, 9:1): 95.2 (C-1), 142.4 (C-3), 103.2 (C-4), 37.1 (C-5), 85.1 (C-6), 59.5 (C-7), 66.5 (C-8), 43.3 (C-9), 61.6 (C-10), 99.8 (C-1'), 74.8 (C-2'), 77.7 (C-3'), 71.7 (C-4'), 78.5 (C-5'), 62.9 (C-6'), 97.8 (C-1''), 71.4 (C-2''), 70.6 (C-3''), 72.1 (C-4''), 68.4 (C-5''), 18.0 (C-6''), 127.9 (C-1'''), 131.2 (C-2'''), 115.5 (C-3'''), 163.3 (C-4'''), 147.4 (C-7'''), 115.1 (C-8'''), 167.9 (C-9'''), 55.8 (OMe), 20.8×2, 171.6×2 (2×Ac). *Scrophularia auriculata* ssp. *pseudoauriculata* (Scrophulariaceae),⁶⁵⁾ *S. nodosa*.⁶⁶⁾

96. 3,4-Dihydro-6-O-methylcatalpol



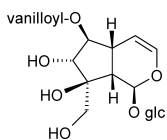
C₁₆H₂₆O₁₀: 378.1526; amorphous powder; [α]_D²² -77° (c=0.3, MeOH); UV (MeOH): 206; IR (film): 3374, 2925, 1598, 1374, 1077, 1036; ¹H-NMR (600 MHz, CD₃OD): 4.77 (d, 9.2, H-1), 3.53 (ddd, 15.0, 12.8, 2.5, H-3), 3.89 (overlapped, H-3), 1.56 (br d, 14.3, H-4), 1.77 (m, H-4), 2.10 (q, 7.7, H-5), 3.86 (overlapped, H-6), 3.68 (s, H-7), 2.26 (dd, 9.2, 7.7, H-9), 4.05 and 3.79 (each d, 13.1, H₂-10), 4.69 (d, 7.9, H-1'), 3.22 (overlapped, H-2'), 3.37 (overlapped, H-3'), 3.26 (overlapped, H-4'), 3.27 (overlapped, H-5'), 3.63 (dd, 11.7, 6.2, H-6'), 3.90 (dd, 11.7, 1.8, H-6''), 3.49 (s, MeO-6); ¹³C-NMR (150 MHz, CD₃OD): 97.8 (C-1), 63.0 (C-3), 24.2 (C-4), 36.6 (C-5), 82.6 (C-6), 58.3 (C-7), 66.3 (C-8), 43.2 (C-9), 61.2 (C-10), 99.4 (C-1'), 74.9 (C-2'), 77.9 (C-3'), 71.8 (C-4'), 78.6 (C-5'), 63.0 (C-6'), 57.9 (MeO). *Scrophularia lepidota* (Scrophulariaceae).⁴⁴⁾

97. 6-O-p-Hydroxybenzoylscastiasoside



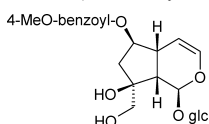
C₂₂H₂₂ClO₁₂: 518.1191; amorphous powder; [α]_D²⁶ -71.4° (c=0.7, MeOH); UV (MeOH): 206 (4.31), 230 (4.12), 256 (4.20); ¹H-NMR (270 MHz, CD₃OD): 5.70 (d, 3.8, H-1), 6.30 (dd, 6.2, 2.0, H-3), 5.26 (dd, 6.2, 3.3, H-4), 2.89 (m, H-5), 5.08 (dd, 7.5, 5.1, H-6), 4.37 (d, 7.5, H-7), 2.64 (dd, 10.5, 3.8, H-9), 2.83 (d, 11.9, H_α-10), 4.01 (d, 11.9, H_β-10), 4.66 (d, 7.9, H-1'), 3.18 (dd, 8.7, 7.9, H-2'), 3.33 (m, H-3', 4', 5'), 3.67 (dd, 11.7, 5.3, H-6') 3.89 (m, H-6''), 7.91 (d, 8.9, H-2''), 6.84 (d, 8.9, H-3'', 5''), ¹³C-NMR (67.8 MHz, CD₃OD): 92.9 (C-1), 141.1 (C-3), 105.7 (C-4), 37.2 (C-5), 85.1 (C-6), 69.7 (C-7), 80.9 (C-8), 49.3 (C-9), 63.7 (C-10), 99.6 (C-1'), 74.8 (C-2'), 78.2 (C-3'), 71.7 (C-4'), 80.0 (C-5'), 62.9 (C-6'), 121.8 (C-1''), 133.1 (C-2'', 6''), 116.3 (C-3'', 5''), 163.9 (C-4''), 167.6 (C-7''). *Catalpa fructus* (Bignoniaceae).⁵⁹⁾

98. Urphoside A



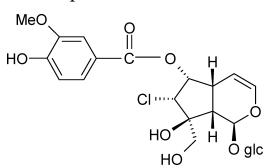
C₂₃H₃₀O₁₄: 530.1635; amorphous powder; [α]_D²³ -22.0° (c=0.15, MeOH); UV (MeOH): 210 (2.30), 299 (2.50), 331 sh (2.30); ¹H-NMR (500 MHz, CD₃OD): 5.55 (d, 4.3, H-1), 6.27 (dd, 6.3, 2.1, H-3), 5.27 (dd, 6.3, 3.5, H-4), 2.81 (dddd, 10.1, 4.9, 3.5, 2.1, H-5), 4.85 (dd, 5.8, 4.9, H-6), 4.20 (d, 5.8, H-7), 2.52 (dd, 10.1, 4.3, H-9), 4.04 (d, 11.9, H-10), 4.85 (d, 11.9, H-10), 4.66 (d, 7.9, H-1'), 3.19 (t, 7.9, H-2'), 3.36 (t, 8.9, H-3'), 3.28 (m, H-4', 5'), 3.66 (dd, 12.0, 5.2, H-6'), 3.87 (dd, 12.0, 2.4, H-6''), 7.58 (d, 1.8, H-2''), 6.85 (d, 8.2, H-5''), 7.60 (dd, 8.2, 1.8, H-6''), 3.90 (s, MeO-3''); ¹³C-NMR (125 MHz, CD₃OD): 93.1 (C-1), 140.9 (C-3), 106.0 (C-4), 36.8 (C-5), 86.2 (C-6), 84.4 (C-7), 80.8 (C-8), 48.5 (C-9), 64.4 (C-10), 99.6 (C-1'), 74.8 (C-2'), 78.0 (C-3'), 71.7 (C-4'), 78.2 (C-5'), 62.9 (C-6'), 122.5 (C-1''), 113.8 (C-2''), 148.8 (C-3''), 153.1 (C-4''), 116.0 (C-5''), 125.3 (C-6''), 168.1 (C-7''), 56.5 (MeO-3'). *Veronica hederifolia* (Scrophulariaceae).⁶⁷⁾

99. 6-O-(4-Methoxybenzoyl)-5,7-bisdeoxycynanchoside



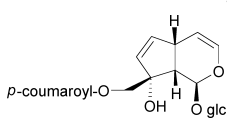
C₂₃H₃₀O₁₂: 498.1737; amorphous powder; [α]_D²³ -99.0° (c=0.41, MeOH); UV (MeOH): 201 (4.33), 256 (4.18); ¹H-NMR (CD₃OD): 5.57 (d, 2.0, H-1), 6.28 (dd, 6.0, 2.0, H-3), 5.00 (dd, 6.0, 3.0, H-4), 3.09 (m, H-5), 5.08 (m, H-6), 1.94 (dd, 15.0, 2.5, H-7), 2.40 (dd, 15.0, 6.5, H-7), 2.65 (dd, 8.5, 4.5, H-9), 4.68 (d, 8.0, H-1'), 3.20 (t, 8.0, H-2'), 3.37 (t, 8.0, H-3'), 3.27 (t, 8.0, H-4'), 3.31 (overlapping, H-5'), 3.66 (dd, 12.0, 6.0, H-6'), 3.89 (dd, 12.0, 2.0, H-6''), 8.01 (d, 9.0, H-2''), 6.98 (d, 9.0, H-3'', 5''), 3.86 (s, MeO-4''); ¹³C-NMR (CD₃OD): 93.4 (C-1), 141.7 (C-3), 104.3 (C-4), 40.8 (C-5), 80.8 (C-6), 42.8 (C-7), 82.5 (C-8), 51.6 (C-9), 68.0 (C-10), 99.6 (C-1'), 74.8 (C-2'), 78.3 (C-3''), 71.7 (C-4''), 78.0 (C-5''), 62.7 (C-6'), 123.9 (C-1''), 132.7 (C-2''), 114.8 (C-3''), 165.2 (C-4''), 167.8 (C-7''), 56.0 (MeO-4''). *Tabebuia impetiginosa* (Bignoniaceae).⁶⁸⁾

100. Urphoside B



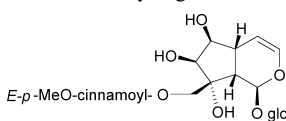
C₂₃H₂₉O₁₃Cl: 548.1296; amorphous powder; [α]_D²³ -122° (c=0.05, MeOH); UV: 210, 299, 331 sh; ¹H-NMR (500 MHz, CD₃OD): 5.70 (d, 3.7, H-1), 6.31 (dd, 6.3, 2.1, H-3), 5.26 (dd, 6.3, 3.5, H-4), 2.90 (m, H-5), 5.10 (dd, 12.2, 7.3, H-6), 4.20 (d, 7.3, H-7), 2.63 (dd, 10.5, 3.7, H-9), 4.10, 4.83 (each d, H₂-10), 4.66 (d, 7.9, H-1'), 3.20 (t, 9.1, H-2'), 3.36 (t, 9.3, H-3'), 3.28 (overlapped, H-4', 5'), 3.67 (dd, 12.0, 6.0, H-6'), 3.83 (dd, 12.0, 2.1, H-6''), 7.57 (d, 1.8, H-2''), 6.89 (d, 8.5, H-5''), 7.60 (dd, 8.5, 1.8, H-6''), 3.91 (s, MeO-3''); ¹³C-NMR (125 MHz, CD₃OD): 92.9 (C-1), 141.3 (C-3), 105.7 (C-4), 36.8 (C-5), 85.3 (C-6), 69.7 (C-7), 81.0 (C-8), 48.5 (C-9), 63.6 (C-10), 99.6 (C-1'), 74.8 (C-2'), 78.0 (C-3'), 71.7 (C-4'), 78.2 (C-5'), 62.9 (C-6'), 122.7 (C-1''), 113.7 (C-2''), 148.8 (C-3''), 153.3 (C-4''), 116.1 (C-5''), 125.4 (C-6''), 167.6 (C-7''), 56.5 (OMe). *Veronica pectinata* var. *glandulosa* (Scrophulariaceae).⁶⁹⁾

101. 10-O-trans-Coumaroyleranthemoside

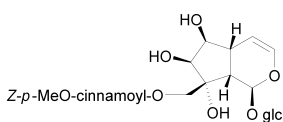


C₂₄H₂₈O₁₁: 492.1631; amorphous powder; [α]_D²⁷ -33.3° (c=1.35, MeOH); ¹H-NMR (400 MHz, CD₃OD): 5.37 (d, 3.4, H-1), 6.11 (dd, 6.2, 2.0, H-3), 4.90 (dd, 6.2, 3.4, H-4), 3.25 (m, H-5), 5.89 (dd, 5.6, 2.4, H-6), 5.56 (dd, 5.6, 1.9, H-7), 2.52 (dd, 8.3, 3.4, H-9), 4.09 (d, 11.2, H-10), 4.20 (d, 11.2, H-10), 4.61 (d, 7.8, H-1'), 3.17 (dd, 8.8, 7.8, H-2'), 3.30 (dd, 8.8, 8.5, H-3'), 3.23 (dd, 8.5, 8.1, H-4'), 3.24 (m, H-5'), 3.56 (dd, 12.0, 5.1, H-6'), 3.74 (dd, 12.0, 2.0, H-6''), 7.37 (d, 8.8, H-2''), 6.72 (d, 8.8, H-3'', 5''), 7.54 (d, 15.9, H-7''), 6.25 (d, 15.9, H-8''); ¹³C-NMR (100 MHz, CD₃OD): 94.4 (C-1), 139.9 (C-3), 105.9 (C-4), 40.0 (C-5), 138.2 (C-6), 132.4 (C-7), 85.0 (C-8), 46.9 (C-9), 70.1 (C-10), 93.7 (C-1'), 74.7 (C-2'), 77.9 (C-3'), 71.4 (C-4'), 78.2 (C-5'), 62.5 (C-6'), 127.1 (C-1''), 131.3 (C-2''), 116.8 (C-3''), 161.3 (C-4''), 147.0 (C-7''), 114.9 (C-8''), 169.1 (C-9''). *Barleria strigosa* (Acanthaceae).⁷⁰⁾

102. 4''-Methoxy-E-globularinin

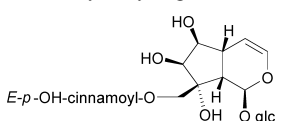


C₂₅H₃₂O₁₃: 540.1842; amorphous powder; [α]_D²⁴ -74.8° (c=1.04, MeOH); UV (MeOH): 217 (3.97), 226 (4.01), 302 sh (4.24), 308 (4.27); IR (KBr): 3325, 1680, 1625, 1600, 1505, 1420, 1250, 1170, 1070, 1015, 830; ¹H-NMR (400 MHz, CD₃OD): 5.29 (d, 6.0, H-1), 6.32 (dd, 6.0, 2.0, H-3), 5.12 (dd, 6.0, 3.0, H-4), 2.70 (br tdd, 11.0, 8.0, 3.0, H-5), 3.95 (dd, 8.0, 4.0, H-6), 3.87 (d, 4.0, H-7), 2.39 (dd, 11.0, 6.0, H-9), 4.34 and 4.53 (each d, 11.0, H₂-10), 4.72 (d, 8.0, H-1'), 3.30 (dd, 9.0, 8.0, H-2'), 3.66 (dd, 12.0, 5.0, H-6'), 3.82 (dd, 12.0, 2.0, H-6''), 7.57 (d, 9.0, H-2''), 6.96 (d, 9.0, H-3'', 5''), 7.71 (d, 16.0, H-7''), 6.45 (d, 16.0, H-8''), 3.83 (s, MeO-4''); ¹³C-NMR (100 MHz, CD₃OD):

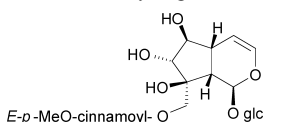
103. 4''-Methoxy-Z-globularinin

96.4 (C-1), 141.7 (C-3), 106.6 (C-4), 39.1 (C-5), 78.9 (C-6), 79.0 (C-7), 81.6 (C-8), 45.0 (C-9), 69.2 (C-10), 101.0 (C-1'), 74.9 (C-2'), 78.3 (C-3'), 71.2 (C-4'), 77.9 (C-5'), 62.5 (C-6'), 128.4 (C-1''), 131.1 (C-2'', 6''), 115.5 (C-3'', 5''), 163.2 (C-4''), 146.5 (C-7''), 116.2 (C-8''), 169.6 (C-9''), 55.9 (MeO-4''). *Premna subscandens* (Verbenaceae).⁷¹⁾

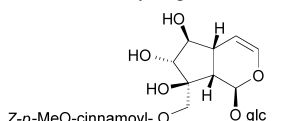
$C_{25}H_{32}O_{13}$; 540.1842; amorphous powder; $[\alpha]_D^{24} -51.5^\circ$ ($c=0.45$, MeOH); UV (MeOH): 223 (3.95), 301 sh (4.14), 308 (4.16); 1H -NMR (400 MHz, CD_3OD): 5.28 (d, 6.0, H-1), 6.31 (dd, 6.0, 2.0, H-3), 5.10 (dd, 6.0, 3.0, H-4), 2.67 (br tdd, 11.0, 8.0, 3.0, H-5), 3.94 (dd, 8.0, 4.0, H-6), 3.83 (d, 4.0, H-7), 2.38 (dd, 11.0, 6.0, H-9), 4.30 and 4.44 (each d, 11.0, H_2 -10), 4.70 (d, 8.0, H-1'), 3.27 (dd, 9.0, 8.0, H-2'), 3.66 (dd, 12.0, 5.0, H-6'), 3.83 (dd, 12.0, 2.0, H-6'), 7.75 (d, 9.0, H-2'', 6''), 6.90 (d, 9.0, H-3'', 5''), 6.92 (d, 13.0, H-7''), 5.94 (d, 13.0, H-8''), 3.82 (s, MeO-4''); ^{13}C -NMR (100 MHz, CD_3OD): 96.4 (C-1), 141.7 (C-3), 106.5 (C-4), 39.0 (C-5), 79.0 (C-6), 79.2 (C-7), 81.4 (C-8), 45.2 (C-9), 69.2 (C-10), 100.8 (C-1'), 74.8 (C-2'), 78.3 (C-3'), 71.4 (C-4'), 78.0 (C-5'), 62.6 (C-6'), 128.8 (C-1''), 133.6 (C-2'', 6''), 114.5 (C-3'', 5''), 162.2 (C-4''), 144.9 (C-7''), 117.7 (C-8''), 168.5 (C-9''), 55.8 (MeO-4''). *Premna subscandens* (Verbenaceae).⁷¹⁾

104. 4''-Hydroxy-E-globularinin

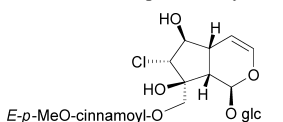
$C_{24}H_{30}O_{13}$; 526.1686; amorphous powder; $[\alpha]_D^{25} -76.2^\circ$ ($c=0.81$, MeOH); UV (MeOH): 211 (4.00), 228 (3.99), 311 (4.25); 1H -NMR (400 MHz, CD_3OD): 5.29 (d, 6.0, H-1), 6.32 (dd, 6.0, 2.0, H-3), 5.12 (dd, 6.0, 3.0, H-4), 2.69 (tdd, 10.0, 8.0, 3.0, H-5), 3.95 (dd, 8.0, 4.0, H-6), 3.87 (d, 4.0, H-7), 2.39 (dd, 10.0, 6.0, H-9), 4.32 and 4.52 (each d, 12.0, H_2 -10), 4.71 (d, 8.0, H-1'), 3.27 (dd, 9.0, 8.0, H-2'), 3.66 (dd, 12.0, 5.0, H-6'), 3.82 (dd, 12.0, 2.0, H-6'), 7.48 (d, 9.0, H-2'', 6''), 6.81 (d, 9.0, H-3'', 5''), 7.68 (d, 16.0, H-7''), 6.39 (d, 16.0, H-8''); ^{13}C -NMR (100 MHz, CD_3OD): 96.4 (C-1), 141.7 (C-3), 106.6 (C-4), 39.1 (C-5), 79.0 (C-6), 79.0 (C-7), 81.7 (C-8), 45.0 (C-9), 69.1 (C-10), 101.1 (C-1'), 74.8 (C-2'), 77.9 (C-3'), 71.2 (C-4'), 78.3 (C-5'), 62.5 (C-6'), 127.2 (C-1''), 131.3 (C-2'', 6''), 116.9 (C-3'', 5''), 161.4 (C-4''), 146.9 (C-7''), 115.2 (C-8''), 169.9 (C-9''). *Premna subscandens* (Verbenaceae).⁷¹⁾

105. 4''-Methoxy-E-globularinin

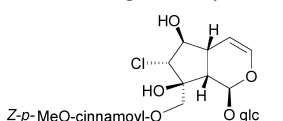
$C_{25}H_{32}O_{13}$; 540.1842; amorphous powder; $[\alpha]_D^{26} -90.4^\circ$ ($c=1.38$, MeOH); UV (MeOH): 209 (4.00), 227 (4.03), 304 (4.26); IR (KBr): 3350, 2900, 1685, 1625, 1600, 1510, 1420, 1250, 1170, 1070—1010, 960, 830; 1H -NMR (400 MHz, CD_3OD): 5.55 (d, 5.0, H-1), 6.23 (dd, 6.0, 2.0, H-3), 5.10 (dd, 6.0, 4.0, H-4), 2.68 (dddd, 10.0, 6.0, 4.0, 2.0, H-5), 3.73 (t, 6.0, H-6), 3.87 (d, 6.0, H-7), 2.50 (dd, 10.0, 5.0, H-9), 4.34 and 4.53 (each d, H_2 -10), 4.68 (d, 8.0, H-1'), 3.21 (dd, 9.0, 8.0, H-2'), 3.67 (dd, 12.0, 6.0, H-6'), 3.84 (dd, 12.0, 2.0, H-6'), 7.56 (d, 9.0, H-2'', 6''), 6.95 (d, 9.0, H-3'', 5''), 7.69 (d, 16.0, H-7''), 6.41 (d, 16.0, H-8''), 3.83 (s, MeO-4''); ^{13}C -NMR (100 MHz, CD_3OD): 93.8 (C-1), 140.8 (C-3), 106.0 (C-4), 38.9 (C-5), 84.3 (C-6), 85.6 (C-7), 80.6 (C-8), 49.4 (C-9), 66.6 (C-10), 100.1 (C-1'), 74.8 (C-2'), 78.1 (C-3'), 71.5 (C-4'), 78.0 (C-5'), 62.9 (C-6'), 128.5 (C-1''), 131.0 (C-2'', 6''), 115.5 (C-3'', 5''), 163.2 (C-4''), 146.2 (C-7''), 116.4 (C-8''), 169.4 (C-9''), 55.9 (MeO-4''). *Premna subscandens* (Verbenaceae).⁷¹⁾

106. 4''-Methoxy-Z-globularinin

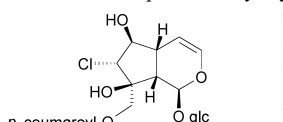
$C_{25}H_{32}O_{13}$; 540.1842; amorphous powder; $[\alpha]_D^{26} -96.0^\circ$ ($c=0.17$, MeOH); UV (MeOH): 206 (4.27), 224 sh (4.11), 306 (4.15); 1H -NMR (400 MHz, CD_3OD): 5.51 (d, 6.0, H-1), 6.22 (dd, 6.0, 2.0, H-3), 5.04 (dd, 6.0, 4.0, H-4), 2.66 (dddd, 10.0, 7.0, 4.0, 2.0, H-5), 3.68 (dd, 7.0, 6.0, H-6), 3.71 (d, 6.0, H-7), 2.46 (dd, 10.0, 6.0, H-9), 4.30 and 4.47 (each d, 12.0, H_2 -10), 4.62 (d, 8.0, H-1'), 3.21 (dd, 9.0, 8.0, H-2'), 3.85 (dd, 12.0, 2.0, H-6'), 7.73 (d, 9.0, H-2'', 6''), 6.89 (d, 9.0, H-3'', 5''), 6.88 (d, 13.0, H-7''), 5.90 (d, 13.0, H-8''), 3.82 (s, MeO-4''); ^{13}C -NMR (100 MHz, CD_3OD): 93.8 (C-1), 140.7 (C-3), 106.1 (C-4), 38.9 (C-5), 84.3 (C-6), 85.8 (C-7), 80.5 (C-8), 49.3 (C-9), 66.6 (C-10), 100.1 (C-1'), 74.9 (C-2'), 78.2 (C-3'), 71.6 (C-4'), 78.0 (C-5'), 62.9 (C-6'), 128.8 (C-1''), 133.5 (C-2'', 6''), 114.5 (C-3'', 5''), 162.1 (C-4''), 144.6 (C-7''), 117.8 (C-8''), 168.2 (C-9''), 55.8 (MeO-4''). *Premna subscandens* (Verbenaceae).⁷¹⁾

107. 10-O-trans-p-Methoxycinnamoylasstasioside E

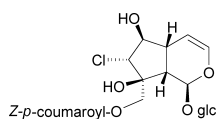
$C_{25}H_{30}O_{12}Cl$; 557.1425; colorless crystals; mp 125—127 °C (H_2O); $[\alpha]_D^{18} -119.4^\circ$ ($c=1.41$, MeOH); UV (MeOH): 209 (4.02), 227 (4.03), 308 (4.33); IR (KBr): 3300, 1690, 1630, 1510, 1420, 1250, 1195, 1174, 1077, 1020, 960, 845; 1H -NMR (400 MHz, CD_3OD): 5.62 (d, 4.0, H-1), 6.23 (dd, 6.0, 2.0, H-3), 5.11 (dd, 6.0, 3.0, H-4), 2.72 (dddd, 11.0, 6.0, 3.0, 2.0, H-5), 3.93 (dd, 8.0, 6.0, H-6), 4.07 (d, 8.0, H-7), 2.64 (dd, 11.0, 4.0, H-9), 4.31 and 4.55 (each d, 12.0, H_2 -10), 4.63 (d, 8.0, H-1'), 3.22 (dd, 9.0, 8.0, H-2'), 3.61 (dd, 12.0, 5.0, H-6'), 3.84 (dd, 12.0, 2.0, H-6'), 7.57 (d, 9.0, H-2'', 6''), 6.96 (d, 9.0, H-3'', 5''), 7.68 (d, 16.0, H-7''), 6.38 (d, 16.0, H-8''), 3.83 (s, MeO-4''); ^{13}C -NMR (100 MHz, CD_3OD): 93.0 (C-1), 140.9 (C-3), 105.8 (C-4), 38.1 (C-5), 83.5 (C-6), 73.5 (C-7), 79.5 (C-8), 49.1 (C-9), 66.2 (C-10), 99.9 (C-1'), 74.8 (C-2'), 78.1 (C-3'), 71.4 (C-4'), 78.0 (C-5'), 62.7 (C-6'), 128.4 (C-1''), 131.1 (C-2'', 6''), 115.5 (C-3'', 5''), 163.3 (C-4''), 146.5 (C-7''), 115.9 (C-8''), 168.9 (C-9''), 56.4 (MeO-4''). *Premna subscandens* (Verbenaceae).⁶¹⁾

108. 10-O-cis-p-Methoxycinnamoylasstasioside E

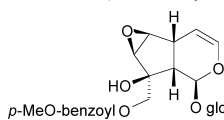
$C_{25}H_{30}O_{12}Cl$; 557.1425; amorphous powder; $[\alpha]_D^{18} -127.2^\circ$ ($c=1.84$, MeOH); UV (MeOH): 209 (4.00), 223 sh (3.94), 306 (4.12); IR (KBr): 3325, 1700, 1600, 1510, 1250, 1165, 1070—1015, 960, 825; 1H -NMR (400 MHz, CD_3OD): 5.59 (d, 3.0, H-1), 6.20 (dd, 6.0, 2.0, H-3), 5.08 (dd, 6.0, 3.0, H-4), 2.69 (dddd, 11.0, 6.0, 3.0, 2.0, H-5), 3.90 (dd, 8.0, 6.0, H-6), 4.04 (d, 8.0, H-7), 2.61 (dd, 11.0, 3.0, H-9), 4.27 and 4.47 (each d, 12.0, H_2 -10), 4.62 (d, 8.0, H-1'), 3.20 (dd, 9.0, 8.0, H-2'), 3.67 (dd, 12.0, 5.0, H-6'), 3.85 (dd, 12.0, 2.0, H-6'), 7.74 (d, 9.0, H-2'', 6''), 6.89 (d, 9.0, H-3'', 5''), 6.90 (d, 13.0, H-7''), 5.85 (d, 13.0, H-8''), 3.82 (s, MeO-4''); ^{13}C -NMR (100 MHz, CD_3OD): 92.9 (C-1), 140.7 (C-3), 105.9 (C-4), 37.9 (C-5), 83.4 (C-6), 73.5 (C-7), 79.4 (C-8), 49.0 (C-9), 65.7 (C-10), 99.8 (C-1'), 74.8 (C-2'), 78.1 (C-3'), 71.6 (C-4'), 78.0 (C-5'), 62.8 (C-6'), 128.7 (C-1''), 133.6 (C-2'', 6''), 114.5 (C-3'', 5''), 162.2 (C-4''), 145.1 (C-7''), 117.3 (C-8''), 167.6 (C-9''), 55.8 (MeO-4''). *Premna subscandens* (Verbenaceae).⁶¹⁾

109. 10-O-trans-p-Coumaroylasstasioside E

$C_{24}H_{28}O_{12}Cl$; 543.1269; amorphous powder; $[\alpha]_D^{18} -140.8^\circ$ ($c=1.14$, MeOH); UV (MeOH): 209 (4.05), 228 (4.05), 302 sh (4.30), 309 (4.35); IR (KBr): 3350, 1685, 1625, 1600, 1510, 1440, 1330, 1260, 1170, 1070—1015, 870, 830; 1H -NMR (400 MHz, CD_3OD): 5.61 (d, 4.0, H-1), 6.22 (dd, 6.0, 2.0, H-3), 5.11 (dd, 6.0, 3.0, H-4), 2.72 (dddd, 11.0, 6.0, 3.0, 2.0, H-5), 3.94 (dd, 8.0, 6.0, H-6), 4.06 (d, 8.0, H-7), 2.64 (dd, 11.0, 4.0, H-9), 4.30 and 4.55 (each d, 12.0, H_2 -10), 4.63 (d, 8.0, H-1'), 3.22 (dd, 9.0, 8.0, H-2'), 3.68 (dd, 12.0, 5.0, H-6'), 3.83 (dd, 12.0, 2.0, H-6'), 7.47 (d, 9.0, H-2'', 6''), 6.81 (d, 9.0, H-3'', 5''), 7.66 (d, 16.0, H-7''), 6.33 (d, 16.0, H-8''); ^{13}C -NMR (100 MHz, CD_3OD): 93.1 (C-1), 140.9 (C-3), 105.8 (C-4), 38.1 (C-5), 83.5 (C-6), 73.5 (C-7), 79.5 (C-8), 49.2 (C-9), 66.1 (C-10), 99.9 (C-1'), 74.8 (C-2'), 78.1 (C-3'), 71.4 (C-4'), 78.0 (C-5'), 62.7 (C-6'), 127.2 (C-1''), 131.3 (C-2'', 6''), 116.9 (C-3'', 5''), 161.4 (C-4''), 146.9 (C-7''), 115.0 (C-8''), 168.9 (C-9''). *Premna subscandens* (Verbenaceae).⁶¹⁾

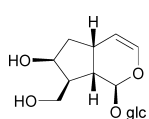
110. 10-*O*-*cis-p*-Coumaroylasystasioside E

$C_{24}H_{28}O_{12}$; ^{35}Cl : 543.1269; amorphous powder; $[\alpha]_D^{18} -121.1^\circ$ ($c=1.38$, MeOH); UV (MeOH): 228 (3.90), 301 sh (4.10), 310 (4.14); 1H -NMR (400 MHz, CD_3OD): 5.58 (d, 3.0, H-1), 6.20 (dd, 6.0, 2.0, H-3), 5.07 (dd, 6.0, 3.0, H-4) 2.67 (dddd, 11.0, 5.0, 3.0 2.0, H-5), 3.89, (dd, 8.0, 6.0, H-6), 4.03 (d, 8.0, H-7), 2.61 (dd, 11.0, 3.0, H-9), 4.26 and 4.46 (each d, 12.0, H_2 -10), 4.62 (d, 8.0, H-1'), 3.21 (dd, 9.0, 8.0, H-2'), 3.66 (dd, 12.0, 5.0, H-6'), 3.85 (dd, 12.0, 2.0, H-6'), 7.68 (d, 9.0, H-2''), 6.75 (d, 9.0, H-3'', 5''), 6.86 (d, 13.0, H-7''), 5.80 (d, 13.0, H-8''); ^{13}C -NMR (100 MHz, CD_3OD): 93.0 (C-1), 140.7 (C-3), 105.9 (C-4), 37.9 (C-5), 83.4 (C-6), 73.6 (C-7), 79.4 (C-8), 49.0 (C-9), 65.7 (C-10), 99.8 (C-1'), 74.8 (C-2'), 78.2 (C-3'), 71.6 (C-4'), 78.0 (C-5'), 62.8 (C-6'), 127.6 (C-1''), 133.9 (C-2'', 6''), 115.9 (C-3'', 5''), 160.2 (C-4''), 145.6 (C-7''), 116.3 (C-8''), 167.7 (C-9''). *Premna subscandens* (Verbenaceae).⁶¹

111. 10-*O*-(4-Methoxybenzoyl)-impetiginoside A

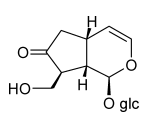
$C_{23}H_{28}O_{12}$: 496.1580; amorphous powder; $[\alpha]_D^{22} -131.0^\circ$ ($c=0.38$, MeOH); UV (MeOH): 202 (4.33), 256 (4.14); 1H -NMR (CD_3OD): 5.75 (br s, H-1), 6.26 (dd, 6.5, 2.5, H-3), 4.86 (ddd, 6.5, 2.0, 0.5, H-4), 3.12 (dt, 8.5, 2.0, H-5), 3.48 (d, 2.0, H-6), 3.58 (d, 2.0, H-7), 2.29 (br d, 8.5, H-9), 4.55 and 4.36 (each d, 10.0, H_2 -10), 4.59 (d, 8.0, H-1'), 3.18 (t, 8.0, H-2'), 3.35 (t, 8.0, H-3'), 3.29 (overlapping, H-4', 5'), 3.67 (dd, 11.5, 5.5, H-6'), 3.88 (dd, 11.5, 2.0, H-6'), 8.04 (d, 9.0, H-2''), 7.01 (d, 9.0, H-3'', 5''), 3.87 (s, MeO-4''); ^{13}C -NMR (CD_3OD): 92.4 (C-1), 142.0 (C-3), 101.5 (C-4), 33.1 (C-5), 58.9 (C-6), 60.8 (C-7), 79.4 (C-8), 46.9 (C-9), 68.3 (C-10), 99.5 (C-1'), 74.7 (C-2'), 78.2 (C-3')^a, 71.7 (C-4'), 78.0 (C-5')^a, 62.8 (C-6'), 123.5 (C-1''), 132.8 (C-2'', 6''), 114.9 (C-3'', 5''), 165.3 (C-4''), 167.8 (C-7''), 56.0 (MeO-4''). *Tabebuia impetiginosa* (Bignoniaceae).⁶⁸

112. Thunaloside



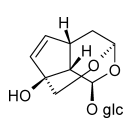
$C_{15}H_{24}O_9$: 348.1420; syrup; $[\alpha]_D^{20} -84.7^\circ$ ($c=0.4$, EtOH); 1H -NMR (250 MHz, D_2O): 5.25 (d, 3.9, H-1), 6.26 (dd, 6.0, 2.0, H-3), 4.99 (dd, 6.0, 3.1, H-4), 2.77 (m, H-5), 1.98 (ddd, 14.0, 8.0, 3.8, H-6), 1.79 (dt, 14.0, 6.0, 6.0, H-6), 4.42 (m, H-7), 2.10 (m, H-8, 9), 3.83 (dd, 11.0, 7.5, H_a -10), 3.77 (dd, 11.0, 5.5, H_b -10), 4.79 (d, 8.0, H-1'), 3.33 (dd, 9.3, 8.0, H-2'), 3.53 (t, 9.3, H-3'), 3.42 (t, 9.3, H-4'), 3.49 (ddd, 10.5, 6.0, 2.5, H-5'), 3.93 (dd, 12.5, 2.5, H-6'), 3.74 (dd, 12.5, 6.0, H-6'); ^{13}C -NMR (62.5 MHz, CD_3OD): 96.8 (C-1), 139.5 (C-3), 107.7 (C-4), 31.9 (C-5), 42.2 (C-6), 72.5 (C-7), 48.2 (C-8), 42.5 (C-9), 61.8 (C-10), 99.2 (C-1'), 73.9 (C-2'), 77.1 (C-3'), 70.6 (C-4'), 77.2 (C-5'), 61.5 (C-6'). *Thunbergia alata* (Acanthaceae).¹⁴

113. Proceroside (7-Oxocarpensioside)

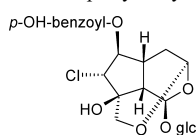


$C_{15}H_{22}O_9$: 346.1263; IR (neat) 1734; 1H -NMR (300 MHz, D_2O): 5.50 (d, 1.5, H-1), 6.20 (dd, 6.4, 1.9, H-3), 4.80 (m, H-4, 1'), 3.03 (ddd, 8.1, 7.0, 1.9, H-5), 2.49 (dd, 18.7, 8.1, H-6), 2.25 (d, 18.9, H-6), 2.32 (ddd, 11.3, 4.1, 3.7, H-8), 2.63 (ddd, 11.0, 7.0, 1.5, H-9), 3.70 (dd, 11.8, 3.7, H-10), 3.85 (dd, 11.4, 4.1, H-10), 3.20–3.45 (m, H-2', 3', 4', 5'), 3.64 (dd, 12.4, 6.0, H-6'), 3.81 (d, 12.2, H-6'); ^{13}C -NMR (75 MHz, D_2O): 93.6 (C-1), 139.2 (C-3), 106.2 (C-4), 25.7 (C-5), 44.6 (C-6), 223.1 (C-7), 50.7 (C-8), 39.7 (C-9), 58.9 (C-10), 98.4 (C-1'), 69.8, 72.9, 75.7, 76.4 (C-2', 3', 4', 5'), 60.9 (C-6'). *Pedicularis procera* syn. *P. grayi* (Scrophulariaceae).⁷²

114. Crescentoside C

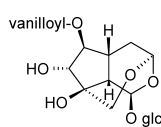


$C_{15}H_{22}O_9$: 346.1263; powder; $[\alpha]_D^{27} -33^\circ$ ($c=0.9$, MeOH); 1H -NMR (400 MHz, D_2O): 5.59 (br s, H-1), 5.23 (br s, H-3), 2.13 (dd, 14.8, 8.8, H_a -4), 1.59 (br d, 14.8, H_b -4), 2.86 (ddd, 8.8, 6.8, 3.4, H-5), 6.05 (dd, 5.6, 3.4, H-6), 5.49 (d, 5.6, H-7), 2.40 (d, 6.8, H-9), 3.64 and 3.38 (each d, 12.0, H_2 -10), 4.73 (d, 8.1, H-1'), 3.16 (dd, 9.0, 8.1, H-2'), 3.40 (t, 9.0, H-3'), 3.24 (t, 9.0, H-4'), 3.35 (ddd, 9.0, 5.6, 3.7, H-5'), 3.79 (dd, 12.4, 3.7, H-6'), 3.59 (dd, 12.4, 5.6, H-6'); ^{13}C -NMR (100 MHz, D_2O): 93.0 (C-1), 94.8 (C-3), 32.4 (C-4), 32.6 (C-5), 138.2 (C-6), 132.1 (C-7), 83.1 (C-8), 50.3 (C-9), 65.2 (C-10), 97.2 (C-1'), 72.3 (C-2'), 75.7 (C-3'), 69.2 (C-4'), 75.2 (C-5'), 60.3 (C-6'). *Crescentia cujete* (Bignoniaceae).⁷³

115. 6-*O*-*p*-Hydroxybenzoylglutinoside

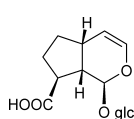
$C_{22}H_{26}ClO_{12}$: 518.1190; amorphous powder; $[\alpha]_D^{26} -30.7^\circ$ ($c=1.37$, $CHCl_3$); UV (MeOH): 237 (4.09); 1H -NMR (270 MHz, $CDCl_3$): 5.58 (d, 2.1, H-1), 5.39 (br d, 2.6, H-3), 2.06 (m, H_{α} -4), 2.32 (m, H_{β} -4), 2.40 (m, H-5), 5.18 (m, H-6), 5.50 (br d, 7.9, H-7), 3.60 (br d, 10.4, H-9), 4.30 (d, 12.5, H_a -10), 3.91 (dd, 12.5, 1.3, H_b -10), 4.96 (m, H-1', 2'), 5.22 (t, 9.6, H-3'), 5.10 (t, 9.6, H-4'), 3.73 (ddd, 9.7, 4.3, 2.5, H-5'), 4.15 (dd, 12.4, 2.5, H-6'), 4.32 (dd, 12.4, 4.3, H-6'), 8.09 (d, 8.7, H-2''), 7.20 (d, 8.7, H-3'', 5''), 2.00, 2.02, 2.03, 2.10, 2.11, 2.33 (each s, 6×OAc); ^{13}C -NMR (67.8 MHz, $CDCl_3$): 94.4 (C-1), 91.8 (C-3), 32.8 (C-4), 33.4 (C-5), 86.1 (C-6), 62.9 (C-7), 85.8 (C-8), 41.9 (C-9), 61.1 (C-10), 95.1 (C-1'), 70.9 (C-2'), 72.8 (C-3'), 68.2 (C-4'), 72.1 (C-5'), 61.1 (C-6'), 126.9 (C-1''), 131.5 (C-2'', 6''), 121.7 (C-3'', 5''), 154.7 (C-4''), 165.5 (C-7''), 20.6×2, 20.7×2, 21.2, 22.2, 169.1, 169.4, 169.8, 170.2, 170.6, 170.7 (6×Ac). *Catalpa fructus* (Bignoniaceae).⁵⁹

116. Pikuroside

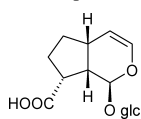


$C_{23}H_{30}O_{14}$: 530.1635; amorphous solid; mp 187–189 °C; $[\alpha]_D^{21} -31.5^\circ$ ($c=0.036$, MeOH); UV (MeOH): 221.0, 263.0, 292.5; IR (KBr): 3333, 2942, 2360, 2338, 1688, 1598, 1515, 1454, 1428, 1285, 1221, 1150, 1073, 1006; 1H -NMR (400 MHz, $DMSO-d_6$): 5.52 (d, 2.1, H-1), 5.28 (br d, 2.7, H-3), 1.94 (dd, 13.5, 2.7, H-4), 2.35 (br dd, 13.5, 8.6, H-4), 2.12 (ddd, 9.9, 8.6, 2.6, H-5), 4.76 (dd, 7.3, 2.6, H-6), 4.19 (br d, 7.3, H-7), 2.45 (br dd, 9.9, 2.1, H-9), 3.42 (br d, 11.9, H-10), 3.87 (br d, 11.9, H-10), 4.53 (d, 8.0, H-1'), 2.94 (dd, 8.9, 8.0, H-2'), 3.20 (dd, 8.9, 8.9, H-3'), 3.06 (dd, 9.3, 8.9, H-4'), 3.16 (ddd, 9.3, 5.8, 1.8, H-5'), 3.70 (dd, 11.9, 1.8, H-6'), 3.46 (dd, 11.9, 5.8, H-6'), 7.49 (d, 2.0, H-2''), 6.91 (d, 8.3, H-5''), 7.53 (dd, 8.3, 2.0, H-6''), 3.83 (s, MeO-3''); ^{13}C -NMR (100 MHz, $DMSO-d_6$): 91.5 (C-1), 94.1 (C-3), 33.9 (C-4), 32.0 (C-5), 86.9 (C-6), 80.3 (C-7), 78.4 (C-8), 46.3 (C-9), 60.1 (C-10), 97.2 (C-1'), 73.4 (C-2'), 76.7 (C-3'), 70.4 (C-4'), 77.3 (C-5'), 61.3 (C-6'), 166.7 (C-7''), 121.2 (C-1''), 113.0 (C-2''), 147.8 (C-3''), 151.8 (C-4''), 115.5 (C-5''), 124.1 (C-6''), 56.1 (OMe). *Picrorhiza kurroa* (Scrophulariaceae).⁷⁴

117. Grandifloric acid

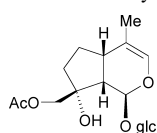


$C_{15}H_{22}O_9$: 346.1263; $[\alpha]_D^{20} -84.0^\circ$ ($c=1.06$, MeOH); 1H -NMR (D_2O): 5.11 (d, 3.2, H-1), 6.05 (m, H-3), 4.70 (m, H-4), 2.57 (m, H-5), 1.84 (m, H-6), 1.53 (m, H-6), 1.84 (m, H_2 -7), 1.33 (m, H_2 -7), 2.25 (m, H-8), 2.43 (m, H-9), 4.61 (d, 7.8, H-1'), 3.16–3.36 (m, H-2', 3', 4', 5'), 3.73 (dd, 13.8, 3.3, H-6'), 3.90 (dd, 13.8, 9.8, H-6'); *Thunbergia grandiflora*, *T. alata* (Acanthaceae).¹³

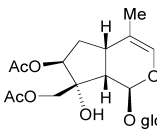
118. 8-*epi*-Grandifloric acid

$C_{15}H_{22}O_9$: 346.1263; amorphous powder; $[\alpha]_D^{19} +55.4^\circ$ ($c=0.98$, MeOH); 1H -NMR (400 MHz, CD_3OD): 5.26 (d, 3.7, H-1), 6.21 (dd, 6.1, 2.0, H-3), 4.72 (dd, 6.1, 2.0, H-4), 2.78 (m, H-5), 1.96 (m, H-6), 1.49 (m, H-6), 2.05 (m, H_a -7), 1.84 (m, H_b -7), 2.80 (m, H-8), 2.47 (m, H-9), 4.65 (d, 7.8, H-1'), 3.21 (dd, 8.0, 7.8, H-2'), 3.30–3.40 (m, H-3', 5'), 3.39 (dd, 9.3, 8.8, H-4'), 3.87 (dd, 12.0, 2.0, H-6'), 3.68 (dd, 12.0, 4.9, H-6'); ^{13}C -NMR (100 MHz, CD_3OD): 95.5 (C-1), 140.7 (C-3), 107.6 (C-4), 34.6 (C-5), 33.0 (C-6), 29.0 (C-7), 45.8 (C-8), 46.4 (C-9), 179.5 (C-10), 99.7 (C-1'), 74.7 (C-2'), 78.1 (C-3'), 71.4 (C-4'), 77.9 (C-5'), 62.6 (C-6'). *Thunbergia laurifolia* (Acanthaceae).¹⁵

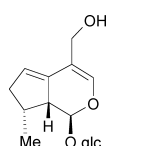
Group-3a (10-Carbon skeleton, sugar at C-1)

119. 10-*O*-Acetyl-8 α -hydroxydecapetaloside (Compound-1)

$C_{18}H_{28}O_{10}$: 404.1682; amorphous powder; 1H -NMR (CD_3OD): 5.20 (d, 6.2, H-1), 6.08 (br s, H-3), 2.49 (m, H-5), 2.19 (dd, 9.5, 6.2, H-9), 4.01, 4.18 (each d, 11.2, H_2 -10), 1.59 (s, H_3 -11), 4.69 (d, 7.7, H-1'), 3.76 (dd, 12.1, 5.0, H-6'), 3.84 (dd, 12.1, 1.8, H-6'); ^{13}C -NMR (CD_3OD): 95.9 (C-1), 136.2 (C-3), 115.4 (C-4), 40.9 (C-5), 37.9 (C-6), 30.4 (C-7), 81.9 (C-8), 47.8 (C-9), 71.4 (C-10), 16.2 (C-11), 100.8 (C-1'), 74.8 (C-2'), 78.0 (C-3')^a, 71.4 (C-4'), 78.4 (C-5')^a, 62.6 (C-6'), 20.9, 173.1 (Ac). *Viburnum suspensum* (Caprifoliaceae).⁷⁵⁾

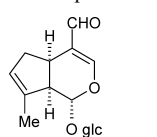
120. 7 β -Acetoxy-10-*O*-acetyl-8 α -hydroxydecapetaloside (Compound-2)

$C_{20}H_{30}O_{11}$: 446.1788; amorphous powder; 1H -NMR (CD_3OD): 5.27 (d, 6.5, H-1), 6.07 (br s, H-3), 2.76 (br dd, 17.6, 8.8, H-5), 5.04 (br dd, 4.0, 2.6, H-7), 2.35 (dd, 10.1, 5.7, H-9), 4.24, 4.31 (each d, 11.7, H_2 -10), 1.58 (s, H_3 -11), 4.68 (d, 7.7, H-1'), 3.68 (dd, 11.7, 5.1, H-6'), 3.85 (dd, 11.7, 1.8, H-6'), 2.03, 2.05 (each s, 2 \times OAc); ^{13}C -NMR (CD_3OD): 95.5 (C-1), 135.8 (C-3), 115.8 (C-4), 37.1 (C-5), 36.3 (C-6), 80.4 (C-7), 83.0 (C-8), 47.0 (C-9), 67.8 (C-10), 16.2 (C-11), 100.5 (C-1'), 74.7 (C-2'), 77.9 (C-3')^a, 71.3 (C-4'), 78.2 (C-5')^a, 62.5 (C-6'), 20.8, 21.0, 171.6, 172.8 (2 \times Ac). *Viburnum suspensum* (Caprifoliaceae).⁷⁵⁾

121. Kansuonoside (8-*epi*-5-Dehydro-6-dehydroxyverbenol)

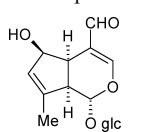
$C_{16}H_{24}O_8$: 344.1471; white amorphous powder; $[\alpha]_D^{24} -10.0^\circ$ ($c=1.44$, MeOH); UV (MeOH): 249; IR (KBr): 3464, 3200, 1637, 1077, 1007; 1H -NMR (400 MHz, DMSO- d_6): 5.07 (br d, 10.0, H-1), 6.50 (s, H-3), 5.53 (br s, H-6), 1.92 (m, H-7), 2.48 (m, H-7), 2.42 (m, H-8), 2.58 (dd, 10.0, 6.5, H-9), 0.84 (d, 6.8, H_3 -10), 4.02 (br s, H_2 -11), 4.57 (d, 7.8, H-1'), 2.90–3.37 (H-2'–5'), 3.65 (d, 11.2, H_2 -6'); ^{13}C -NMR (100 MHz, DMSO- d_6): 97.8 (C-1), 141.8 (C-3), 114.4 (C-4), 133.4 (C-5), 118.6 (C-6), 40.6 (C-7), 32.8 (C-8), 48.6 (C-9), 14.8 (C-10), 58.3 (C-11), 98.8 (C-1'), 73.2 (C-2'), 76.7 (C-3'), 70.1 (C-4'), 77.2 (C-5'), 61.3 (C-6'). *Pedicularis kansuensis* f. *albiflora* (Scrophulariaceae).^{55,76)}

122. Nepetanuloside C

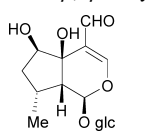


$C_{16}H_{22}O_8$: 342.1314; amorphous powder; $[\alpha]_D^{25} -15.6^\circ$ ($c=1.31$, MeOH); UV (MeOH): 251 (4.01); IR (KBr): 3387, 1686, 1626; 1H -NMR (400 MHz, CD_3OD): 5.40 (d, 4.6, H-1), 7.38 (s, H-3), 3.15 (m, H-5), 2.16 (m, H-6), 2.72 (m, H-6), 5.45 (m, H-7), 2.89 (m, H-9), 1.83 (br s, H_3 -10), 9.19 (s, H-11), 4.61 (d, 7.6, H-1'), 3.68 (dd, 12.0, 3.8, H-6'), 3.85 (br d, 12.0, H-6'); ^{13}C -NMR (100 MHz, CD_3OD): 102.4 (C-1), 164.8 (C-3), 125.6 (C-4), 32.7 (C-5), 38.4 (C-6), 128.1 (C-7), 139.2 (C-8), 50.5 (C-9), 15.6 (C-10), 193.5 (C-11), 104.6 (C-1'), 75.2 (C-2'), 78.4 (C-3')^a, 71.2 (C-4'), 78.1 (C-5')^a, 62.5 (C-6'). *Nepeta nuda* ssp. *albiflora* (Labiatae).⁸⁴⁾

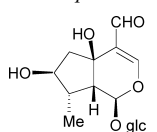
123. Nepetacilioside



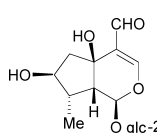
$C_{16}H_{22}O_9$: 358.1263; amorphous powder; $[\alpha]_D^{25} +72.4^\circ$ ($c=0.98$, MeOH); UV (MeOH): 250 (4.04); IR (KBr): 3350, 1660, 1627; 1H -NMR (400 MHz, CD_3OD): 5.49 (d, 3.4, H-1), 7.36 (s, H-3), 2.98 (dd, 7.3, 2.0, H-5), 4.45 (br s, H-6), 5.50 (br s, H-7), Ca. 3.31 (H-9), 1.87 (d, 1.0, H_3 -10), 9.23 (s, H-11), 4.61 (d, 7.8, H-1'), 3.23 (dd, 7.8, 7.8, H-2'), 3.67 (dd, 11.7, 3.4, H-6'), 3.85 (br d, 11.7, H-6'); ^{13}C -NMR (100 MHz, CD_3OD): 101.7 (C-1), 165.0 (C-3), 123.1 (C-4), 41.9 (C-5), 80.6 (C-6), 130.6 (C-7), 144.0 (C-8), 49.8 (C-9), 15.5 (C-10), 193.7 (C-11), 104.7 (C-1'), 75.1 (C-2'), 78.4 (C-3'), 71.1 (C-4'), 77.8 (C-5'), 62.6 (C-6'). *Nepeta cilicia* (Labiatae).⁷⁷⁾

124. 5 β ,6 β -Dihydroxyboschnalioside

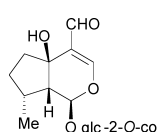
$C_{16}H_{25}O_{10}$: 378.1526; amorphous powder; $[\alpha]_D^{21} -140^\circ$ ($c=0.27$, MeOH); UV (MeOH): 242 (4.10); IR (KBr): 3370, 2924, 1665, 1625, 1258, 1139, 1077; 1H -NMR (500 MHz, CD_3OD): 5.92 (s, H-1), 7.46 (s, H-3), 4.29 (dd(t), 3.4, H-6), 1.35 (ddd, 12.8, 7.6, 4.6, H_2 -7), 1.79 (ddd, 12.8, 6.8, 2.6, H_2 -7), 2.62 (m, H-8), 2.60 (br s, H-9), 0.95 (d, 6.8, H_3 -10), 9.24 (s, H-11), 4.59 (d, 7.7, H-1'), 3.17 (dd, 8.5, 7.7, H-2'), 3.34 (t, 8.5, H-3'), 3.24 (t, 9.4, H-4'), 3.32 (m, H-5'), 3.65 (dd, 11.9, 5.9, H-6'), 3.91 (dd, 11.9, 1.7, H-6'); ^{13}C -NMR (125 MHz, CD_3OD): 97.2 (C-1), 166.2 (C-3), 124.7 (C-4), 73.8 (C-5), 75.9 (C-6), 40.4 (C-7), 31.3 (C-8), 49.6 (C-9), 16.7 (C-10), 193.3 (C-11), 100.1 (C-1'), 74.2 (C-2'), 77.3 (C-3'), 71.5 (C-4'), 78.3 (C-5'), 62.6 (C-6'). *Euphrasia pectinata* (Scrophulariaceae).⁷⁸⁾

125. 8-*epi*-Tecomoside (7 β -Hydroxyplantarenalioside)

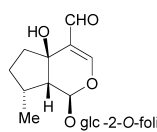
$C_{16}H_{24}O_{10}$: 376.1369; solid; $[\alpha]_D^{25} -122.0^\circ$ ($c=1.34$, MeOH); 1H -NMR (300 MHz, CD_3OD): 5.81 (d, 1.1, H-1), 7.35 (s, H-3), 1.97 (dd, 13.3, 7.3, H-6), 2.53 (dd, 13.3, 5.6, H-6), 3.45 (m, H-7), 2.22 (m, H-8), 2.71 (dd, 10.8, 1.1, H-9), 0.92 (d, 7.3, H_3 -10), 9.20 (s, H-11), 4.56 (d, 7.9, H-1'), 3.11–3.36 (m, H-2', 3', 4', 5'), 3.61 (dd, 12.0, 6.1, H-6'), 3.87 (dd, 12.0, 1.8, H-6'); ^{13}C -NMR (75.5 MHz, CD_3OD): 96.5 (C-1), 164.0 (C-3), 126.4 (C-4), 70.4 (C-5), 46.8 (C-6), 77.7 (C-7), 43.0 (C-8), 51.1 (C-9), 13.9 (C-10), 192.5 (C-11), 98.8 (C-1'), 74.2 (C-2'), 77.3 (C-3'), 71.5 (C-4'), 78.4 (C-5'), 62.7 (C-6'). *Penstemon parryi* (Scrophulariaceae).⁷⁹⁾

126. 2'-*O*-Coumaroyl-8-*epi*-tecomoside

$C_{25}H_{30}O_{12}$: 522.1737; solid; 1H -NMR (300 MHz, CD_3OD): 5.74 (d, 1.5, H-1), 7.11 (s, H-3), 1.82 (dd, 12.8, 8.6, H-6), 2.45 (dd, 12.8, 5.6, H-6), 3.55–3.60 (m, H-7), 2.10 (m, H-8), 2.66 (dd, 11.7, 1.3, H-9), 0.84 (d, 4.5, H_3 -10), 8.75 (s, H-11), 4.74 (d, 8.0, H-1'), 4.65 (dd, 9.0, 8.0, H-2'), 3.21–3.34 (m, H-3', 4', 5'), 3.61 (dd, 12.0, 6.1, H-6'), 3.86 (dd, 12.0, 1.8, H-6'), 7.37 (d, 8.6, H-2'', 6''), 6.71 (d, 8.6, H-3'', 5''), 7.45 (d, 16.0, H-7''), 6.20 (d, 16.0, H-8''); ^{13}C -NMR (75.5 MHz, CD_3OD): 97.1 (C-1), 163.4 (C-3), 126.5 (C-4), 70.5 (C-5), 45.2 (C-6), 77.8 (C-7), 42.4 (C-8), 51.5 (C-9), 13.9 (C-10), 191.8 (C-11), 98.3 (C-1'), 75.1 (C-2'), 75.3 (C-3'), 71.6 (C-4'), 78.6 (C-5'), 62.7 (C-6'), 126.5 (C-1''), 131.5 (C-2''), 117.1 (C-3''), 162.3 (C-4''), 148.4 (C-7''), 114.4 (C-8''), 169.5 (C-9''). *Penstemon parryi* (Scrophulariaceae).⁷⁹⁾

127. 2'-*O*-Coumaroylplantarenalioside

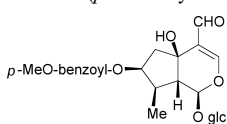
$C_{25}H_{30}O_{11}$: 506.1788; solid; 1H -NMR (300 MHz, CD_3OD): 5.79 (d, 0.5, H-1), 7.18 (s, H-3), 1.85 (m, H-6), 2.25 (m, H-6), 0.90 and 1.80 (each m, H_2 -7), 1.80 (m, H-8), 2.41 (br s, H-9), 0.85 (d, 6.6, H_3 -10), 8.80 (s, H-11), 4.77 (d, 8.1, H-1'), 4.70 (dd, 9.2, 8.1, H-2'), 3.24–3.38 (m, H-3', 4', 5'), 3.64 (m, H-6'), 3.90 (dd, 12.0, 2.0, H-6'), 7.43 (d, 8.5, H-2'', 6''), 6.77 (d, 8.5, H-3'', 5''), 7.51 (d, 16.0, H-7''), 6.27 (d, 16.0, H-8''); ^{13}C -NMR (75.5 MHz, CD_3OD): 97.4 (C-1), 163.3 (C-3), 126.1 (C-4), 73.7 (C-5), 37.2 (C-6), 32.9 (C-7), 34.2 (C-8), 52.6 (C-9), 16.6 (C-10), 192.0 (C-11), 98.3 (C-1'), 75.1 (C-2'), 75.3 (C-3'), 71.6 (C-4'), 78.5 (C-5'), 62.7 (C-6'), 127.0 (C-1''), 131.6 (C-2''), 116.9 (C-3''), 161.5 (C-4''), 148.3 (C-7''), 114.7 (C-8''), 169.5 (C-9''). *Penstemon parryi* (Scrophulariaceae).⁷⁹⁾

128. 2'-*O*-Foliamenthylplantarenalioside

$C_{26}H_{38}O_{11}$: 526.2414; solid; $[\alpha]_D^{25} -70.1^\circ$ ($c=1.06$, MeOH); 1H -NMR (200 MHz, CD_3OD): 5.76 (s, H-1), 7.18 (s, H-3), 1.77 (m, H_2 -6), 0.9 and 1.8 (each m, H_2 -7), — (H-8), 2.35 (br s, H-9), 0.85 (d, 6.6, H_3 -10), 9.00 (s, H-11), 4.72 (d, 8.0, H-1'), 4.64 (dd, 9.2, 8.0, H-2'), 3.20–3.70 (m, H-3', 4', 5'), 3.60 (m, H-6'), 3.86 (dd, 12.0, 2.0, H-6'), 6.72 (t, H-3''), 2.20 (m, H_2 -4''), 2.13 (m, H_2 -5''), 5.33 (H-7''), 4.03 (H_2 -8''), 1.75 (s, H_3 -9''), 1.60 (s, H_3 -10''); ^{13}C -NMR (50 MHz, CD_3OD): 97.1 (C-1), 163.4 (C-3), 126.1 (C-4), 73.7 (C-5), 37.3 (C-6), 33.0 (C-7), 34.3 (C-8), 52.5 (C-9), 16.6 (C-10), 191.7 (C-11), 98.0 (C-1'), 73.7 (C-2'), 75.3 (C-3'), 71.7 (C-4'), 78.5 (C-5'), 62.7 (C-6'), 169.3 (C-1''), 128.6 (C-2''), 144.1 (C-3''),

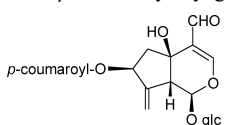
28.1 (C-4''), 39.1 (C-5''), 138.4 (C-6''), 125.7 (C-7''), 59.4 (C-8''), 12.5 (C-9''), 16.2 (C-10''). *Penstemon barrettiae* (Scrophulariaceae).⁷⁹⁾

129. 7-O-(p-Methoxybenzoyl)-tecimoside



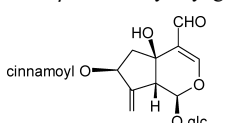
$C_{24}H_{30}O_{12}$: 510.1737; amorphous solid; $[\alpha]_D^{25} -62.5^\circ$ ($c=0.1$, MeOH); UV (MeOH): 260 (4.2); IR (KBr): 3440, 1700, 1650, 1420; 1H -NMR (CD_3OD): 5.81 (br s, H-1), 7.35 (s, H-3), 2.64 (dd, 15.8, 5.9, H-6), 2.25 (dd, 15.8, 2.2, H-6), 5.09 (m, H-7), 1.89 (m, H-8), 2.33 (d, 12.6, H-9), 1.00 (d, 6.7, H₃-10), 9.27 (s, H-11), 4.61 (d, 7.5, H-1'), 7.69 (d, Ar-H), 6.89 (d, Ar-H), 3.83 (s, MeO-4''); ^{13}C -NMR (CD_3OD): 96.3 (C-1), 162.7 (C-3), 126.6 (C-4), 71.5 (C-5), 46.9 (C-6), 76.8 (C-7), 39.8 (C-8), 55.2 (C-9), 13.0 (C-10), 192.6 (C-11), 100.2 (C-1'), 74.4 (C-2'), 78.6 (C-3'), 71.5 (C-4'), 77.5 (C-5'), 62.6 (C-6'), 128.3 (C-1''), 133.3 (C-2''), 6'', 116.2 (C-3''), 5'', 163.2 (C-4''), 168.6 (C-7''), 55.9 (MeO). *Tecoma capensis* (Bignoniaceae).⁸⁰⁾

130. 7β-Coumaroyloxyugandoside



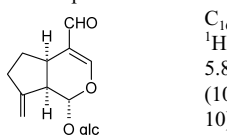
$C_{25}H_{28}O_{12}$: 520.1580; prism, mp 168—170 °C; UV (MeOH): 242, 314; IR (?): 1731, 1681, 1621; 1H -NMR (400 MHz, DMSO- d_6): 5.93 (d, 1.1, H-1), 7.54 (s, H-3), 1.87 (dd, 12.4, 9.6, H_α-6), 3.03 (d, 9.2, H_β-6), 5.16 (m, H-7), 2.95—2.99 (H-9), 5.32 (s, H₂-10), 9.26 (s, H-11), 4.43 (d, 8.0, H-1'), 2.95—2.99 (H-2', 4'), 3.14—4.19 (H-3', 5'), 3.66, 3.71 (br d, H₂-6'), 6.76 (d, 8.4, H-2'', 6''), 7.54 (d, 8.8, H-3'', 5''), 10.66 (s, HO-4''), 7.53 (d, 16.0, H-7''), 6.37 (d, 16.0, H-8''); ^{13}C -NMR (100 MHz, DMSO- d_6): 95.0 (C-1), 163.3 (C-3), 122.2 (C-4), 68.0 (C-5), 40.7 (C-6), 72.7 (C-7), 145.6 (C-8), 51.6 (C-9), 113.5 (C-10), 190.7 (C-11), 98.7 (C-1'), 71.8 (C-2'), 77.4 (C-3'), 70.1 (C-4'), 75.6 (C-5'), 61.2 (C-6'), 125.0 (C-1''), 130.5 (C-2''), 6'', 114.9 (C-3''), 5'', 160.0 (C-4''), 145.2 (C-7''), 113.7 (C-8''), 166.5 (C-9''). *Clerodendrum serratum* (Verbenaceae).⁸³⁾

131. 7β-Cinnamoyloxyugandoside (Serratoside A)



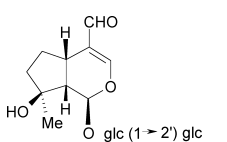
$C_{25}H_{28}O_{11}$: 504.1631; prisms, mp 132—134 °C; 1H -NMR (400 MHz, DMSO- d_6): 5.94 (d, 1.2, H-1), 7.55 (s, H-3), 1.89 (dd, 11.4, 9.3, H_α-6), 3.05 (d, 9.2, H_β-6), 5.21 (m, H-7), 2.96—3.01 (H-9), 5.34 (s, H₂-10), 9.27 (s, H-11), 4.43 (d, 8.0, H-1'), 2.96—3.01 (H-2', 4'), 3.13—3.18 (H-3', 5'), 3.63, 3.71 (br d, H₂-6'), 7.71 (d, 7.2, H-2'', 6''), 7.40 (d, 8.8, H-3'', 5''), 7.41 (m, H-4''), 7.63 (d, 16.0, H-7''), 6.63 (d, 16.0, H-8''); ^{13}C -NMR (100 MHz, DMSO- d_6): 95.1 (C-1), 163.3 (C-3), 122.2 (C-4), 68.1 (C-5), 40.7 (C-6), 72.9 (C-7), 145.5 (C-8), 51.7 (C-9), 113.6 (C-10), 190.7 (C-11), 98.9 (C-1'), 72.2 (C-2'), 77.5 (C-3'), 70.1 (C-4'), 75.6 (C-5'), 61.2 (C-6'), 134.0 (C-1''), 128.5 (C-2''), 6'', 129.0 (C-3''), 5'', 130.7 (C-4''), 145.1 (C-7''), 117.7 (C-8''), 166.1 (C-9''). *Clerodendrum serratum* (Verbenaceae).^{82,83)}

132. Nepetanudoside D



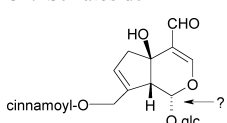
$C_{16}H_{22}O_8$: 342.1314; amorphous powder; $[\alpha]_D^{25} +22.6^\circ$ ($c=0.83$, MeOH); UV (MeOH): 248 (4.01); IR (KBr): 3355, 1703, 1626; 1H -NMR (400 MHz, CD_3OD): 5.48 (d, 5.0, H-1), 7.38 (s, H-3), 3.24 (m, H-5), 1.92 (m, H₂-6), 2.31 (m, H₂-7), 2.99 (m, H-9), 5.11, 5.81 (each d, 2.0, H₂-10), 9.19 (s, H-11), 4.61 (d, 8.0, H-1'), 3.70 (dd, 12.0, 4.0, H-6'), 3.86 (br d, 12.0, H-6'); ^{13}C -NMR (100 MHz, CD_3OD): 101.9 (C-1), 165.3 (C-3), 123.3 (C-4), 33.4 (C-5), 30.1 (C-6)^a, 31.9 (C-7)^a, 150.1 (C-8), 46.2 (C-9), 110.2 (C-10), 193.2 (C-11), 104.6 (C-1'), 75.2 (C-2'), 78.4 (C-3')^b, 71.2 (C-4'), 78.0 (C-5')^b, 62.5 (C-6'). *Nepeta nuda* ssp. *albiflora* (Labiatae).⁸⁴⁾

133. Plicatoside A



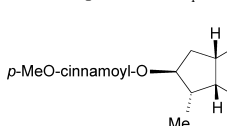
$C_{22}H_{34}O_{14}$: 522.1948; white amorphous powder; $[\alpha]_D^{23} -76.6^\circ$ ($c=0.64$, MeOH); UV (MeOH): 249 (3.58); IR (KBr): 3360, 1666, 1631; 1H -NMR (400 MHz, D_2O): 5.72 (d, 6.2, H-1), 7.46 (br s, H-3), 3.14 (m, H-5), 1.51 (m, H_α-6), 1.75 (m, H_β-6, H_α-7), 2.25 (m, H_β-7), 2.38 (dd, 9.5, 2.6, H-9), 1.30 (s, H₃-10), 9.12 (s, H-11), 4.72 (d, 7.8, H-1'), 3.20—4.00 (m, sugar H), 4.38 (d, 7.8, H-1''); ^{13}C -NMR (100 MHz, D_2O): 96.4 (C-1), 164.2 (C-3), 125.0 (C-4), 28.5 (C-5), 28.6 (C-6), 40.4 (C-7), 80.2 (C-8), 51.1 (C-9), 23.8 (C-10), 195.5 (C-11), 99.1 (C-1'), 79.1 (C-2'), 73.8 (C-3'), 70.2 (C-4'), 76.4 (C-5'), 61.5 (C-6'), 104.0 (C-1''), 73.4 (C-2''), 76.4 (C-3''), 70.4 (C-4''), 76.7 (C-5''), 61.5 (C-6''). *Pedicularis plicata* (Scrophulariaceae).⁸⁵⁾

134. Serratoside B



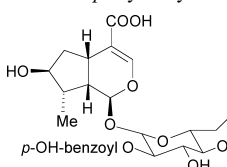
$C_{25}H_{28}O_{11}$: 504.1631; brown gum; 1H -NMR (400 MHz, C_3D_5N): 5.83 (d, 7.5, H-1), 7.50 (s, H-3), 2.88 (br d, 17.3, H_α-6), 3.27 (br d, 17.3, H_β-6), 5.78 (br s, H-7), 3.47 (d, 7.5, H-9), 5.11 (d, 13.9, H-10), 5.22 (d, 13.9, H-10), 9.50 (s, H-11), 5.43 (d, 7.8, H-1'), 4.14 (t, 8.0, H-2'), 4.28 (m, H-3', 4'), 4.03 (m, H-5'), 4.35 (dd, 11.8, 5.7, H-6'), 4.54 (dd, 11.8, 2.0, H-6'), 7.55 (d, 6.4, H-2'', 6''), 7.34 (d, 6.4, H-3'', 5''), 7.33 (s, H-4''), 7.86 (d, 16.0, H-7''), 6.67 (d, 16.0, H-8''); ^{13}C -NMR (100 MHz, C_3D_5N): 99.6 (C-1), 161.5 (C-3), 126.6 (C-4), 75.3 (C-5), 46.8 (C-6), 129.3 (C-7), 136.7 (C-8), 57.2 (C-9), 62.8 (C-10), 190.6 (C-11), 101.2 (C-1'), 74.8 (C-2'), 79.0 (C-3'), 71.5 (C-4'), 78.4 (C-5'), 62.8 (C-6'), 135.0 (C-1''), 128.7 (C-2''), 6'', 129.3 (C-3''), 5'', 130.7 (C-4''), 145.2 (C-7''), 118.8 (C-8''), 166.6 (C-9''). *Clerodendrum serratum* (Verbenaceae).⁸²⁾

135. Scrophuloside A₁

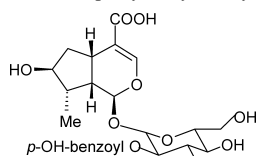


$C_{26}H_{32}O_{12}$: 536.1893; amorph. powder, $[\alpha]_D^{23} -67.8^\circ$ ($c=0.58$, MeOH); UV (MeOH): 227 (4.35), 298 sh (4.31), 309 (4.34); 1H -NMR (400 MHz, CD_3OD): 5.55 (d, 5.0, H-1), 7.43 (br s, H-3), 3.11 (m, H-5), 2.01 (m, H-6), 2.26 (m, H-6), 4.94 (m, H-7), 2.46 (m, H-8), 2.60 (m, H-9), 1.23 (d, 6.0, H₃-10), 4.70 (d, 8.0, H-1'), 3.20 (dd, 9.0, 8.0, H-2'), 3.37 (dd, 9.0, 9.0, H-3'), 3.25 (dd, 9.0, 8.5, H-4'), 3.31 (m, H-5'), 3.65 (dd, 12.0, 6.0, H-6'), 3.91 (dd, 12.0, 2.0, H-6'), 6.37 (d, 16.6, H-8''), 7.62 (d, 16.0, H-7''), 7.55 (d, 9.0, H-2'', 6''), 6.96 (d, 9.0, H-3'', 5''), 3.83 (s, MeO-4''); ^{13}C -NMR (100 MHz, CD_3OD): 95.9 (C-1), 152.7 (C-3), 114.0 (C-4), 31.8 (C-5), 39.1 (C-6), 82.7 (C-7), 43.1 (C-8), 43.3 (C-9), 14.3 (C-10), 170.6 (C-11), 99.8 (C-1'), 74.8 (C-2'), 78.0 (C-3'), 71.7 (C-4'), 78.4 (C-5'), 62.9 (C-6'), 168.8 (C-9''), 116.4 (C-8''), 146.1 (C-7''), 128.3 (C-1''), 131.0 (C-2''), 6'', 115.4 (C-3''), 5'', 163.2 (C-4''), 55.9 (MeO-4''). *Scrophularia nodosa* (Scrophulariaceae).⁵³⁾

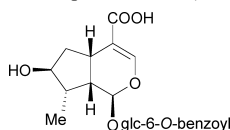
136. 2'-O-p-Hydroxybenzoyl-6'-O-trans-caffeoyl-8-epi-loganic acid



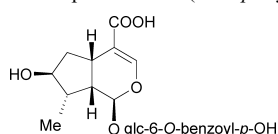
$C_{32}H_{34}O_{15}$: 658.1897; pale yellow amorphous powder; mp 158—160 °C; $[\alpha]_D^{25} -88.6^\circ$ ($c=0.5$, MeOH); UV (MeOH): 249 (4.34), 330 (4.16); IR (KBr): 3400, 1698, 1604, 1517, 1449, 1272, 1168, 1116, 977, 852; 1H -NMR (500 MHz, CD_3OD): 5.29 (d, 4.0, H-1), 7.09 (br s, H-3), 2.83 (m, H-5), 1.92 (m, H-6), 1.74 (m, H-6), 3.70 (m, H-7), 2.02 (m, dd, 14.0, 7.0, H-8), 2.45 (m, H-9), 0.96 (d, 7.5, H₃-10), 4.99 (d, 8.0, H-1'), 4.94 (dd, 9.5, 8.0, H-2'), 3.69 (m, H-3'), 3.52 (dd, 9.5, 9.0, H-4'), 3.67 (m, H-5') 4.42 (dd, 12.0, 6.0, H-6'), 4.54 (dd, 12.0, 2.0, H-6'), 7.84 (d, 8.5, H-2'', 6''), 6.81 (d, 8.5, H-3'', 5''), 6.31 (d, 15.5, H-8''), 7.59 (d, 15.5, H-7''), 7.05 (br s, H-2''), 6.77 (d, 8.5, H-5''), 6.95 (dd, 8.5, 1.5, H-6''); ^{13}C -NMR (75 MHz, CD_3OD): 96.1 (C-1), 151.0 (C-3), 113.8 (C-4), 31.6 (C-5), 40.8 (C-6), 79.3 (C-7), 44.7 (C-8), 42.7 (C-9), 14.3 (C-10), 97.9 (C-1'), 74.9 (C-2'), 75.8 (C-3'), 71.9 (C-4'), 76.0 (C-5'), 64.2 (C-6'), 122.2 (C-1''), 132.9 (C-2''), 6'', 116.2 (C-3''), 5'', 163.3 (C-4''), 167.4 (C-7''), 169.0 (C-9''), 114.8 (C-8''), 147.3 (C-7''), 127.7 (C-1''), 115.2 (C-2''), 146.8 (C-3''), 149.6 (C-4''), 116.6 (C-5''), 123.1 (C-6''). *Vitex altissima* (Verbenaceae).⁸⁶⁾

137. 2'-*O*-*p*-Hydroxybenzoyl-8-*epi*-loganic acid

$C_{23}H_{28}O_{12}$: 496.2083; colorless amorphous powder; mp 219–220 °C; $[\alpha]_D^{25} -119.9^\circ$ ($c=0.75$, MeOH); UV (MeOH): 255 (4.42); IR (KBr): 3405, 1703, 1648, 1609, 1516, 1275, 1171, 1074, 904, 856; 1H -NMR (500 MHz, CD_3OD): 5.40 (br s, H-1), 7.03 (br s, H-3), 2.86 (br s, H-5), 1.82 (br s, H-6), 1.93 (br s, H-6), 3.72 (br s, H-7), 2.04 (d, 5.5, H-8), 1.00 (d, 7.0, H₃-10), 4.95 (d, 8.0, H-1'), 4.88 (dd, 9.0, 8.0, H-2'), 3.68 (m, H-3'), 3.39 (m, H-4'), 3.67 (m, H-5'), 3.65 (m, H-6'), 3.93 (d, 12.0, H-6'), 7.83 (br d, 7.5, H-2''), H-6''), 6.80 (br d, 7.5, H-3'', 5''); ^{13}C -NMR (75 MHz, CD_3OD): 96.1 (C-1), 31.3 (C-5), 40.9 (C-6), 79.4 (C-7), 44.8 (C-8), 42.8 (C-9), 14.4 (C-10), 98.0 (C-1'), 75.0 (C-2'), 76.3 (C-3'), 71.8 (C-4'), 78.5 (C-5'), 62.8 (C-6'), 122.3 (C-1''), 132.9 (C-2'', 6''), 116.2 (C-3'', 5''), 163.3 (C-4''), 167.4 (C-7''). C-3, C-4 and C-11 signals were not observed. *Vitex altissima* (Verbenaceae).⁸⁶

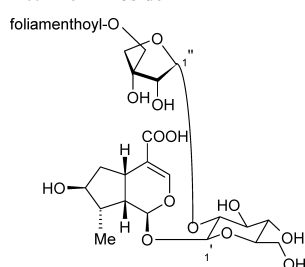
138. Aquaticoside A (6'-*O*-Benzoyl-8-*epi*-loganic acid)

$C_{23}H_{28}O_{11}$: 480.1631; amorphous powder; $[\alpha]_D^{24} -77.4^\circ$ ($c=0.30$, MeOH); UV (MeOH): 234, 299, 331; 1H -NMR (500 MHz, CD_3OD): 5.27 (d, 5.5, H-1), 7.37 (s, H-3), 3.05 (dt, 8.2, 7.6, H-5), 1.72 (dt, 13.7, 7.0, H-6), 2.02 (m, H-6), 3.73 (m, H-7), 2.07 (m, H-8), 2.47 (dt, 8.2, 5.5, H-9), 1.02 (d, 7.3, H₃-10), 4.76 (d, 7.9, H-1'), 3.29 (dd, 9.1, 7.9, H-2'), 3.46 (overlapped, H-3', 4'), 3.67 (m, H-5'), 4.56 (dd, 11.9, 6.4, H-6'), 4.71 (dd, 11.9, 2.4, H-6'), 8.08 (dd, 8.5, 1.2, H-2'', 6''), 7.52 (t, 7.8, H-3'', 5''), 7.64 (t, 8.2, H-4''); ^{13}C -NMR (125 MHz, CD_3OD): 96.0 (C-1), 151.6 (C-3), 115.0 (C-4), 32.2 (C-5), 41.5 (C-6), 79.0 (C-7), 45.4 (C-8), 43.2 (C-9), 14.3 (C-10), 172.0 (C-11), 99.8 (C-1'), 74.8 (C-2'), 77.9 (C-3'), 71.9 (C-4'), 75.7 (C-5'), 64.9 (C-6'), 131.4 (C-1''), 130.6 (C-2'', 6''), 129.7 (C-3'', 5''), 134.4 (C-4''), 167.8 (C-7''). *Veronica anagallis-aquatica* (Scrophulariaceae).⁹⁴

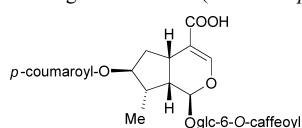
139. Aquaticoside B (6'-*O*-*p*-Hydroxybenzoyl-8-*epi*-loganic acid)

$C_{23}H_{28}O_{12}$: 496.1580; amorphous powder; $[\alpha]_D^{24} -58.1^\circ$ ($c=0.17$, MeOH); UV (MeOH): 234, 299, 331; 1H -NMR (500 MHz, CD_3OD): 5.28 (d, 5.5, H-1), 7.34 (s, H-3), 3.06 (dt, 8.2, 7.3, H-5), 1.78 (dt, 14.0, 7.0, H-6), 2.03 (m, H-6), 3.76 (m, H-7), 2.07 (m, H-8), 2.48 (dt, 8.2, 5.2, H-9), 1.03 (d, 7.3, H₃-10), 4.74 (d, 7.9, H-1'), 3.29 (dd, 9.1, 7.9, H-2'), 3.45 (overlapped, H-3', 4'), 3.64 (t, 7.0, H-5'), 4.49 (dd, 11.9, 6.4, H-6'), 4.65 (dd, 11.9, 2.4, H-6'), 7.93 (d, 8.8, H-2'', 6''), 6.86 (d, 8.8, H-3'', 5''); ^{13}C -NMR (125 MHz, CD_3OD): 95.9 (C-1), 150.9 (C-3), 116.3 (C-4), 32.2 (C-5), 41.4 (C-6), 79.1 (C-7), 45.4 (C-8), 43.2 (C-9), 14.3 (C-10), 172.0 (C-11), 99.8 (C-1'), 74.9 (C-2'), 78.0 (C-3'), 72.0 (C-4'), 75.7 (C-5'), 64.6 (C-6'), 131.2 (C-1''), 132.9 (C-2'', 6''), 116.3 (C-3'', 5''), 163.7 (C-4''), 168.0 (C-7''). *Veronica anagallis-aquatica* (Scrophulariaceae).⁹⁴

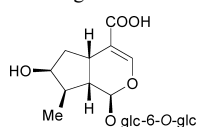
140. Inerminoside B



$C_{31}H_{46}O_{16}$: 674.2785; amorphous colorless powder; UV (?): 227.5; IR (?): 3350, 1700, 1670, 1630; 1H -NMR (270 MHz, CD_3OD): 5.43 (overlapped, H-1), 7.38 (s, H-3), 3.02 (q-like, 7.4, H-5), 1.90 (m, H-6), 2.10 (m, H-6), 3.93 (overlapped, H-7), 2.14 (m, H-8), 2.43 (m, H-9), 1.13 (d, 7.2, H₃-10), 4.76 (d, 7.6, H-1'), 3.47 (dd, 9.0, 7.6, H-2'), 3.55 (t, 9.0, H-3'), 3.28–3.43 (overlapped, 4', 5'), 3.66 (dd, 12.9, 2.0, H-6'), 3.90 (overlapped, H-6'), 5.42 (H-1''), 3.93 (s, H-2''), 3.80 (d, 9.8, H-4''), 4.24 (d, 9.8, H-4''), 4.26 (br s, H₂-5''), 6.85 (br t, 7.0, H-3'''), 2.39 (m, H-4'''), 2.24 (m, H-5'''), 5.44 (overlapped, H-7'''), 4.14 (d, 6.6, H-8'''), 1.87 (s, br s, H₃-9'''), 1.74 (s, H₃-10'''); ^{13}C -NMR (75 MHz, CD_3OD): 95.8 (C-1), 153.0 (C-3), 31.1 (C-5), 40.6 (C-6), 79.2 (C-7), 45.6 (C-8), 43.5 (C-9), 14.6 (C-10), 170.0 (C-11), 98.2 (C-1'), 77.8 (C-2'), 78.3 (C-3'), 71.9 (C-4'), 78.4 (C-5'), 63.0 (C-6'), 110.2 (C-1''), 78.9 (C-2''), 79.2 (C-3''), 75.4 (C-4''), 78.7 (C-5''), 169.5 (C-1'''), 128.8 (C-2'''), 144.0 (C-3'''), 28.1 (C-4'''), 36.9 (C-5'''), 138.5 (C-6'''), 125.7 (C-7'''), 59.4 (C-8'''), 12.5 (C-9'''), 16.2 (C-10'''). *Clerodendrum inerme* (Verbenaceae).⁹⁵

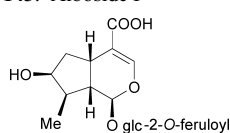
141. Agnucastoside C (7-*O*-*trans*-*p*-Coumaroyl-6'-*O*-*trans*-caffeoyl-8-*epi*-loganic acid)

$C_{34}H_{36}O_{15}$: 684.2054; amorphous powder; $[\alpha]_D^{20} -28^\circ$ ($c=0.2$, MeOH); UV (MeOH): 219 (4.51), 313 (4.54); IR (KBr): 3423, 2927, 1694, 1634, 1605, 1515, 1443, 1382, 1273, 1170, 1115, 1075, 1019, 981, 915, 857, 832; 1H -NMR (300 MHz, CD_3OD): 5.33 (d, 5.5, H-1), 7.41 (s, H-3), 3.06 (q, 8.0, H-5), 1.92 and 2.17 (each m, H₂-6), 4.90 (m, H-7), 2.42 (m, H-8), 2.48 (m, H-9), 1.08 (d, 7.0, H₃-10), 4.73 (d, 8.0, H-1'), 3.30 (m, H-2'), 3.40 (t, 6.5, H-3'), 3.39 (t, 6.5, H-4'), 3.55 (m, H-5'), 4.40 (dd, 12.0, 6.0, H-6'), 4.53 (dd, 12.0, 2.0, H-6'), 7.04 (d, 2.0, H-2''), 6.72 (d, 8.0, H-5''), 6.91 (dd, 8.0, 2.0, H-6''), 7.57 (d, 16.0, H-7''), 6.29 (d, 16.0, H-8''), 7.43 (d, 8.5, H-2'''), 6.78 (d, 8.5, H-3'''), 7.56 (d, 16.0, H-7'''), 6.29 (d, 16.0, H-8'''); ^{13}C -NMR (75 MHz, CD_3OD): 96.0 (C-1), 152.4 (C-3), 115.9 (C-4), 32.6 (C-5), 39.5 (C-6), 82.3 (C-7), 43.1 (C-8)^a, 43.4 (C-9)^b, 14.4 (C-10), 170.6 (C-11), 99.9 (C-1'), 74.8 (C-2'), 77.8 (C-3'), 71.7 (C-4'), 75.7 (C-5'), 64.0 (C-6'), 127.7 (C-1'')^b, 114.8 (C-2''), 149.6 (C-3''), 147.3 (C-4''), 116.4 (C-5''), 123.2 (C-6''), 146.4 (C-7'')^c, 115.4 (C-8''), 169.0 (C-9''), 127.2 (C-1''')^b, 131.2 (C-2'''), 116.8 (C-3'''), 161.2 (C-4'''), 146.4 (C-7'''), 115.1 (C-8'''), 169.0 (C-9'''). *Vitex agnus-castus* (Verbenaceae).⁹²

142. Loganic acid-6'-*O*-β-D-glucoside

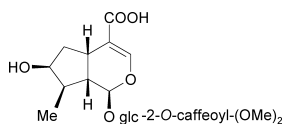
$C_{22}H_{34}O_{15}$: 538.1879; powder; mp 208–209 °C (dec); $[\alpha]_D^{25} -54.4^\circ$ ($c=0.5$, H₂O); IR (nujol): 3350, 3170, 1640; 1H -NMR (500 MHz, D₂O): 5.38 (d, 2.5, H-1), 7.00 (d, <1.0, H-3), 3.05 (ddd, 9.0, 9.0, 6.0, H-5), 2.12 (dd, 14.0, 2.5, H₂-6), 1.76 (dd, 14.0, 6.0, H₂-6), 4.17 (m, H-7), 1.91 (dq, 10.5, 7.0, H-8), 2.11 (m, H-9), 1.07 (d, 7.0, H₃-10), 4.80 (H-1'), 3.30 (dd, 9.0, 9.0, H-2'), 3.51 (t, 9.0, H-3'), 3.40 (t, 9.0, H-4'), 3.67 (m, H-5'), 3.92 (dd, 11.5, 1.5, H-6'), 3.72 (dd, 11.5, 5.5, H-6'), 4.52 (d, 8.0, H-1''), 3.33 (dd, 9.0, 8.0, H-2''), 3.48 (dd, 9.5, 9.0, H-3''), 3.40 (dd, 9.5, 9.0, H-4''), 3.45 (m, H-5''), 3.93 (dd, 12.0, 2.0, H-6''), 3.73 (dd, 12.0, 5.5, H-6''); ^{13}C -NMR (125 MHz, D₂O): 98.6 (C-1), 147.7 (C-3), 121.8 (C-4), 33.4 (C-5), 43.6 (C-6), 77.3 (C-7), 42.6 (C-8), 48.2 (C-9), 14.9 (C-10), 178.6 (C-11), 101.2 (C-1'), 75.2 (C-2'), 78.3 (C-3'), 72.3 (C-4'), 78.1 (C-5'), 71.6 (C-6'), 105.8 (C-1''), 75.9 (C-2''), 78.6 (C-3''), 72.5 (C-4''), 78.8 (C-5''), 63.6 (C-6''). *Dipsacus asperoides* (Dipsacaceae).⁸⁷

143. Alboside I



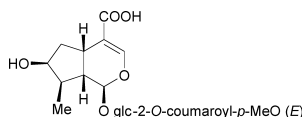
$C_{26}H_{32}O_{13}$: 552.1842; amorphous solid; $[\alpha]_D -46.7^\circ$ ($c=2.4$, H₂O) UV (MeOH): 208, 235, 325; IR (KBr): 3453, 1690, 1668, 1650, 1630, 1520, 1077, 520; 1H -NMR (400 MHz, $CDCl_3$): 5.14 (d, 6.0, H-1), 7.35 (d, 1.5, H-3), 2.99 (dddd, 9.5, 8.5, 8.0, 1.7, H-5), 2.22 (ddd, 13.5, 8.0, 1.7, H-6), 1.74 (ddd, 13.5, 8.5, 4.2, H-6), 3.45 (ddd, 5.5, 4.5, 1.5, H-7), 2.08 (dq, 9.2, 7.0, 4.5, H-8), 1.95 (ddd, 9.2, 9.0, 6.0, H-9), 1.00 (d, 7.0, H₃-10), 4.50 (d, 8.0, H-1'), 5.01 (t, 8.0, H-2'), 3.23–3.76 (m, H-3', 4', 5', 6'), 7.12 (d, 1.5, H-2''), 6.95 (d, 8.0, H-5''), 6.29 (dd, 8.0, 1.5, H-6''), 7.55 (d, 16.0, H-7''), 6.34 (d, 16.0, H-8''), 3.81 (s, MeO-3''); ^{13}C -NMR (100 MHz, $CDCl_3$): 98.9 (C-1), 150.2 (C-3), 112.4 (C-4), 31.6 (C-5), 39.1 (C-6), 77.0 (C-7), 39.3 (C-8), 45.5 (C-9), 13.7 (C-10), 168.6 (C-11), 96.0 (C-1'), 73.4 (C-2'), 76.5 (C-3'), 70.3 (C-4'), 77.4 (C-5'), 61.4 (C-6'), 127.1 (C-1''), 115.5 (C-2''), 148.1 (C-3''), 146.9 (C-4''), 121.3 (C-5''), 112.2 (C-6''), 144.8 (C-7''), 114.5 (C-8''), 166.3 (C-9''), 55.9 (MeO-3'). *Chiococca alba* (Rubiaceae).⁸⁹

144. Alboside II

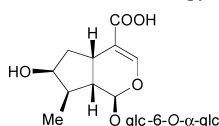


$C_{27}H_{34}O_{13}$; 566.1999; amorphous solid; $[\alpha]_D^{20} -30.7^\circ$ ($c=0.9$, MeOH); UV (MeOH): 208, 238, 330; IR (KBr): 3465, 1690, 1670, 1653, 1630, 1515, 1455, 1262, 1169, 1068, 1020; 1H -NMR (400 MHz, $CDCl_3$): 5.15 (d, 5.4, H-1), 7.20 (d, 0.8, H-3), 2.98 (m, H-5), 1.60–1.78 (m, H-6), 2.08–2.15 (m, H-6), 3.68 (m, H-7), 1.60–2.00 (m, H-8), 2.06–2.49 (m, H-9), 1.00 (d, 6.5, H_3 -10), 4.49 (d, 8.0, H-1'), 5.08 (t, 9.0, H-2'), 3.20–3.78 (m, H-3', 4', 5', 6'), 6.96 (d, 1.5, H-2''), 7.35 (d, 8.0, H-5''), 7.12 (dd, 8.0, 1.5, H-6''), 7.65 (d, 16.0, H-7''), 6.58 (d, 16.0, H-8''), 3.79, 3.78 (each s, $2 \times MeO$); ^{13}C -NMR (100 MHz, $CDCl_3$): 98.8 (C-1), 150.5 (C-3), 111.9 (C-4), 31.5 (C-5), 39.2 (C-6), 76.4 (C-7), 39.5 (C-8), 45.3 (C-9), 13.6 (C-10), 168.2 (C-11), 95.9 (C-1'), 73.2 (C-2'), 76.8 (C-3'), 70.2 (C-4'), 77.3 (C-5'), 61.3 (C-6'), 126.7 (C-1''), 110.3 (C-2''), 151.0 (C-3''), 149.0 (C-4''), 111.5 (C-5''), 123.1 (C-6''), 144.8 (C-7''), 115.8 (C-8''), 166.3 (C-9''), 55.3, 55.6 ($2 \times MeO$). *Chiococca alba* (Rubiaceae).⁸⁹⁾

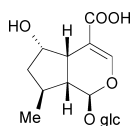
145. Alboside III



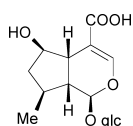
$C_{26}H_{32}O_{12}$; 536.1893; amorphous solid; $[\alpha]_D^{20} -30.7^\circ$ ($c=0.9$, MeOH); UV (MeOH): 208, 235, 338; IR (KBr): 3465, 1690, 1673, 1630, 1515, 1455, 1262, 1169, 1068, 1020; 1H -NMR (400 MHz, $CDCl_3$): 5.37 (d, 5.6, H-1), 7.28 (d, 1.5, H-3), 2.89–2.99 (m, H-5), 1.56–1.78 (m, H-6), 2.16–2.26 (m, H-6), 3.50 (m, H-7), 1.60 (m, H-8), 2.90–2.93 (m, H-9), 1.01 (d, 7.0, H_3 -10), 4.49 (d, 8.0, H-1'), 5.09 (t, 8.0, H-2'), 3.33–3.76 (m, H-3', 4', 5', 6'), 7.46 (dd, 8.0, 2.0, H-2'', 6''), 6.81 (dd, 8.0, 2.0, H-3'', 5''), 7.50 (d, 16.0, H-7''), 6.50 (d, 16.0, H-8''), 3.78 (s, MeO); ^{13}C -NMR (100 MHz, $CDCl_3$): 98.8 (C-1), 150.5 (C-3), 111.9 (C-4), 31.5 (C-5), 39.2 (C-6), 76.4 (C-7), 39.5 (C-8), 45.3 (C-9), 13.6 (C-10), 168.2 (C-11), 95.9 (C-1'), 73.2 (C-2'), 76.8 (C-3'), 70.2 (C-4'), 77.3 (C-5'), 61.3 (C-6'), 126.9 (C-1''), 130.2 (C-2'', 6''), 114.4 (C-3'', 5''), 161.2 (C-4''), 144.3 (C-7''), 115.6 (C-8''), 166.2 (C-9''), 55.7 (MeO). *Chiococca alba* (Rubiaceae).⁸⁹⁾

146. 6'-O- α -D-Glucopyranosylloganic acid

$C_{22}H_{34}O_{15}$; 538.1897; white powder; IR (KBr): 3415, 1686, 1638; 1H -NMR (500 MHz, CD_3OD): 5.17 (d, 5.0, H-1), 7.38 (d, 1.0, H-3), 3.10 (qd, 8.0, 1.0, H-5), 1.65 (ddd, 14.0, 8.0, 5.0, H-6), 2.24 (ddd, 14.0, 8.0, 1.5, H-6), 4.17 (td, 5.0, 1.5, H-7), 1.88 (dq, 8.0, 7.0, 5.0, H-8), 2.00 (td, 8.0, 5.0, H-9), 1.09 (d, 7.0, H_3 -10), 4.68 (d, 8.0, H-1'), 3.22 (dd, 9.0, 8.0, H-2'), 3.34–3.40 (m, H-3', 4'), 3.53 (ddd, 9.0, 5.5, 2.0, H-5'), 3.77 (dd, 11.0, 2.0, H-6'), 3.92 (dd, 11.0, 5.0, H-6'), 4.84 (d, 3.5, H-1''), 3.37 (dd, 9.5, 3.5, H-2''), 3.62 (dd, 9.5, 9.0, H-3''), 3.30 (t, 9.0, H-4''), 3.63 (ddd, 9.0, 5.0, 2.0, H-5''), 3.67 (dd, 11.0, 5.0, H-6''), 3.79 (dd, 11.0, 2.0, H-6''); ^{13}C -NMR (125 MHz, CD_3OD): 98.3 (C-1), 152.0 (C-3), 114.3 (C-4), 32.4 (C-5), 42.7 (C-6), 75.0 (C-7), 42.3 (C-8), 46.6 (C-9), 13.7 (C-10), 171.0 (C-11), 100.4 (C-1'), 74.7 (C-2'), 78.1 (C-3'), 71.6 (C-4')^a, 76.7 (C-5'), 67.9 (C-6'), 100.1 (C-1''), 73.6 (C-2'')^b, 75.3 (C-3''), 71.7 (C-4'')^a, 73.7 (C-5'')^b, 62.6 (C-6''). *Alangium lamarckii* (Alangiaceae).⁹⁰⁾

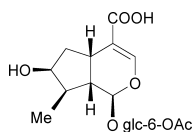
147. 6 α -Dihydrocornic acid

$C_{16}H_{24}O_{10}$; 376.1369; yellow amorphous powder; $[\alpha]_D^{28} -67.9^\circ$ ($c=1.34$, MeOH); 1H -NMR (500 MHz, CD_3OD): 5.21 (d, 9.0, H-1), 7.62 (s, H-3), 2.82 (dd, 9.0, 4.0, H-5), 4.47 (t, 4.0, H-6), 1.38 (ddd, 13.0, 10.0, 4.0, H_a -7), 1.92 (dd, 13.0, 8.0, H_b -7), 2.30 (m, H-8), 1.70 (dt, 8.0, 4.0, H-9), 1.12 (d, 8.0, H_3 -10), 4.70 (d, 8.0, H-1'), 3.24 (dd, 9.0, 8.0, H-2'), 3.40 (t, 9.0, H-3'), 3.31 (m, H-4'), 3.29 (m, H-5'), 3.67 (dd, 12.0, 6.0, H-6'), 3.86 (dd, 12.0, 2.0, H-6'); ^{13}C -NMR (125 MHz, CD_3OD): 101.2 (C-1), 155.9 (C-3), 107.4 (C-4), 43.5 (C-5), 75.1 (C-6), 43.2 (C-7), 35.2 (C-8), 47.0 (C-9), 21.9 (C-10), 171.1 (C-11), 100.4 (C-1'), 74.9 (C-2'), 78.1 (C-3'), 71.7 (C-4'), 78.5 (C-5'), 63.0 (C-6'). *Cornus capitata* (Cornaceae).⁹¹⁾

148. 6 β -Dihydrocornic acid

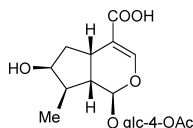
$C_{16}H_{24}O_{10}$; 376.1369; yellow amorphous powder; $[\alpha]_D^{28} -271.6^\circ$ ($c=0.18$ MeOH); 1H -NMR (500 MHz, CD_3OD): 5.25 (d, 5.0, H-1), 7.41 (s, H-3), 2.79 (t, 6.0, H-5), 4.05 (m, H-6), 1.25 (m, H_a -7), 2.17 (m, H_b -7), 1.96 (q, 7.0, H-8), 2.03 (dt, 7.0, 5.0, H-9), 1.15 (d, 7.0, H_3 -10), 4.65 (d, 8.0, H-1'), 3.20 (t, 8.0, H-2'), 3.37 (m, H-3'), 3.30 (m, H-5'), 3.67 (dd, 12.0, 6.0, H-6'), 3.89 (dd, 12.0, 2.0, H-6'); ^{13}C -NMR (125 MHz, CD_3OD): 97.5 (C-1), 153.6 (C-3), 110.8 (C-4), 43.7 (C-5), 78.8 (C-6), 42.7 (C-7), 34.3 (C-8), 47.9 (C-9), 21.1 (C-10), 171.0 (C-11), 100.2 (C-1'), 74.8 (C-2'), 78.1 (C-3'), 71.7 (C-4'), 78.4 (C-5'), 62.8 (C-6'). *Cornus capitata* (Cornaceae).⁹¹⁾

149. 6'-O-Acetylloganic acid



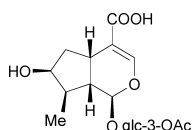
$C_{18}H_{26}O_{11}$; 418.1475; white amorphous solid; $[\alpha]_D^{20} -85.1^\circ$ ($c=0.07$, MeOH); UV (MeOH): 235; IR (KBr): 3422, 1705, 1685, 1636, 1376, 1074; 1H -NMR (400 MHz, D_2O): 5.33 (d, 3.6, H-1), 7.45 (s, H-3), 3.06 (dd, 8.0, 7.6, H-5), 2.19 and 1.76 (each m, H_2 -6), 4.15 (m, H-7), 1.90 (m, H-8), 2.10 (m, H-9), 1.06 (d, 7.2, H_3 -10), 4.81 (d, 8.0, H-1'), 3.29 (dd, 9.2, 8.0, H-2'), 3.51 (t, 9.2, H-3'), 3.47 (dd, 9.6, 9.2, H-4'), 3.68 (m, H-5'), 4.42 (dd, 12.4, 2.4, H-6'), 4.33 (dd, 12.4, 6.0, H-6'), 2.12 (s, Ac); ^{13}C -NMR (100 MHz, D_2O): 99.5 (C-1), 154.0 (C-3), 115.6 (C-4), 32.5 (C-5), 43.0 (C-6), 77.1 (C-7), 42.8 (C-8), 47.6 (C-9), 14.7 (C-10), 174.0 (C-11), 101.5 (C-1'), 75.3 (C-2'), 78.1 (C-3'), 72.1 (C-4'), 76.4 (C-5'), 65.7 (C-6'), 22.9, 176.8 (Ac). *Strychnos nux-vomica* (Loganiaceae).⁹³⁾

150. 4'-O-Acetylloganic acid

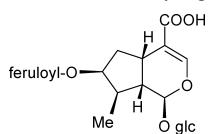


$C_{18}H_{26}O_{11}$; 418.1475; white amorphous solid; $[\alpha]_D^{20} -67.6^\circ$ ($c=0.07$, MeOH); IR (KBr): 3423, 1707, 1685, 1637, 1376, 1079; 1H -NMR (400 MHz, D_2O): 5.41 (d, 3.6, H-1), 7.40 (s, H-3), 3.04 (dd, 8.0, 7.6, H-5), 2.21 and 1.77 (each m, H_2 -6), 4.15 (m, H-7), 1.92 (m, H-8), 2.12 (m, H-9), 1.07 (d, 7.2, H_3 -10), 4.85 (d, 8.4, H-1'), 3.19 (dd, 9.2, 8.4, H-2'), 3.71 (m, H-3'), 4.81 (t, 9.2, H-4'), 3.69 (m, H-5'), 3.73 (dd, 12.4, 1.6, H-6'), 3.39 (dd, 12.4, 4.8, H-6'), 2.17 (s, Ac); ^{13}C -NMR (100 MHz, D_2O): 99.4 (C-1), 153.4 (C-3), 116.2 (C-4), 32.4 (C-5), 42.9 (C-6), 77.1 (C-7), 42.7 (C-8), 47.6 (C-9), 14.7 (C-10), 174.3 (C-11), 101.2 (C-1'), 75.2 (C-2'), 76.2 (C-3'), 73.5 (C-4'), 76.7 (C-5'), 62.8 (C-6'), 23.1, 176.4 (Ac). *Strychnos nux-vomica* (Loganiaceae).⁹³⁾

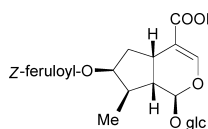
151. 3'-O-Acetylloganic acid



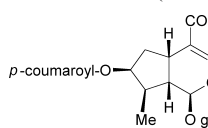
$C_{18}H_{26}O_{11}$; 418.1475; white amorphous solid; $[\alpha]_D^{20} -70.1^\circ$ ($c=0.06$, MeOH); UV (MeOH): 235; IR (KBr): 3421, 1706, 1685, 1636, 1376, 1077; 1H -NMR (400 MHz, D_2O): 5.42 (d, 3.6, H-1), 7.40 (s, H-3), 3.04 (dd, 8.4, 7.2, H-5), 2.20 and 1.77 (each m, H_2 -6), 4.15 (m, H-7), 1.92 (m, H-8), 2.12 (m, H-9), 1.07 (d, 7.2, H_3 -10), 4.90 (d, 8.4, H-1'), 3.29 (dd, 9.2, 8.4, H-2'), 4.99 (t, 9.2, H-3'), 3.60 (t, 9.2, H-4'), 3.59 (m, H-5'), 3.92 (dd, 12.4, 1.6, H-6'), 3.75 (dd, 12.4, 6.0, H-6'), 2.17 (s, Ac); ^{13}C -NMR (100 MHz, D_2O): 99.3 (C-1), 153.4 (C-3), 116.2 (C-4), 32.5 (C-5), 42.9 (C-6), 77.1 (C-7), 42.6 (C-8), 47.6 (C-9), 14.6 (C-10), 174.3 (C-11), 101.1 (C-1'), 73.7 (C-2'), 79.8 (C-3'), 70.5 (C-4'), 78.7 (C-5'), 63.1 (C-6'), 23.0, 175.9 (Ac). *Strychnos nux-vomica* (Loganiaceae).⁹³⁾

152. 7-*O*-*E*-Feruloylloganic acid

$C_{26}H_{32}O_{13}$; 552.1842; amorphous powder; $[\alpha]_D^{25} -30.5^\circ$ ($c=0.85$, MeOH); UV (MeOH): 222 sh (4.14), 235 (4.17), 305 sh (4.07), 325 (4.13); IR (KBr): 3300, 1670, 1625, 1590, 1510, 1425, 1270, 1150, 1075; 1H -NMR (400 MHz, CD_3OD): 5.29 (d, 5.0, H-1), 7.46 (d, 1.0, H-3), 3.15 (br q, 8.0, H-5), 1.81 (ddd, 14.0, 8.0, 5.0, $H_{\beta-6}$), 2.36 (ddd, 14.0, 8.0, 1.0, $H_{\alpha-6}$), 5.28 (brt, 5.0, H-7), 2.21 (m, H-8), 2.10 (dt, 8.0, 5.0, H-9), 1.10 (d, 7.0, H_3-10), 4.69 (d, 8.0, H-1'), 3.22 (dd, 9.0, 8.0, H-2'), 3.39 (t, 9.0, H-3'), 3.68 (dd, 12.0, 6.0, H-6'), 3.92 (dd, 12.0, 2.0, H-6'), 7.21 (d, 2.0, H-2''), 6.81 (d, 8.0, H-5''), 7.08 (dd, 8.0, 2.0, H-6''), 7.61 (d, 16.0, H-7''), 6.38 (d, 16.0, H-8''), 3.89 (MeO-3''); ^{13}C -NMR (100 MHz, CD_3OD): 97.7 (C-1), 152.7 (C-3), 113.3 (C-4), 32.9 (C-5), 40.5 (C-6), 78.5 (C-7), 41.2 (C-8), 47.2 (C-9), 13.9 (C-10), 170.8 (C-11), 100.3 (C-1'), 74.8 (C-2'), 78.5 (C-3'), 71.7 (C-4'), 78.1 (C-5'), 62.8 (C-6'), 127.4 (C-1''), 111.8 (C-2''), 150.7 (C-3''), 149.4 (C-4''), 114.9 (C-5''), 124.2 (C-6''), 146.8 (C-7''), 116.5 (C-8''), 168.9 (C-9''), 56.5 (MeO). *Alangium platanifolium* var. *trilobum* (Alangiaceae).⁹⁶

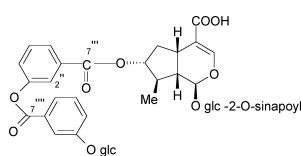
153. 7-*O*-*Z*-Feruloylloganic acid

$C_{26}H_{32}O_{13}$; 552.1842; amorphous powder; $[\alpha]_D^{25} -49.4^\circ$ ($c=0.57$, MeOH); UV (MeOH): 224 sh (4.21), 232 (4.23), 302 sh (3.94), 324 (4.05); 1H -NMR (400 MHz, CD_3OD): 5.26 (d, 5.0, H-1), 7.43 (d, 1.0, H-3), 3.06 (br q, 8.0, H-5), 1.80 (ddd, 14.0, 8.0, 5.0, $H_{\beta-6}$), 2.23 (ddd, 13.0, 8.0, 1.0, $H_{\alpha-6}$), 5.21 (brt, 5.0, H-7), 2.15 (m, H-8), 1.98 (dt, 8.0, 5.0, H-9), 1.03 (d, 7.0, H_3-10), 4.66 (d, 8.0, H-1'), 3.21 (dd, 9.0, 8.0, H-2'), 3.38 (t, 9.0, H-3'), 3.67 (dd, 12.0, 6.0, H-6'), 3.90 (dd, 12.0, 2.0, H-6'), 7.68 (d, 2.0, H-2''), 6.77 (d, 8.0, H-5''), 7.08 (dd, 8.0, 2.0, H-6''), 6.88 (d, 13.0, H-7''), 5.80 (d, 13.0, H-8''), 3.87 (s, MeO-3''); ^{13}C -NMR (100 MHz, CD_3OD): 97.6 (C-1), 152.7 (C-3), 113.4 (C-4), 32.7 (C-5), 40.5 (C-6), 78.4 (C-7), 41.0 (C-8), 47.1 (C-9), 13.8 (C-10), 170.7 (C-11), 100.2 (C-1'), 74.8 (C-2'), 78.4 (C-3'), 71.7 (C-4'), 78.1 (C-5'), 62.8 (C-6'), 128.4 (C-1''), 114.9 (C-2''), 149.4 (C-3''), 148.4 (C-4''), 115.8 (C-5''), 126.3 (C-6''), 145.4 (C-7''), 117.2 (C-8''), 168.1 (C-9''), 56.5 (MeO). *Alangium platanifolium* var. *trilobum* (Alangiaceae).⁹⁶

154. Linearoside (7-*O*-Coumaroylloganic acid)

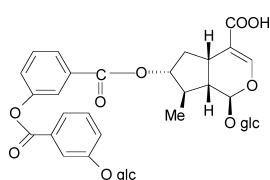
$C_{25}H_{30}O_{12}$; 522.1737; $[\alpha]_D -10.0^\circ$ ($c=0.96$, MeOH); UV (MeOH): 229 (4.07), 313 (4.17); 1H -NMR (200 MHz, CD_3OD): 5.26 (d, 4.9, H-1, 7), 7.44 (s, H-3), 1.74—1.88 (m, $H_{\alpha-6}$), 2.02—2.13 (m, $H_{\beta-6}$), 2.17—2.24 (m, H-8), 2.30—2.40 (m, H-9), 1.09 (d, 6.6, H_3-10), 4.68 (d, 7.5, H-1'), 3.13—3.40 (m, H-2', 3', 4', 5'), 3.62—3.70 (m, H-6'), 3.91 (d, 11.7, H-6''), 7.47 (d, 8.0, H-2''), 6.81 (d, 8.0, H-5''), 7.61 (d, 15.8, H-7''), 6.33 (d, 15.9, H-8''), ^{13}C -NMR (50 MHz, CD_3OD): 97.4 (C-1), 151.2 (C-3), 115.0 (C-4), 33.1 (C-5), 40.6 (C-6), 78.6 (C-7), 41.1 (C-8), 47.2 (C-9), 13.8 (C-10), 172.9 (C-11), 100.1 (C-1'), 74.8 (C-2'), 78.0 (C-3'), 71.6 (C-4'), 78.4 (C-5'), 62.8 (C-6'), 127.1 (C-1''), 131.2 (C-2''), 6''), 116.8 (C-3''), 161.3 (C-4''), 146.5 (C-7''), 115.4 (C-8''), 168.9 (C-9''). *Gentiana linearis* (Gentianaceae).⁹⁷

155. Senburiside III

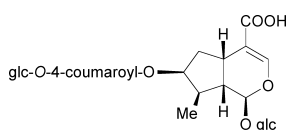


$C_{47}H_{52}O_{23}$; 984.2898; white amorphous powder (MeOH-H₂O); $[\alpha]_D^{25} -60.0^\circ$ ($c=1.03$, MeOH); UV (MeOH): 234, 330; IR (KBr): 3420, 2925, 1715, 1635, 1516, 1456, 1262, 1074, 753; 1H -NMR (400 MHz, CD_3OD): 5.68 (br s, H-1), 7.52 (s, H-3), 3.09 (m, H-5), 2.62 (m, H-6), 2.18 (m, H-6), 5.03 (m, H-7), 2.18 (m, H-8), 2.18 (m, H-9), 1.41 (d, 6.4, H_3-10), 5.07 (m, H-1'), 5.00 (m, H-2'), 3.83 (m, H-3'), 3.60 (m, H-4', 5'), 4.10 (m, H-6'), 3.92 (m, H-6''), 7.96 (s, H-2''), 7.66 (d, 7.6, H-4''), 7.69 (dd, 7.6, 7.6, H-5''), 8.03 (d, 7.6, H-6''), 8.08 (s, H-2'''), 7.62 (d, 7.6, H-4'''), 7.63 (dd, 7.6, 7.6, H-5'''), 8.06 (d, 7.6, H-6'''), 7.06 (s, H-2''', 6''), 7.76 (d, 16.0, H-7''), 6.50 (d, 16.0, H-8''), 5.23 (d, 6.8, H-1'''), 3.70 (m, H-2''', 3'''), 3.67 (m, H-4'''), 3.60 (m, H-5'''), 4.10 (m, H-6'''), 3.92 (m, H-6'''), 4.05 (s, 2×OMe); ^{13}C -NMR (100 MHz, CD_3OD): 95.8 (C-1), 151.5 (C-3), 113.6 (C-4), 32.7 (C-5), 37.8 (C-6), 84.1 (C-7), 43.1 (C-8), 49.0 (C-9), 18.3 (C-10), 170.5 (C-11), 98.3 (C-1'), 75.0 (C-2'), 76.2 (C-3'), 71.9 (C-4'), 78.8 (C-5'), 62.9 (C-6'), 127.1 (C-1''), 107.2 (C-2''), 6''), 149.6 (C-3''), 139.6 (C-4''), 147.6 (C-7''), 116.0 (C-8''), 168.3 (C-9''), 57.1 (2×OMe), 132.0 (C-1'''), 124.1 (C-2'''), 152.7 (C-3'''), 127.9 (C-4'''), 131.0 (C-5'''), 127.9 (C-6'''), 167.1 (C-7'''), 133.4 (C-1'''), 119.5 (C-2'''), 159.5 (C-3'''), 123.7 (C-4'''), 131.3 (C-5'''), 125.4 (C-6'''), 102.6 (C-1'''), 75.2 (C-2'''), 78.2 (C-3'''), 71.6 (C-4'''), 78.5 (C-5'''), 62.7 (C-6'''). *Swertia franchetiana* (Gentianaceae).⁹⁸

156. Senburiside IV

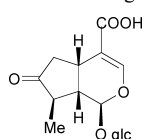


$C_{36}H_{42}O_{19}$; 778.2319; white amorphous powder (MeOH-H₂O); $[\alpha]_D^{25} -60.2^\circ$ ($c=1.14$, MeOH); UV (MeOH): 234, 286; IR (KBr): 3419, 2927, 1715, 1645, 1540, 1488, 1263, 1074, 753; 1H -NMR (400 MHz, CD_3OD): 5.69 (d, 3.6, H-1), 7.62 (s, H-3), 3.12 (m, H-5), 2.75 (m, H-6), 2.19 (m, H-6), 5.15 (m, H-7), 2.19 (m, H-8, 9), 1.43 (d, 6.8, H_3-10), 4.87 (d, 8.0, H-1'), 3.38 (t, 8.0, H-2'), 3.50 (m, H-3', 4', 5', 6'), 4.11 (m, H-6'), 8.02 (s, H-2''), 7.73 (d, 8.0, H-4''), 7.76 (dd, 8.0, 7.6, H-5''), 8.11 (d, 7.6, H-6''), 8.10 (s, H-2'''), 7.65 (d, 8.0, H-4'''), 7.69 (dd, 8.0, 7.6, H-5'''), 8.05 (d, 7.6, H-6'''), 5.20 (d, 7.2, H-1'''), 3.50 (H-2''', 3''', 4''', 5''', 6'''), 4.11 (H-6'''); ^{13}C -NMR (100 MHz, CD_3OD): 96.5 (C-1), 152.1 (C-3), 113.6 (C-4), 33.0 (C-5), 38.5 (C-6), 84.0 (C-7), 43.3 (C-8), 49.0 (C-9), 18.6 (C-10), 167.2 (C-11), 100.4 (C-1'), 75.0 (C-2'), 78.2 (C-3'), 71.8 (C-4'), 78.6 (C-5'), 63.0 (C-6'), 132.1 (C-1''), 124.2 (C-2''), 152.7 (C-3''), 128.0 (C-4''), 131.1 (C-5''), 128.4 (C-6''), 166.4 (C-7''), 135.5 (C-1'''), 119.6 (C-2'''), 159.6 (C-3'''), 123.8 (C-4'''), 131.3 (C-5'''), 125.4 (C-6'''), 166.4 (C-7'''), 102.7 (C-1'''), 75.2 (C-2'''), 78.2 (C-3'''), 71.6 (C-4'''), 78.6 (C-5'''), 62.8 (C-6'''). *Swertia franchetiana* (Gentianaceae).⁹⁸

157. 4'-*O*-Glucoside of linearoside (7-*O*-(4'-*O*-Glucosyl)-coumaroylloganic acid)

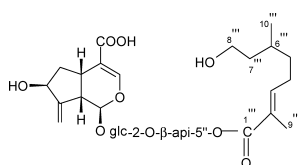
$C_{31}H_{40}O_{17}$; 684.2265; $[\alpha]_D -2.0^\circ$ ($c=0.90$, MeOH); UV (MeOH): 211 (3.78), 226 (3.98), 296 (4.07); 1H -NMR (200 MHz, CD_3OD): 5.25 (m, H-1, 7), 7.33 (s, H-3), 1.74—1.88 (m, $H_{\alpha-6}$), 2.06—2.13 (m, $H_{\beta-6}$), 2.17—2.24 (m, H-8), 2.30—2.40 (m, H-9), 1.10 (d, 6.8, H_3-10), 4.68 (d, 7.6, H-1'), 3.13—3.50 (m, H-2'—5', 2—5''), 3.59 (m, H-6', 6''), 3.90 (d, 7.6, H-6', 6''), 7.58 (d, 9.0, H-2''), 7.12 (d, 8.8, H-3''), 7.64 (d, 15.8, H-7''), 6.42 (d, 15.8, H-8''), 4.97 (d, 7.6, H-1'''); ^{13}C -NMR (50 MHz, CD_3OD): 97.6 (C-1), 152.7 (C-3), 113.3 (C-4), 32.8 (C-5), 40.5 (C-6), 78.6 (C-7), 41.1 (C-8), 47.1 (C-9), 13.8 (C-10), 170.8 (C-11), 100.2 (C-1'), 74.8 (C-2'), 77.9 (C-3'), 71.6 (C-4'), 78.3 (C-5'), 62.8 (C-6'). 129.9 (C-1''), 130.9 (C-2''), 118.0 (C-3''), 160.9 (C-4''), 145.9 (C-7''), 117.2 (C-8''), 168.6 (C-9''), 101.9 (C-1'''), 74.8 (C-2'''), 78.0 (C-3'''), 71.3 (C-4'''), 78.3 (C-5'''), 62.5 (C-6'''). *Gentiana linearis* (Gentianaceae).⁹⁷

158. 7-Ketologanic acid



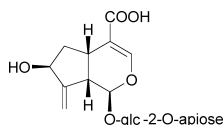
$C_{16}H_{22}O_{10}$; 374.1213; $[\alpha]_D^{21} -107.0^\circ$ ($c=1.2$, MeOH); 1H -NMR (250 MHz, D_2O): 5.42 (d, 2.5, H-1), 7.49 (d, 1.0, H-3), 3.20—3.50 (m, H-5, 2', 3', 4', 5'), 2.69 (dd, 20.0, 8.0, H-6), 2.57 (brd, 20.0, H-6), 2.21 (brdq, 11.0, 7.0, H-8), 2.44 (ddd, 11.0, 7.5, 2.5, H-9), 1.09 (d, 7.0, H_3-10), 4.78 (d, 8.0, H-1'), 3.88 (dd, 12.0, 2.0, H-6'), 3.67 (dd, 12.0, 5.5, H-6''); ^{13}C -NMR (63 MHz, D_2O): 95.4 (C-1), 153.3 (C-3), 110.7 (C-4), 27.1 (C-5), 44.5 (C-6), 215.9 (C-7), 42.9 (C-8), 45.3 (C-9), 13.0 (C-10), 99.4 (C-1'), 73.4 (C-2'), 76.4 (C-3'), 70.4 (C-4'), 77.2 (C-5'), 61.5 (C-6'). *Picconia excelsa* (Oleaceae).⁸⁸

159. Inerminoside C



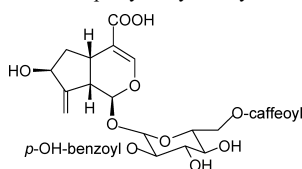
$C_{31}H_{46}O_{16}$: 674.2785; amorphous powder; UV (MeOH): 227.5; IR (?): 3430, 1700, 1637; 1H -NMR (300 MHz, CD_3OD): 5.30 (d, 5.6, H-1), 7.32 (s, H-3), 3.17 (m, H-5), 2.06 (m, H-6), 1.98 (m, H-6), 4.42 (m, H-7), 2.88 (m, H-9), 5.46 and 5.39 (each brs, H_2 -10), 4.78 (d, 7.6, H-1'), 3.47 (dd, 9.2, 7.6, H-2'), 3.55 (dd, 9.2, 9.0, H-3'), ca. 3.32 (H-4'), 3.35 (m, H-5'), ca. 3.66 (H-6'), 3.90 (brd, 11.7, H-6'), 5.47 (brs, H-1''), 3.94 (brs, H-2''), 3.81 and 4.24 (each d, 9.8, H_2 -4''), 4.27 (brs, H_2 -5''), 6.86 (dt, 7.5, 1.2, H-3''), 2.27 (m, H_2 -4''), 1.34 and 1.50 (each m, H_2 -5''), 1.68 (m, H-6''), 1.40 and 1.70 (each m, H_2 -7''), ca. 3.65 (H_2 -8''), 1.87 (s, H_3 -9''), 0.98 (d, 6.5, H_3 -10''); ^{13}C -NMR (75.5 MHz, CD_3OD): 96.1 (C-1), 151.6 (C-3), 33.2 (C-5), 41.3 (C-6), 74.0 (C-7), 153.8 (C-8), 45.1 (C-9), 113.6 (C-10), 173.3 (C-11), 98.3 (C-1'), 78.0 (C-2'), 78.3 (C-3'), 71.8 (C-4'), 78.5 (C-5'), 62.8 (C-6'), 110.2 (C-1''), 78.9 (C-2''), 79.2 (C-3''), 75.4 (C-4''), 68.6 (C-5''), 169.5 (C-1'''), 128.4 (C-2'''), 144.7 (C-3'''), 27.3 (C-4'''), 36.9 (C-5'''), 30.6 (C-6'''), 40.6 (C-7'''), 61.0 (C-8'''), 12.5 (C-9'''), 19.8 (C-10'''). *Clerodendrum inerme* (Verbenaceae).⁹⁹

160. 2'-O-Apiosylgardoside



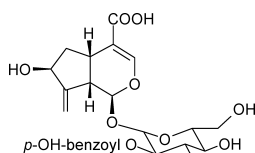
$C_{21}H_{30}O_{14}$: 506.1635; amorphous, 1H -NMR (500 MHz, D_2O): 5.70 (d, 2.7, H-1), 7.20 (d, 1.5, H-3), 3.09 (dddd, 7.2, 6.8, 2.2, 1.5, H-5), 2.33 (ddd, 12.8, 6.9, 2.2, H-6), 1.86 (ddd, 12.8, 9.4, 6.8, H-6), 4.55 (dddd, 9.6, 7.1, 2.5, 2.5, 2.3, H-7), 3.24 (dddd, 7.2, 2.7, 2.5, 2.5, H-9), 5.41 (dd, 2.5, 2.5, H_a -10), 5.40 (dd, 2.5, 2.5, H_b -10), 4.90 (d, 8.1, H-1'), 3.48 (dd, 9.6, 8.1, H-2'), 3.69 (t-like, ca. 9.5, H-3'), 3.50 (dd, 10.0, 9.1, H-4'), 3.55 (ddd, 10.0, 5.8, 2.1, H-5'), 4.00 (dd, 12.4, 2.1, H-6'), 3.80 (dd, 12.4, 5.8, H-6'), 5.39 (d, 2.4, H-1''), 4.04 (d, 2.4, H-2''), 3.97 (d, 10.0, H_a -4''), 3.87 (d, 10.2, H_b -4''), 3.66 (s, H_2 -5''); ^{13}C -NMR (125 MHz, D_2O): 95.8 (C-1), 148.7 (C-3), 116.4 (C-4), 30.3 (C-5), 38.6 (C-6), 73.2 (C-7), 152.1 (C-8), 44.4 (C-9), 111.9 (C-10), 175.0 (C-11), 97.7 (C-1'), 78.1 (C-2'), 77.0 (C-3'), 70.3 (C-4'), 77.0 (C-5'), 61.5 (C-6'), 110.0 (C-1''), 78.4 (C-2''), 80.5 (C-3''), 74.5 (C-4''), 64.6 (C-5''). *Verbenoxylum reitzii* (Verbenaceae).¹⁰⁰

161. 2'-O-p-Hydroxybenzoyl-6'-O-trans-caffeoylgardoside



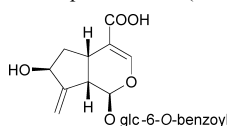
$C_{32}H_{52}O_{15}$: 656.1741; pale yellow amorphous powder; mp 191—192 °C; $[\alpha]_D^{25}$ -32.6° ($c=0.5$, MeOH); UV (MeOH): 250 (4.33), 330 (4.17); IR (KBr): 3406, 1698, 1633, 1604, 1516, 1449, 1272, 1168, 1113, 985, 852; 1H -NMR (500 MHz, CD_3OD): 5.24 (d, 4.5, H-1), 7.09 (brs, H-3), 2.95 (m, H-5), 1.94 (m, H-6), 1.83 (m, H-6), 4.26 (brs, H-7), 2.86 (brs, H-9), 5.22 (brs, H-10), 5.25 (brs, H-10), 4.99 (d, 8.0, H-1'), 4.95 (dd, 9.0, 8.0, H-2'), 3.71 (dd, 9.0, 9.0, H-3'), 3.51 (dd, 9.5, 9.0, H-4'), 3.67 (m, H-5') 4.42 (dd, 12.0, 6.0, H-6'), 4.53 (dd, 11.5, 2.0, H-6'), 7.85 (d, 8.5, H-2''), 6.80 (d, 8.5, H-3''), 6.30 (d, 16.0, H-8''), 7.58 (d, 16.0, H-7''), 7.05 (d, 2.0, H-2''), 6.78 (d, 8.5, H-5''), 6.95 (dd, 8.5, 2.0, H-6''); ^{13}C -NMR (75 MHz, CD_3OD): 96.8 (C-1), 151.5 (C-3), 113.0 (C-4), 31.7 (C-5), 40.4 (C-6), 73.8 (C-7), 152.7 (C-8), 44.8 (C-9), 112.7 (C-10), — (C-11), 98.4 (C-1'), 74.9 (C-2'), 75.8 (C-3'), 71.8 (C-4'), 75.9 (C-5'), 64.3 (C-6'), 122.2 (C-1''), 132.9 (C-2''), 116.2 (C-3''), 163.4 (C-4''), 167.4 (C-7''), 169.0 (C-9''), 114.8 (C-8''), 147.3 (C-7'''), 127.6 (C-1'''), 115.2 (C-2'''), 146.8 (C-3'''), 149.7 (C-4'''), 116.5 (C-5'''), 123.1 (C-6'''). *Vitex altissima* (Verbenaceae).⁸⁶

162. 2'-O-p-Hydroxybenzoylgardoside



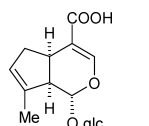
$C_{23}H_{26}O_{12}$: 494.1424; colorless amorphous powder; mp 215—216 °C; $[\alpha]_D^{25}$ -41.3° ($c=0.5$, MeOH); UV (MeOH): 255 (3.88); IR (KBr): 3368, 1703, 1636, 1603, 1512, 1271, 1170, 1079, 902, 852; 1H -NMR (500 MHz, CD_3OD): 5.35 (d, 3.5, H-1), 7.03 (brs, H-3), 2.97 (brs, H-5), 1.85 (m, H-6), 2.03 (m, H-6), 4.30 (brs, H-7), 2.84 (brs, H-9), 5.29 (brs, H_2 -10), 4.97 (d, 8.5, H-1'), 4.90 (dd, 9.5, 8.0, H-2'), 3.71 (m, H-3'), 3.41 (m, H-4'), 3.69 (m, H-5') 3.66 (m, H-6'), 3.93 (d, 12.0, H-6'), 7.84 (brd, 7.5, H-2''), 6.80 (brd, 7.5, H-3''), 5.99 (dd, 8.5, 2.0, H-6''); ^{13}C -NMR (75 MHz, CD_3OD): 96.5 (C-1), 30.7 (C-5), 40.5 (C-6), 73.9 (C-7), 153.2 (C-8), 45.2 (C-9), 112.5 (C-10), 98.3 (C-1'), 75.1 (C-2'), 76.3 (C-3'), 71.8 (C-4'), 78.5 (C-5'), 62.7 (C-6'), 122.3 (C-1''), 132.9 (C-2''), 116.2 (C-3''), 163.4 (C-4''), 167.5 (C-7''), 169.0 (C-9''), 114.8 (C-8''), 147.3 (C-7'''), 127.6 (C-1'''), 115.2 (C-2'''), 146.8 (C-3'''), 149.7 (C-4'''), 116.5 (C-5'''), 123.1 (C-6'''). *Vitex altissima* (Verbenaceae).⁸⁶

163. Aquaticoside C (6'-O-Benzoylgardoside)



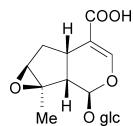
$C_{23}H_{26}O_{11}$: 478.147; amorphous powder; $[\alpha]_D^{24}$ +11.5° ($c=0.16$, MeOH); UV (MeOH): 236, 299, 331; 1H -NMR (500 MHz, CD_3OD): 5.18 (d, 5.2, H-1), 7.36 (d, 1.2, H-3), 3.19 (dt, 7.6, 7.0, H-5), 1.83 (dt, 12.8, 6.4, H-6), 1.96 (m, H-6), 4.31 (t, 5.8, H-7), 2.92 (ddd, 7.3, 5.2, 1.8, H-9), 5.19 (brs, H-10), 5.25 (t, 1.8, H-10), 4.74 (d, 7.9, H-1'), 3.30 (dd, 9.1, 7.9, H-2'), 3.46 (overlapped, H-3', 4'), 3.66 (m, H-5'), 4.54 (dd, 11.9, 6.4, H-6'), 4.69 (dd, 11.6, 2.4, H-6'), 8.07 (dd, 8.5, 1.2, H-2''), 7.52 (t, 7.9, H-3''), 7.65 (t, 7.6, H-4''); ^{13}C -NMR (125 MHz, CD_3OD): 96.8 (C-1), 151.6 (C-3), 114.0 (C-4), 32.5 (C-5), 41.1 (C-6), 73.9 (C-7), 152.9 (C-8), 44.8 (C-9), 113.1 (C-10), 173.0 (C-11), 100.2 (C-1'), 74.8 (C-2'), 77.9 (C-3'), 72.0 (C-4'), 75.6 (C-5'), 65.0 (C-6'), 131.4 (C-1''), 130.6 (C-2''), 129.7 (C-3''), 134.4 (C-4''), 167.8 (C-7''). *Veronica anagallis-aquatica* (Scrophulariaceae).⁹⁴

164. Nepetanudoside B



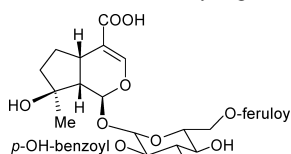
$C_{16}H_{22}O_9$: 358.1363; amorphous powder; -28.8° ($c=0.75$, MeOH); UV (MeOH): 236 (3.99); IR (KBr): 3327, 1684, 1634; 1H -NMR (400 MHz, CD_3OD): 5.13 (d, 5.6, H-1), 7.43 (s, H-3), 3.13 (m, H-5), 2.10 (m, H-6), 2.72 (m, H-6, 9), 5.48 (m, H-7), 1.85 (brs, H_2 -10), 4.58 (d, 7.6, H-1'), 3.69 (dd, 11.9, 4.7, H-6'), 3.84 (dd, 11.9, 1.8, H-6'); ^{13}C -NMR (100 MHz, CD_3OD): 101.9 (C-1), 153.4 (C-3), 113.1 (C-4), 35.7 (C-5), 39.6 (C-6), 127.9 (C-7), 140.2 (C-8), 50.5 (C-9), 16.2 (C-10), 171.3 (C-11), 104.5 (C-1'), 75.2 (C-2'), 78.4 (C-3''), 71.4 (C-4''), 78.2 (C-5''), 62.5 (C-6''). *Nepeta nuda* ssp. *albiflora* (Labiatae).⁸⁴

165. 7,8-Epoxy-8-epi-loganic acid



$C_{16}H_{22}O_{10}$: 374.1213; white amorphous powder; $[\alpha]_D^{20}$ -40.0° ($c=0.2$, MeOH); UV (MeOH): 205 (4.07), 227 (4.16); IR (KBr): 3450, 1685, 1635; 1H -NMR (300 MHz, CD_3OD): 5.12 (d, 9.5, H-1), 7.20 (brs, H-3), 2.80 (m, H-5), 1.41 (dd, 13.6, 10.4, H_a -6), 2.60 (dd, 13.6, 7.5, H_b -6), 3.28 (m, H-7), 2.19 (dd, 9.5, 7.4, H-9), 1.60 (s, H_2 -10), 4.81 (d, 7.9, H-1'), 3.19—3.44 (m, H-2'—5'), 3.64 (dd, 11.9, 5.8, H-6'), 3.90 (dd, 11.9, 1.9, H-6''); ^{13}C -NMR (75 MHz, CD_3OD): 95.6 (C-1), 148.5 (C-3), 116.6 (C-4), 32.9 (C-5), 36.2 (C-6), 63.9 (C-7), 65.8 (C-8), 45.4 (C-9), 18.1 (C-10), 175.3 (C-11), 99.9 (C-1'), 75.1 (C-2'), 78.0 (C-3'), 71.8 (C-4'), 78.6 (C-5'), 63.0 (C-6'). *Leonurus persicus* (Lamiaceae).²⁴

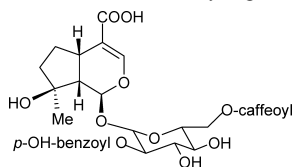
166. 6'-O-trans-Feruloylneungoside



$C_{33}H_{36}O_{15}$: 672.2054; pale yellow amorphous powder; mp 155—156 °C; $[\alpha]_D^{25}$ -74.6° ($c=0.25$, MeOH); UV (MeOH): 247 (4.27), 327 (4.07); IR (KBr): 3415, 1698, 1633, 1601, 1515, 1452, 1271, 1168, 1123, 980, 850; 1H -NMR (500 MHz, CD_3OD): 5.31 (d, 4.0, H-1), 7.11 (d, 1.0, H-3), 2.93 (m, H-5), 2.12 (m, H-6), 1.33 (m, H-6), 1.60 (m, H_2 -7), 2.12 (dd, 9.0, 4.0, H-9), 1.23 (s, H_3 -10), 5.01 (d, 8.0, H-1'), 4.94 (dd, 9.0, 8.0, H-2'), 3.73 (dd, 9.5, 9.0, H-3'), 3.55 (dd, 9.5, 9.0, H-4'), 3.69 (m, H-5') 4.41 (dd, 12.0, 5.5, H-6'), 4.56 (dd, 12.0, 2.0, H-6'), 7.85 (d, 8.5, H-2''), 6.83 (d, 8.5, H-3''), 6.40 (d, 16.0, H-8''), 7.64 (d, 16.0, H-7''), 7.18 (d, 2.0, H-2''), 6.78 (d, 8.5, H-5''), 7.06 (dd, 8.5, 2.0, H-6''), 3.88 (s, MeO-3''); ^{13}C -NMR (75 MHz, CD_3OD): 95.4 (C-1), 150.6 (C-3), 113.6 (C-4), 31.8 (C-5), 30.3 (C-6), 40.7 (C-7), 80.2 (C-8), 52.2 (C-9), 24.6 (C-10), 170.0 (C-11), 97.9 (C-1'), 74.8 (C-2'), 75.8 (C-3'), 71.7

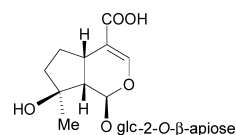
(C-4'), 75.8 (C-5'), 64.2 (C-6'), 122.2 (C-1''), 132.9 (C-2'', 6''), 116.1 (C-3'', 5''), 163.3 (C-4''), 167.3 (C=O, C-7''), 169.0 (C-9''), 115.2 (C-8''), 147.2 (C-7'''), 127.6 (C-1'''), 111.7 (C-2'''), 151.3 (C-3'''), 149.3 (C-4'''), 116.5 (C-5'''), 124.2 (C-6'''), 56.4 (MeO-3''). *Vitex altissima* (Verbenaceae).⁸⁶⁾

167. 6'-O-trans-Caffeoylnegundoside



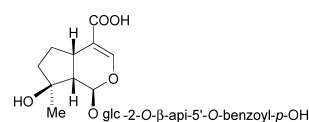
$C_{32}H_{34}O_{15}$; 658.1897; pale yellow amorphous powder; mp 168–169 °C; $[\alpha]_D^{25}$ -109.3° ($c=0.5$, MeOH); UV (MeOH): 249 (4.29), 331 (4.07); IR (KBr): 3398, 1695, 1633, 1604, 1517, 1448, 1272, 1168, 1117, 980, 852; 1H -NMR (500 MHz, CD_3OD): 5.31 (d, 4.0, H-1), 7.11 (d, 0.5, H-3), 2.93 (m, H-5), 2.14 (m, H-6), 1.34 (m, H-6), 1.63 (m, H₂-7), 2.14 (dd, 9.0, 4.0, H-9), 1.23 (s, H₃-10), 5.01 (d, 8.0, H-1'), 4.95 (dd, 9.0, 8.0, H-2'), 3.73 (dd, 9.5, 9.0, H-3'), 3.54 (dd, 9.5, 9.0, H-4'), 3.68 (m, H-5'), 4.40 (dd, 12.5, 6.0, H-6'), 4.55 (dd, 12.0, 2.0, H-6'), 7.85 (d, 8.5, H-2'', 6''), 6.80 (d, 8.5, H-3'', 5''), 6.30 (d, 16.0, H-8'''), 7.58 (d, 16.0, H-7'''), 7.05 (d, 2.0, H-2'''), 6.78 (d, 8.5, H-5'''), 6.95 (dd, 8.5, 2.0, H-6'''), ^{13}C -NMR (75 MHz, CD_3OD): 95.3 (C-1), 151.3 (C-3), 113.6 (C-4), 31.8 (C-5), 30.3 (C-6), 40.8 (C-7), 80.2 (C-8), 52.2 (C-9), 24.5 (C-10), 170.1 (C-11), 97.9 (C-1'), 74.8 (C-2'), 75.9 (C-3'), 71.7 (C-4'), 75.9 (C-5'), 64.1 (C-6'), 122.1 (C-1''), 132.9 (C-2'', 6''), 116.1 (C-3'', 5''), 163.4 (C-4''), 167.3 (C-7''), 169.0 (C-9''), 114.7 (C-8''), 147.3 (C-7'''), 127.6 (C-1'''), 115.1 (C-2'''), 146.8 (C-3'''), 149.6 (C-4'''), 116.5 (C-5'''), 123.1 (C-6'''). *Vitex altissima* (Verbenaceae).⁸⁶⁾

168. Inerminoside A1



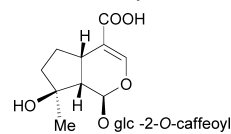
$C_{21}H_{32}O_{14}$; 508.1791; amorphous powder; UV (MeOH): 234; IR (?): 3400, 1651; 1H -NMR (300 MHz, CD_3OD): 5.52 (d, 2.8, H-1), 7.30 (s, H-3), 3.16 (m, H-5), 1.56 (m, H-6), 1.73 (m, H-7), 2.27 (dd, 9.8, 2.8, H-9), 1.33 (s, H₃-10), 4.73 (d, 7.8, H-1'), 3.44 (dd, 9.2, 7.8, H-2'), 3.55 (t, 9.0, H-3'), 3.28 (t, 9.8, H-4'), 3.32 (m, H-5'), 3.68 (dd, 12.0, 5.8, H-6'), 3.93 (dd, 12.0, 2.0, H-6'), 5.43 (brs, H-1''), 3.93 (brs, H-2''), 3.75 and 4.01 (each d, 9.9, H₂-4''), 3.62 (brs, H₃-5''); ^{13}C -NMR (75.5 MHz, CD_3OD): 94.4 (C-1), 149.8 (C-3), 31.9 (C-5), 30.6 (C-6), 41.2 (C-7), 80.9 (C-8), 52.5 (C-9), 24.4 (C-10), C-4 and C-11, not observed, 98.2 (C-1'), 77.8 (C-2'), 78.2 (C-3'), 71.9 (C-4'), 78.5 (C-5'), 63.0 (C-6'), 110.5 (C-1''), 79.1 (C-2''), 80.3 (C-3''), 75.4 (C-4''), 66.1 (C-5''). *Clerodendrum inerme* (Verbenaceae).⁹⁹⁾

169. Inerminoside D



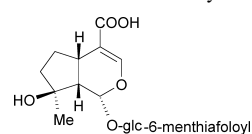
$C_{28}H_{36}O_{16}$; 628.2003; amorphous powder; UV (MeOH): 207, 211, 215, 243; IR (?): 3420, 1654, 1592, 1457; 1H -NMR (300 MHz, CD_3OD): 5.42 (d, 3.7, H-1), 7.16 (s, H-3), 3.20 (m, H-5), 1.54 (m, H-6), 2.31 (m, H-6), 1.72 (ddt, 7.5, H₂-7), 2.23 (dd, 9.5, 3.7, H-9), 1.36 (s, H₃-10), 4.80 (d, 7.8, H-1'), 3.43 (dd, 9.0, 7.8, H-2'), 3.56 (dd, 9.0, 9.5, H-3'), 3.30 (dd, 9.5, 9.0, H-4'), 3.35 (m, H-5'), 3.68 (dd, 12.2, 5.8, H-6'), 3.92 (dd, 12.2, 2.0, H-6'), 5.40 (d, 1.3, H-1''), 4.09 (d, 1.3, H-2''), 3.86 and 4.20 (each d, 10.0, H₂-4''), 4.34 and 4.42 (each d, 11.7, H₂-5''), 7.87 (d, 8.7, H-2'''), 6.71 (d, 8.7, H-3'''), 5'''); ^{13}C -NMR (75.5 MHz, CD_3OD): 94.5 (C-1), 147.5 (C-3), 32.9 (C-5), 30.7 (C-6), 41.1 (C-7), 80.7 (C-8), 52.9 (C-9), 24.8 (C-10), 175.7 (C-11), 98.4 (C-1'), 78.1 (C-2'), 78.6 (C-3'), 71.9 (C-4'), 78.5 (C-5'), 63.0 (C-6'), 110.4 (C-1''), 78.6 (C-2''), 79.3 (C-3''), 75.5 (C-4''), 67.7 (C-5''), 119.1 (C-1'''), 133.2 (C-2'''), 118.1 (C-3'''), 168.9 (C-7'''), C-4 and C-4'' were not observed. *Clerodendrum inerme* (Verbenaceae).⁹⁹⁾

170. 2'-Caffeoylmussaenosidic acid



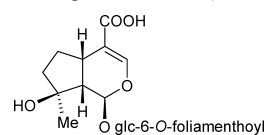
$C_{25}H_{30}O_{13}$; 538.1686; syrup; UV (MeOH): 329; IR (neat): 1698, 1628; 1H -NMR (250 MHz, CD_3OD): 5.47 (d, 3.0, H-1), 7.27 (s, H-3), 3.0 (m, H-5), 1.30–1.70 (m, H₂-6, H-7), 2.20 (m, H-7, 9), 1.27 (s, H₃-10), 4.90 (overlapped by HDO signal, H-1'), 4.83 (t, 9.0, H-2'), 3.30–4.00 (m, H-3', 4', 5', 6'), 7.03 (d, 2.0, H-2''), 6.77 (d, 8.5, H-5''), 6.93 (dd, 8.0, 2.0, H-6''), 7.51 (d, 16.0, H-7''), 6.20 (d, 16.0, H-8''); ^{13}C -NMR (62.5 MHz, CD_3OD): 95.1 (C-1), 151.2 (C-3), 114.2 (C-4), 31.5 (C-5), 30.3 (C-6), 41.3 (C-7), 80.0 (C-8), 52.6 (C-9), 24.4 (C-10), 170.4 (C-11), 97.8 (C-1'), 76.1 (C-2'), 74.8 (C-3'), 71.8 (C-4'), 78.6 (C-5'), 62.8 (C-6'), 128.0 (C-1''), 115.4 (C-2''), 146.7 (C-3''), 148.5 (C-4''), 116.5 (C-5''), 123.0 (C-6''), 147.2 (C-7''), 115.1 (C-8''), 168.2 (C-9''). *Avicennia germinans* (Avicenniaceae/Verbenaceae).¹⁰¹⁾

171. 6'-O-Menthaifolylmussaenosidic acid



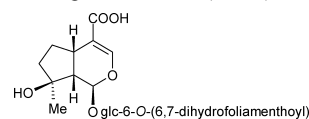
$C_{25}H_{30}O_{12}$; 542.2363; 1H -NMR (250 MHz, D_2O): 5.15 (d, 2.3, H-1), 7.14 (s, H-3), 3.04 (m, H-5), 1.63 (H-6, H₂-7, H₂-5''), 2.10–2.20 (H₂-6, H-9, H₂-4''), 1.30 (H₃-7), 1.21 (s, H₃-10, 10''), 4.72 (d, 7.9, H-1'), 3.26 (dd, 8.8, 8.2, H-2'), 3.42 (m, H-3', 4'), 3.61 (m, H-5'), 4.40 (dd, 12.0, 5.8, H-6'), 4.34 (dd, 12.0, 2.7, H-6'), 6.76 (tq, 7.5, 1.0, H-3''), 5.86 (dd, 17.5, 10.9, H-7''), 5.05 (dd, 11.0, 1.0, H-8''), *cis*), 5.11 (dd, 17.6, 1.0, H-8''), *trans*), 1.73 (s, H₃-9''); ^{13}C -NMR (62.9 MHz, D_2O): 95.1 (C-1), 148.8 (C-3), 116.5 (C-4), 32.5 (C-5), 30.0 (C-6), 39.8 (C-7), 81.1 (C-8), 51.5 (C-9), 24.4 (C-10), 170.9 (C-11), 98.8 (C-1'), 73.6 (C-2'), 76.4 (C-3'), 70.8 (C-4'), 74.8 (C-5'), 63.9 (C-6'), 170.9 (C-1''), 127.9 (C-2''), 145.6 (C-3''), 24.2 (C-4''), 40.7 (C-5''), 74.4 (C-6''), 144.6 (C-7''), 113.2 (C-8''), 12.5 (C-9''), 27.0 (C-10''). *Veronica bellidoides* (Scrophulariaceae).¹⁰²⁾

172. Agnucastose A (6'-O-Foliamenthylmussaenosidic acid)

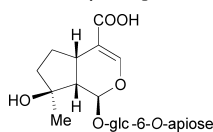


$C_{26}H_{38}O_{12}$; 542.2363; amorphous powder; $[\alpha]_D^{20}$ -52.0° ($c=0.1$, MeOH); UV (MeOH): 220 (4.25); IR (KBr): 3425, 2927, 1703, 1650, 1561, 1543, 1524, 1457, 1440 sh, 1419 sh, 1404, 1276, 1072, 1017, 913, 854, 841; 1H -NMR (300 MHz, CD_3OD): 5.19 (d, 6.0, H-1), 7.30 (s, H-3), 3.20 (m, H-5), 1.40 and 2.30 (each m, H₂-6), 1.67 (m, H₂-7), 2.10 (m, H-9), 1.30 (s, H₃-10), 4.69 (d, 8.0, H-1'), 3.20 (t, 8.0, H-2'), 3.39 (m, H-3'), 3.35 (m, H-4'), 3.50 (m, H-5'), 4.27 (dd, 12.0, 5.0, H-6'), 4.49 (dd, 12.0, 2.0, H-6'), 6.78 (dt, 8.5, 1.5, H-3''), 2.34 (m, H₂-4''), 2.15 (m, H₂-5''), 5.38 (brt, 6.5, H-7''), 4.09 (d, 6.5, H₂-8''), 1.83 (s, H₃-9''), 1.68 (s, H₃-10''); ^{13}C -NMR (75 MHz, CD_3OD): 95.4 (C-1), 150.0 (C-3), 116.4 (C-4), 33.7 (C-5), 31.1 (C-6), 40.1 (C-7), 81.1 (C-8), 52.3 (C-9), 25.2 (C-10), 171.3 (C-11), 99.7 (C-1'), 74.8 (C-2'), 77.8 (C-3'), 71.7 (C-4'), 75.7 (C-5'), 64.3 (C-6'), 169.3 (C-1''), 128.8 (C-2''), 143.6 (C-3''), 28.0 (C-4''), 39.2 (C-5''), 138.3 (C-6''), 125.8 (C-7''), 59.4 (C-8''), 12.6 (C-9''), 16.2 (C-10''). *Vitex agnus-castus* (Verbenaceae).⁹²⁾

173. Agnucastose B (6'-O-(6,7-Dihydrofoliamenthyl)-mussaenosidic acid)

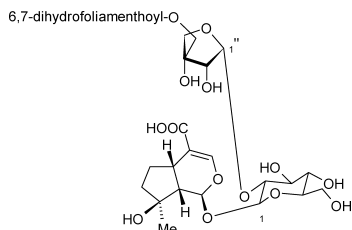


$C_{26}H_{40}O_{12}$; 544.2519; amorphous powder; $[\alpha]_D^{20}$ -64° ($c=0.1$, MeOH); UV (MeOH): 220 (4.27); IR (KBr): 3425, 2929, 1700, 1649, 1559, 1541, 1527, 1459, 1442 sh, 1424 sh, 1404, 1385 sh, 1277, 1207, 1159, 1154, 1070, 1022, 941, 912, 855, 745; 1H -NMR (300 MHz, CD_3OD): 5.18 (d, 6.0, H-1), 7.38 (s, H-3), 3.20 (m, H-5), 1.38 and 2.30 (each m, H₂-6), 1.67 (br t, 7.5, H₂-7), 2.10 (dd, 8.5, 6.0, H-9), 1.31 (s, H₃-10), 4.70 (d, 8.0, H-1'), 3.21 (m, H-2'), 3.39 (t, 9.0, H-3'), 3.34 (dd, 10.0, 8.5, H-4'), 3.55 (m, H-5'), 4.28 (dd, 12.0, 6.0, H-6'), 4.49 (dd, 12.0, 2.0, H-6'), 6.78 (dt, 7.5, 1.5, H-3''), 2.22 (m, H₂-4''), 1.28 and 1.46 (each m, H₂-5''), 1.62 (m, H-6''), 1.36 and 1.60 (each m, H₂-7''), 3.60 (m, H₂-8''), 1.83 (d, 1.0, H₃-9''), 0.93 (d, 6.5, H₃-10''); ^{13}C -NMR (75 MHz, CD_3OD): 95.4 (C-1), 151.1 (C-3), 114.5 (C-4), 33.6 (C-5), 31.1 (C-6), 40.0 (C-7), 81.1 (C-8), 52.2 (C-9), 25.2 (C-10), 171.3 (C-11), 99.7 (C-1'), 74.8 (C-2'), 77.9 (C-3'), 71.7 (C-4'), 75.7 (C-5'), 64.4 (C-6'), 169.4 (C-1''), 128.5 (C-2''), 144.4 (C-3''), 27.2 (C-4''), 37.0 (C-5''), 30.6 (C-6''), 40.6 (C-7''), 61.0 (C-8''), 12.5 (C-9''), 19.8 (C-10''). *Vitex agnus-castus* (Verbenaceae).⁹²⁾

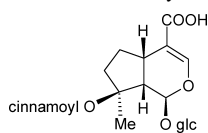
174. 6-*O*- β -D-Apiofuranosylmussaenosidic acid

$C_{21}H_{32}O_{14}$: 508.1791; amorphous powder; $[\alpha]_D^{25} -97.1^\circ$ ($c=1.02$, MeOH); 1H -NMR (400 MHz, CD_3OD): 5.34 (d, 4.9, H-1), 7.40 (br s, H-3), 3.16 (m, H-5), 1.46 (m, H-6), 2.29 (m, H-6), 1.71 (br t, 7.6, H₂-7), 2.18 (dd, 8.8, 4.9, H-9), 1.34 (s, H₃-10), 4.66 (d, 7.8, H-1'), 3.19 (dd, 9.0, 7.8, H-2'), 3.36 (dd, 9.0, 8.8, H-3'), 3.26 (dd, 9.5, 8.8, H-4'), 3.45 (m, H-5'), 3.61 (dd, 11.2, 6.3, H-6'), 3.98 (dd, 11.2, 2.2, H-6'), 5.01 (d, 2.4, H-1''), 3.88 (d, 2.4, H-2''), 3.75 (d, 9.8, H-4''), 3.56 (s, H₂-5''); ^{13}C -NMR (100 MHz, CD_3OD): 95.6 (C-1), 152.1 (C-3), 113.5 (C-4), 32.5 (C-5), 30.8 (C-6), 40.5 (C-7), 80.4 (C-8), 52.3 (C-9), 24.8 (C-10), 170.8 (C-11), 99.9 (C-1'), 74.7 (C-2'), 78.0 (C-3'), 71.7 (C-4'), 77.3 (C-5'), 68.7 (C-6'), 111.0 (C-1''), 78.0 (C-2''), 80.8 (C-3''), 75.0 (C-4''), 65.6 (C-5''). *Canthium berberidifolium* (Rubiaceae).¹⁰⁴

175. Inerminoside A

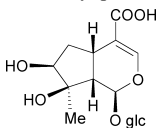


$C_{31}H_{46}O_{16}$: 674.2785; amorphous colorless powder; UV (?): 228; IR (?): 3350, 1700, 1670, 1630; 1H -NMR (300 MHz, CD_3OD): 5.39 (d, 5.6, H-1), 7.37 (s, H-3), 3.16 (ddd-q-shaped, 8.5, H-5), 1.51 (m, H-6), 2.34 (m, H-6), 1.76 (m, H₂-7), 2.14 (dd, 8.5, 5.6, H-9), 1.39 (s, H₃-10), 4.77 (d, 7.7, H-1'), 3.46 (dd, 9.1, 7.7, H-2'), 3.55 (t, 8.8, H-3'), 3.27 (dd, t-shaped, 9.7, 8.3, H-4'), 3.35 (m, H-5'), 3.66 (overlapped, H-6'), 3.94 (br d, 12.9, H-6'), 5.41 (br s, H-1''), 3.92 (br s, H-2''), 3.79 (d, 9.6, H_a-4''), 4.23 (d, 9.6, H_b-4''), 4.27 (d, 11.3, H_a-5''), 4.22 (d, 11.3, H_b-5''), 6.86 (br t, 7.5, H-3''), 2.27 (m, H-4''), 1.36 (m, H_a-5''), 1.48 (m, H_b-5''), 1.67 (m, H-6''), 1.50 (m, H-7''), 1.62 (m, H-7''), 3.66 (overlapped, H-8''), 1.87 (s, H₃-9''), 0.99 (d, 5.5, H₃-10''); ^{13}C -NMR (75 MHz, CD_3OD): 94.5 (C-1), 152.2 (C-3), 113.4 (C-4), 32.6 (C-5), 30.8 (C-6), 40.1 (C-7), 80.9 (C-8), 52.2 (C-9), 25.1 (C-10), 170.0 (C-11), 98.4 (C-1'), 77.9 (C-2'), 78.3 (C-3'), 71.9 (C-4'), 78.3 (C-5'), 63.0 (C-6'), 110.2 (C-1''), 78.9 (C-2''), 79.2 (C-3''), 75.5 (C-4''), 68.7 (C-5''), 169.5 (C-1''), 128.4 (C-2''), 144.7 (C-3''), 27.3 (C-4''), 36.9 (C-5''), 30.6 (C-6''), 40.6 (C-7''), 61.0 (C-8''), 12.5 (C-9''), 19.8 (C-10''). *Clerodendrum inerme* (Verbenaceae).⁹⁵

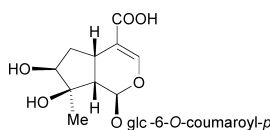
176. 8-*O*-Cinnamoylmussaenosidic acid

$C_{25}H_{30}O_{11}$: 506.1788; isolated as tetraacetate; amorphous, $[\alpha]_D^{25} -8.5^\circ$ ($c=0.5$, $CHCl_3$); UV ($CHCl_3$): 282, 325; IR (KBr): 3160, 1705, 1675, 1510, 1210; 1H -NMR (400 MHz, $CDCl_3$): 5.20 (d, 2.5, H-1), 7.42 (s, H-3), 2.99 (m, H-5), 2.20 (m, H-6), 2.30 (m, H-6), 2.29 (m, H-7), 2.37 (dd, 9.0, 3.0, H-9), 1.46 (s, H₃-10), 4.90 (H-1'), 4.72 (br m, H-2'), 5.02 (H-3') 5.14 (H-4'), 3.68 (H-5'), 4.16, 4.34 (H-6'), 6.86 (m, H-2''), 6.86 (m, H-3''), 5.70 (m, H-4''), 6.14 (d, 16.0, H-7''), 7.45 (d, 16.0, H-8''), 2.0—2.20 (4×Ac); ^{13}C -NMR (100 MHz, $CDCl_3$): 96.0 (C-1), 151.2 (C-3), 112.1 (C-4), 30.1 (C-5), 29.6 (C-6), 40.7 (C-7), 96.4 (C-8), 51.0 (C-9), 25.2 (C-10), 169.4 (C-11), 95.4 (C-1'), 70.3 (C-2'), 72.2 (C-3'), 68.3 (C-4'), 72.5 (C-5'), 61.7 (C-6'), 137.0 (C-1''), 129.7 (C-2''), 129.5 (C-3''), 131.8 (C-4''), 145.9 (C-7''), 114.2 (C-8''), 169.1 (C-9''), 20.2, 20.6, 20.7, 20.9, 169.3, 170.1, 170.6, 171.9 (4×Ac). *Avicennia officinalis* (Verbenaceae).¹⁰⁹

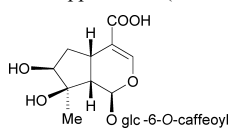
177. Caryoptosidic acid



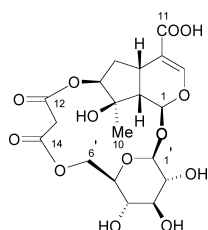
$C_{16}H_{24}O_{11}$: 392.1318; $[\alpha]_D^{25} -128.6^\circ$ ($c=1.0$, MeOH); 1H -NMR (600 MHz, CD_3OD): 5.51 (d, 4.0, H-1), 7.39 (br s, H-3), 3.20 (ddd, 10.5, 9.5, 5.0, H-5), 2.26 (ddd, 15.5, 9.5, 5.0, H-6), 1.75 (dt, 15.5, 5.0, H-6), 3.66 (dd, 5.0, 2.5, H-7), 2.59 (dd, 10.5, 4.0, H-9), 1.25 (s, H₃-10), 4.69 (d, 7.8, H-1'), 3.26 (dd, 9.5, 7.8, H-2'), 3.44 (t, 9.5, H-3'), 3.33 (t, 9.5, H-4'), 3.36 (m, H-5'), 3.72 (dd, 12.0, 2.5, H-6'), 3.92 (dd, 12.0, 4.5, H-6'), ^{13}C -NMR (150 MHz, CD_3OD): 94.4 (C-1), 152.0 (C-3), 112.4 (C-4), 27.2 (C-5), 38.5 (C-6), 78.8 (C-7), 78.9 (C-8), 48.9 (C-9), 21.9 (C-10), 171.5 (C-11), 99.5 (C-1'), 74.8 (C-2'), 78.7 (C-3'), 71.3 (C-4'), 77.9 (C-5'), 62.4 (C-6'). *Lippia graveolens* (Verbenaceae).¹⁰³

178. Lippioside I (6'-*O*-*p*-trans-Coumaroylcaryoptosidic acid)

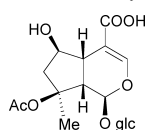
$C_{25}H_{30}O_{13}$: 538.1686; $[\alpha]_D^{25} -127.5^\circ$ ($c=1.0$, MeOH); 1H -NMR (600 MHz, CD_3OD): 5.49 (d, 4.5, H-1), 7.36 (br s, H-3), 3.19 (ddd, 10.5, 9.5, 5.0, H-5), 2.24 (ddd, 16.0, 9.5, 5.0, H-6), 1.74 (dt, 16.0, 5.0, H-6), 3.68 (dd, 5.0, 2.5, H-7), 2.61 (dd, 10.5, 4.5, H-9), 1.26 (s, H₃-10), 4.75 (d, 7.8, H-1'), 3.25 (dd, 9.5, 7.8, H-2'), 3.46 (t, 9.5, H-3'), 3.34 (t, 9.5, H-4'), 3.58 (m, H-5'), 4.44 (dd, 12.0, 2.5, H-6'), 4.55 (dd, 12.0, 4.5, H-6'), 7.55 (d, 8.0, H-2''), 6.88 (d, 8.0, H-3''), 5.70 (m, H-4''), 7.73 (d, 16.0, H-7''), 6.44 (d, 16.0, H-8''); ^{13}C -NMR (150 MHz, CD_3OD): 94.5 (C-1), 152.5 (C-3), 112.8 (C-4), 27.1 (C-5), 38.4 (C-6), 78.8 (C-7), 79.0 (C-8), 48.9 (C-9), 21.9 (C-10), 171.2 (C-11), 99.5 (C-1'), 74.6 (C-2'), 77.9 (C-3'), 71.4 (C-4'), 75.6 (C-5'), 64.4 (C-6'), 127.9 (C-1''), 131.2 (C-2''), 116.6 (C-3''), 160.1 (C-4''), 146.8 (C-7''), 118.1 (C-8''), 168.7 (C-9''). *Lippia graveolens* (Verbenaceae).¹⁰³

179. Lippioside II (6'-*O*-trans-Caffeoylcaryoptosidic acid)

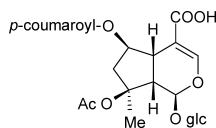
$C_{25}H_{30}O_{14}$: 554.1635; $[\alpha]_D^{25} -126.3^\circ$ ($c=1.0$, MeOH); 1H -NMR (600 MHz, CD_3OD): 5.49 (d, 4.5, H-1), 7.36 (br s, H-3), 3.18 (ddd, 10.5, 9.5, 5.0, H-5), 2.25 (ddd, 16.0, 9.5, 5.0, H-6), 1.74 (dt, 16.0, 5.0, H-6), 3.67 (dd, 5.0, 2.5, H-7), 2.61 (dd, 10.5, 4.5, H-9), 1.26 (s, H₃-10), 4.76 (d, 7.8, H-1'), 3.25 (dd, 9.5, 7.8, H-2'), 3.46 (t, 9.5, H-3'), 3.34 (t, 9.5, H-4'), 3.59 (m, H-5'), 4.44 (dd, 12.0, 2.5, H-6'), 4.55 (dd, 12.0, 4.5, H-6'), 7.04 (d, 1.5, H-2''), 6.77 (d, 8.0, H-5''), 6.94 (dd, 8.0, 1.5, H-6''), 7.57 (d, 16.0, H-7''), 6.26 (d, 16.0, H-8''); ^{13}C -NMR (150 MHz, CD_3OD): 94.5 (C-1), 152.5 (C-3), 112.8 (C-4), 27.1 (C-5), 38.5 (C-6), 78.8 (C-7), 79.0 (C-8), 48.9 (C-9), 21.9 (C-10), 171.3 (C-11), 99.5 (C-1'), 74.6 (C-2'), 78.0 (C-3'), 71.4 (C-4'), 75.6 (C-5'), 64.4 (C-6'), 127.9 (C-1''), 115.6 (C-2''), 146.1 (C-3''), 149.3 (C-4''), 115.2 (C-5''), 124.9 (C-6''), 146.1 (C-7''), 116.1 (C-8''), 167.2 (C-9''). *Lippia graveolens* (Verbenaceae).¹⁰³

180. 7-*O*-(6'-*O*-Malonyl)-cachinesidic acid (Malonic ester of 8-hydroxy-8-*epi*-loganic acid)

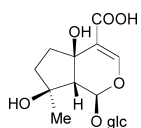
$C_{19}H_{24}O_{13}$: 460.1216; isolated as triacetate; mp 253—257 °C; $[\alpha]_D^{20} -54.0^\circ$ ($c=0.1$, MeOH); IR (KBr): 3472, 3412, 1754, 1739, 1693, 1625, 1262, 1219; 1H -NMR (400 MHz, acetone- d_6): 5.40 (d, 10.0, H-1), 7.53 (s, H-3), 3.40 (m, H-5), 1.45 (m, H-6), 3.04 (ddd, 16.0, 10.0, 7.5, H-6), 4.92 (d, 7.5, H-7), 2.00 (dd, 10.0, 7.0, H-9), 1.45 (s, H₃-10), 3.44—3.64 (d, 15.5, H₂-13), 5.20 (d, 8.0, H-1'), 5.08 (dd, 9.0, 8.0, H-2'), 5.44 (t, 9.0, H-3'), 5.00 (t, 9.0, H-4'), 4.07 (td, 9.0, 3.0, H-5'), 3.94 (dd, 11.5, 3.0, H-6'), 5.05 (m, H-6'), 2.09, 2.12, 2.13 (each s, 3×Ac); ^{13}C -NMR (100 MHz, acetone- d_6): 97.3 (C-1), 152.6 (C-3), 112.6 (C-4), 34.2 (C-5), 40.8 (C-6), 83.3 (C-7), 83.0 (C-8), 51.3 (C-9), 21.8 (C-10), 170.6 (C-11), 166.5 (C-12), 42.7 (C-13), 167.9 (C-14), 98.9 (C-1'), 72.3 (C-2'), 74.0 (C-3'), 71.4 (C-4'), 72.7 (C-5'), 63.5 (C-6'), 20.4, 20.5, 20.6, 171.1, 171.4, 171.5 (3×Ac). *Ajuga pseudoiva* (Labiatae).¹⁰⁶

181. 8-*O*-Acetylshanzhisi

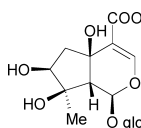
$C_{18}H_{26}O_{12}$: 434.1424; white amorphous powder; $[\alpha]_D^{20} -42.0^\circ$ ($c=0.1$, MeOH); UV (MeOH): 205 (2.88); IR (KBr): 3450, 1739, 1695, 1400, 1250, 1100; 1H -NMR (500 MHz, CD_3OD): 5.62 (d, 3.8, H-1), 7.10 (br s, H-3), 3.01 (dd, 9.3, 3.5, H-5), 4.13 (m, H-6), 2.24 (dd, 14.4, 6.2, H_a-7), 2.17 (dd, 14.4, 5.3, H_b-7), 2.85 (dd, 9.3, 3.8, H-9), 1.55 (s, H₃-10), 2.00 (s, Ac), 4.65 (d, 7.9, H-1'), 3.13 (dd, 9.0, 7.9, H-2'), 3.38 (t, 9.0, H-3'), 3.30 (m, H-4'), 3.32 (m, H-5'), 3.90 (dd, 12.0, 2.1, H-6'), 3.66 (dd, 12.0, 6.2, H-6''); ^{13}C -NMR (125 MHz, CD_3OD): 94.9 (C-1), 147.9 (C-3), 111.0 (C-4), 43.6 (C-5), 77.6 (C-6), 46.9 (C-7), 90.1 (C-8), 48.6 (C-9), 22.1 (C-10), 181.0 (C-11), 22.3, 172.9 (Ac), 100.6 (C-1'), 74.8 (C-2'), 77.9 (C-3'), 71.7 (C-4'), 78.3 (C-5'), 62.9 (C-6'). *Phlomis tuberosa* (Lamiaceae).¹⁰⁷

182. 8-O-Acetyl-6-O-trans-p-coumaroylshanzhiside

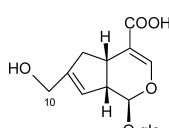
$C_{27}H_{32}O_{14}$; 580.1791; amorphous powder; $[\alpha]_D^{21} -75.6^\circ$ ($c=1.58$, MeOH); 1H -NMR (400 MHz, CD_3OD): 5.89 (d, 2.7, H-1), 7.49 (d, 1.5, H-3), 3.33 (H-5), 5.40 (m, H-6), 2.37 (br d, 15.4, H_a -7), 2.05 (dd, 15.4, 5.3, H_b -7), 3.01 (dd, 8.5, 2.7, H-9), 1.51 (s, H_3 -10), 4.65 (d, 7.8, H-1'), 3.18 (dd, 9.0, 7.8, H-2'), 3.37 (dd, 9.0, 9.0, H-3'), 3.26 (dd, 9.0, 9.0, H-4'), 3.31 (m, H-5'), 3.88 (dd, 12.2, 2.2, H-6'), 3.66 (dd, 12.2, 6.1, H-6'), 7.40 (d, 8.6, H-2'', 6''), 6.77 (d, 8.6, H-3'', 5''), 7.56 (d, 15.9, H-7''), 6.28 (d, 15.9, H-8''); ^{13}C -NMR (100 MHz, CD_3OD): 95.3 (C-1), 154.6 (C-3), 108.4 (C-4), 39.8 (C-5), 78.8 (C-6), 45.2 (C-7), 89.6 (C-8), 50.3 (C-9), 21.9 (C-10), 169.7 (C-11), 22.2, 173.0 (Ac), 100.3 (C-1'), 74.6 (C-2'), 77.8 (C-3'), 71.5 (C-4'), 78.2 (C-5'), 62.9 (C-6'), 127.0 (C-1''), 131.1 (C-2'', 6''), 115.4 (C-3'', 5''), 161.1 (C-4''), 146.5 (C-7''), 116.8 (C-8''), 168.5 (C-9''). *Barleria lupulina* (Acanthaceae).¹⁰⁸

183. Ipolamiidic acid

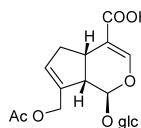
$C_{16}H_{24}O_{11}$; 392.1318; amorphous powder; $[\alpha]_D -69.9^\circ$ ($c=0.1$, MeOH); UV (MeOH): 226; IR (KBr): 3421, 1652; 1H -NMR (600 MHz, CD_3OD): 5.78 (br s, H-1), 7.25 (s, H-3), 2.28 (m, H-6), 2.04 (m, H-6), 1.97 (m, H-7), 1.61 (m, H-7), 2.44 (br s, H-9), 1.21 (s, H_3 -10), 4.59 (d, 7.9, H-1'), 3.23 (dd, 9.0, 7.9, H-2'), 3.40 (t, 9.0, H-3'), 3.30 (t, 9.0, H-4'), 3.35 (m, H-5'), 3.93 (dd, 11.9, 1.9, H-6'), 3.68 (dd, 11.9, 6.2, H-6'); ^{13}C -NMR (150 MHz, CD_3OD): 92.5 (C-1), 148.4 (C-3), 117.2 (C-4), 71.5 (C-5), 39.0 (C-6), 40.1 (C-7), 78.2 (C-8), 60.4 (C-9), 23.0 (C-10), 171.6 (C-11), 98.4 (C-1'), 74.3 (C-2'), 77.3 (C-3'), 71.5 (C-4'), 78.1 (C-5'), 62.4 (C-6'). *Phlomis capitata* (Lamiaceae).¹⁰⁵

184. Lamiidic acid

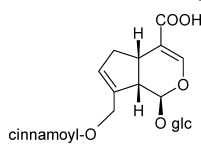
$C_{16}H_{24}O_{12}$; 408.1267; amorphous powder; $[\alpha]_D -83.9^\circ$ ($c=0.1$, MeOH); UV (MeOH): 224; IR (KBr): 3421, 1650; 1H -NMR (600 MHz, CD_3OD): 5.76 (br s, H-1), 7.13 (s, H-3), 2.29 (d, 3.9, H_2 -6), 3.57 (t, 3.9, H-7), 2.71 (br s, H-9), 1.16 (s, H_3 -10), 4.61 (d, 7.8, H-1'), 3.24 (dd, 9.0, 7.8, H-2'), 3.41 (t, 9.0, H-3'), 3.34 (t, 9.0, H-4'), 3.36 (m, H-5'), 3.92 (dd, 11.5, 1.8, H-6'), 3.68 (dd, 11.5, 5.9, H-6'); ^{13}C -NMR (150 MHz, CD_3OD): 93.9 (C-1), 146.8 (C-3), 119.8 (C-4), 70.7 (C-5), 48.0 (C-6), 78.1 (C-7), 79.7 (C-8), 56.7 (C-9), 21.6 (C-10), 174.3 (C-11), 99.4 (C-1'), 74.4 (C-2'), 77.4 (C-3'), 71.7 (C-4'), 78.3 (C-5'), 62.8 (C-6'). *Phlomis nissolii* (Lamiaceae).¹⁰⁵

185. Premnosidic acid

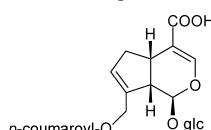
$C_{16}H_{22}O_{10}$; 374.1213; amorphous powder; mp 102–104°C; $[\alpha]_D +6.8^\circ$ ($c=0.13$, MeOH); IR (KBr): 3550, 1686; 1H -NMR (600 MHz, CD_3OD): 5.20 (d, 8.0, H-1), 7.58 (s, H-3), 3.20 (d, 7.0, H-5), 2.85 (m, H-6), 2.18 (m, H-6), 5.85 (br s, H-8), 2.77 (m, H-9), 4.37 (m, H-10), 4.20 (d, 3.0, H-10), 4.78 (d, 8.0, H-1'), 3.23 (H-2'), 3.30 (H-3', 4'), 3.42 (H-5'), 3.69, 3.70 (H_2 -6'); ^{13}C -NMR (125 MHz, CD_3OD): 98.2 (C-1), 153.2 (C-3), 112.8 (C-4), 36.7 (C-5), 39.7 (C-6), 144.8 (C-7), 128.3 (C-8), 47.0 (C-9), 61.4 (C-10), 170.0 (C-11), 100.3 (C-1'), 74.8 (C-2'), 78.4 (C-3'), 71.5 (C-4'), 77.8 (C-5'), 62.6 (C-6'). *Premna barbata* (Verbenaceae).¹¹¹

186. 10-O-Acetylgeniposidic acid

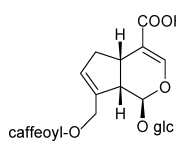
$C_{18}H_{24}O_{11}$; 416.1318; foam; $[\alpha]_D +7.0^\circ$ ($c=0.6$, MeOH); 1H -NMR (200 MHz, D_2O): 5.28 (d, 5.0, H-1), 7.12 (s, H-3), — (H-5), 2.70, 2.1 (m, H_2 -6), 5.89 (m, H-7), 2.90 (m, H-9), 4.75 (m, partly obscured by solvent peak, H_2 -10), 2.05 (s, AcO-10); ^{13}C -NMR (50 MHz, D_2O): 97.3 (C-1), 151.8 (C-3), 114.3 (C-4), 34.9 (C-5), 39.0 (C-6), 133.3 (C-7), 137.2 (C-8), 47.1 (C-9), 63.8 (C-10), C-11, peak not observed, 21.2, 175.0 (Ac), 99.5 (C-1'), 73.6 (C-2'), 76.5 (C-3'), 70.3 (C-4'), 77.0 (C-5'), 61.5 (C-6'). *Plantago alpina* (Plantaginaceae).¹¹⁵

187. 10-O-E-Cinnamoylgeniposidic acid

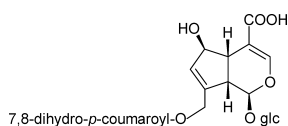
$C_{25}H_{28}O_{11}$; 504.1631; 1H -NMR (500 MHz, CD_3OD): 5.19 (d, 7.9, H-1), 7.53 (br s, H-3), 3.20 (m, H-5), 2.15 and 2.88 (H_2 -6), 5.90 (H-7), 2.79 (m, H-9), 4.88 and 4.94 (each d, 14.2, H_2 -10), 4.73 (d, 7.8, H-1'), 3.24 (H-2'), 3.39 (H-3'), 3.30 (H-4', 5'), 3.67 and 3.87 (H_2 -6'), 7.61 (H-2'', 6''), 7.40 (H-3'', 4'', 5''), 7.72 (d, 16.0, H-7''), 6.57 (d, 16.0, H-8''); ^{13}C -NMR (125 MHz, CD_3OD): 98.3 (C-1), 153.2 (C-3), 112.8 (C-4), 36.7 (C-5), 40.0 (C-6), 131.5 (C-7), 139.6 (C-8), 47.3 (C-9), 63.9 (C-10), 170.9 (C-11), 100.5 (C-1'), 74.8 (C-2'), 77.9 (C-3'), 71.4 (C-4'), 78.4 (C-5'), 62.8 (C-6'), 135.7 (C-1''), 129.3 (C-2'', 6''), 130.0 (C-3'', 5''), 131.5 (C-4''), 146.5 (C-7''), 118.7 (C-8''), 168.4 (C-9''). *Avicennia marina* (Verbenaceae).¹¹⁶

188. 10-O-E-p-Coumaroylgeniposidic acid

$C_{25}H_{28}O_{12}$; 520.1580; 1H -NMR (500 MHz, CD_3OD): 5.19 (d, 7.8, H-1), 7.53 (br s, H-3), 3.20 (m, H-5), 2.15 and 2.87 (H_2 -6), 5.89 (C-7), 2.79 (m, H-9), 4.87 and 4.94 (each d, 14.2, H_2 -10), 4.74 (d, 7.8, H-1'), 3.26 (H-2'), 3.38 (H-3'), 3.32 (H-4'), 3.31 (H-5'), 3.67 and 3.88 (H_2 -6'), 7.48 (d, 8.5, H-2'', 6''), 6.81 (d, 8.5, H-3'', 5''), 7.65 (d, 15.9, H-7''), 6.38 (d, 15.9, H-8''); ^{13}C -NMR (125 MHz, CD_3OD): 98.3 (C-1), 153.3 (C-3), 112.6 (C-4), 36.6 (C-5), 39.9 (C-6), 131.2 (C-7), 139.7 (C-8), 47.3 (C-9), 63.7 (C-10), 170.9 (C-11), 100.5 (C-1'), 74.8 (C-2'), 77.9 (C-3'), 71.4 (C-4'), 78.3 (C-5'), 62.7 (C-6'), 127.1 (C-1''), 131.3 (C-2'', 6''), 116.8 (C-3'', 5''), 161.3 (C-4''), 146.8 (C-7''), 114.9 (C-8''), 169.1 (C-9''). *Avicennia marina* (Verbenaceae).¹¹⁶

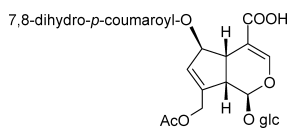
189. 10-O-E-Caffeoylgeniposidic acid

$C_{25}H_{28}O_{13}$; 536.1529; 1H -NMR (500 MHz, CD_3OD): 5.19 (d, 7.7, H-1), 7.53 (br s, H-3), 3.21 (m, H-5), 2.16 and 2.88 (H_2 -6), 5.88 (H-7), 2.78 (m, H-9), 4.86 and 4.93 (each d, 14.2, H_2 -10), 4.74 (d, 7.7, H-1'), 3.24 (H-2'), 3.39 (H-3'), 3.32 (H-4'), 3.30 (H-5'), 3.66 and 3.88 (H_2 -6'), 7.05 (d, 1.5, H-2''), 6.78 (d, 8.1, H-5''), 6.96 (dd, 8.1, 1.5, H-6''), 7.58 (d, 15.9, H-7''), 6.30 (d, 15.9, H-8''); ^{13}C -NMR (125 MHz, CD_3OD): 98.4 (C-1), 153.3 (C-3), 112.7 (C-4), 36.6 (C-5), 39.9 (C-6), 131.2 (C-7), 139.8 (C-8), 47.4 (C-9), 63.7 (C-10), 170.8 (C-11), 100.5 (C-1'), 74.8 (C-2'), 77.9 (C-3'), 71.4 (C-4'), 78.4 (C-5'), 62.8 (C-6'), 127.8 (C-1''), 115.2 (C-2''), 147.2 (C-3''), 149.6 (C-4''), 116.5 (C-5''), 123.0 (C-6''), 146.8 (C-7''), 114.9 (C-8''), 169.1 (C-9''). *Avicennia marina* (Verbenaceae).¹¹⁶

190. Humifusin A

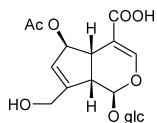
$C_{25}H_{30}O_{13}$; 538.1686; amorphous powder; $[\alpha]_D -16.0^\circ$ ($c=0.5$, MeOH); UV (MeOH): 226, 280; IR (KBr): 3500–3200, 1730, 1700, 1640 1590, 1505, 1400, 950, 890, 830; 1H -NMR (250 MHz, D_2O): 5.18 (d, 5.6, H-1), 7.39 (d, 1.0, H-3), 2.85 (m, H-5, 9, H_2 -7''), 4.52 (br s, H-6), 5.67 (d, 1.2, H-7), 4.75 (H_2 -10), 4.72 (d, 7.9, H-1'), 7.12 (d, 8.4, H-2'', 6''), 6.81 (d, 8.4, H-3'', 5''), 2.73 (t, 6.9, H_2 -8''); ^{13}C -NMR (62.5 MHz, D_2O): 97.7 (C-1), 152.2 (C-3), 112.5 (C-4), 46.5 (C-5), 81.3 (C-6), 132.4 (C-7), 141.4 (C-8), 44.4 (C-9), 63.1 (C-10), 171.1 (C-11), 99.6 (C-1'), 73.5 (C-2'), 76.5 (C-3'), 70.3 (C-4'), 77.0 (C-5'), 61.5 (C-6'), 133.0 (C-1''), 130.5 (C-2'', 6''), 116.2 (C-3'', 5''), 154.7 (C-4''), 30.3 (C-7''), 36.4 (C-8''), 176.2 (C-9''). *Galium humifusum* (Rubiaceae).¹¹⁷

191. Humifusin B



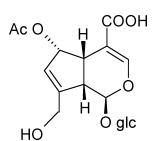
$C_{27}H_{32}O_{14}$: 580.1791; $[\alpha]_D^{20} -40.0^\circ$ ($c=0.4$, MeOH); UV (MeOH): 226, 280; IR (KBr): 3500—3200, 1729, 1700, 1650, 1620, 1600, 1510, 1255, 905, 825; 1H -NMR (250 MHz, D_2O): 4.98 (d, 6.9, H-1), 7.35 (d, 1.0, H-3), 2.90 (dt, 6.6, 1.0, H-5), 5.35 (bdd, 6.6, 1.0, H-6), 5.21 (br s, H-7), 2.50 (m, H-9, H_2 -8''), 4.60 (H_2 -10), 1.91 (s, AcO-10), 4.82 (d, 8.0, H-1'), 6.92 (d, 8.4, H-2', 6''), 6.61 (d, 8.4, H-3', 5''), 2.65 (t, 6.5, H_2 -7''); ^{13}C -NMR (62.5 MHz, D_2O): 98.1 (C-1), 154.4 (C-3), 108.9 (C-4), 41.6 (C-5), 83.0 (C-6), 128.9 (C-7), 143.5 (C-8), 45.6 (C-9), 62.9 (C-10), 171.3 (C-11), 99.6 (C-1'), 73.5 (C-2'), 76.9 (C-3''), 70.2 (C-4''), 76.4 (C-5''), 61.5 (C-6''), 132.7 (C-1''), 130.3 (C-2'', 6''), 116.0 (C-3'', 5''), 154.8 (C-4''), 30.2 (C-7''), 36.1 (C-8''), 175.9 (C-9''), 21.4, 174.4 (Ac). *Galium humifusum* (Rubiaceae).¹¹⁷⁾

192. 6-O-Acetylscandoside



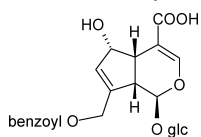
$C_{18}H_{24}O_{12}$: 432.1267; amorphous powder; $[\alpha]_D^{19} -82.7^\circ$ ($c=1.2$, MeOH); 1H -NMR (400 MHz, CD_3OD): 5.23 (d, 6.1, H-1), 7.46 (s, H-3), 3.26 (m, H-5), 5.56 (m, H-6), 5.75 (br s, H-7), 3.00 (dd, 7.3, 6.4, H-9), 4.32 and 4.15 (d, 15.4, H_2 -10), 4.64 (d, 7.8, H-1'), 3.17 (dd, 8.8, 7.8, H-2'), 3.34 (dd, 9.0, 8.8, H-3'), 3.23 (m, H-4', 5'), 3.83 (dd, 12.2, 2.0, H-6'), 3.60 (dd, 12.2, 5.4, H-6''), 1.98 (s, AcO-6); ^{13}C -NMR (100 MHz, CD_3OD): 97.7 (C-1), 154.0 (C-3), 110.1 (C-4), 42.1 (C-5), 83.6 (C-6), 127.0 (C-7), 150.3 (C-8), 46.8 (C-9), 60.9 (C-10), 170.1 (C-11), 100.2 (C-1'), 74.7 (C-2'), 77.8 (C-3'), 71.4 (C-4'), 78.3 (C-5'), 62.3 (C-6'), 21.2, 172.8 (OAc). *Morinda coreia* (Rubiaceae).¹¹³⁾ It was reported earlier from *Galium verum* (Rubiaceae) but detailed spectral data was not reported.²⁰²⁾

193. 6-O-epi-Acetylscandoside



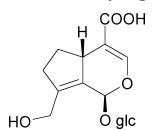
$C_{18}H_{24}O_{12}$: 432.1267; white amorphous powder; $[\alpha]_D^{19} -94.6^\circ$ ($c=0.19$, MeOH); UV (MeOH): 229 (3.91); IR (dry film): 3388, 1712, 1633; 1H -NMR (300 MHz, CD_3OD): 5.28 (d, 6.0, H-1), 7.43 (d, 1.0, H-3), 3.14 (m, H-5), 5.58 (dd, 3.0, 2.0, H-6), 5.79 (t, 2.0, H-7), 3.05 (br t, 6.0, H-9), 2.02 (s, AcO-6), 4.67 (d, 8.0, H-1'), 3.21 (dd, 9.0, 8.0, H-2''), 3.38 (t, 9.0, H-3'), 3.16 (m, H-4', 5'), 3.65 (dd, 12.0, 5.5, H-6'), 3.87 (dd, 12.0, 1.5, H-6''), ^{13}C -NMR (75 MHz, CD_3OD): 97.4 (C-1), 153.0 (C-3), 111.2 (C-4), 42.1 (C-5), 83.8 (C-6), 127.0 (C-7), 150.5 (C-8), 47.0 (C-9), 60.9 (C-10), 171.2 (C-11), 100.2 (C-1'), 74.7 (C-2''), 77.8 (C-3'), 71.5 (C-4'), 78.3 (C-5'), 62.7 (C-6'), 21.2, 172.7 (OAc). *Saprosma scortechinii* (Rubiaceae).¹¹²⁾

194. 10-O-Benzoyldeacetylasperulosidic acid



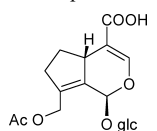
$C_{23}H_{26}O_{12}$: 494.1424; yellow amorphous powder; $[\alpha]_D^{26} -8.7^\circ$ ($c=0.14$, MeOH); UV (MeOH): 230 (4.59); IR (dry film): 3465, 1719, 1630; 1H -NMR (500 MHz, CD_3OD): 5.11 (d, 9.0, H-1), 7.63 (d, 1.0, H-3), 3.08 (ddd, 8.0, 6.0, 1.0, H-5), — (H-6), 6.10 (d, 1.5, H-7), 2.71 (dd, 9.0, 8.0, H-9), 5.24 (dd, 15.0, 1.5, H-10), 5.04 (d, 15.0, H-10), 4.75 (d, 8.0, H-1'), 3.27 (dd, 9.5, 8.0, H-2'), 3.39 (dd, 9.0, 8.5, H-3'), 3.30 (m, H-4', 5'), 3.63 (dd, 12.0, 6.0, H-6'), 3.88 (dd, 12.0, 2.0, H-6''), 8.06 (m, H-2'', 6''), 7.49 (m, H-3'', 5''), 7.61 (s, H-4''); ^{13}C -NMR (125 MHz, CD_3OD): 101.2 (C-1), 154.8 (C-3), 109.0 (C-4), 42.7 (C-5), 75.5 (C-6), 132.0 (C-7), 146.0 (C-8), 46.6 (C-9), 64.3 (C-10), 170.0 (C-11), 100.7 (C-1'), 75.0 (C-2'), 77.9 (C-3'), 71.6 (C-4'), 78.6 (C-5'), 63.0 (C-6'), 131.3 (C-1''), 130.6 (C-2'', 6''), 129.6 (C-3'', 5''), 167.7 (C-7''). *Saprosma scortechinii* (Rubiaceae).¹¹⁸⁾

195. Deacetylalpinoside (Arborescosidic acid)



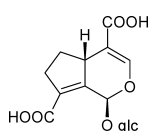
$C_{16}H_{20}O_{10}$: 374.1213; $[\alpha]_D^{20} -52^\circ$ ($c=0.56$, MeOH); UV (MeOH): 232; IR (KBr): 3370, 1690, 1632; 1H -NMR (300 MHz, CD_3OD): 6.27 (s, H-1), 7.21 (d, 1.8, H-3), 3.58 (m, H-5), 1.46 (m, H-6), 2.57 (m, H-6), 2.47 (m, H_2 -7), 4.68 (d, 8.0, H-1'), 3.16 (dd, 8.6, 7.9, H-2'), 3.37 (t, 8.6, H-3'), 3.30 (overlapped, H-4', 5'), 3.68 (dd, 11.9, 5.1, H-6'), 3.88 (dd, 11.9, 1.7, H-6''), ^{13}C -NMR (75 MHz, CD_3OD): 92.0 (C-1), 149.3 (C-3), 117.5 (C-4), 39.7 (C-5), 32.2 (C-6), 34.8 (C-7), 132.4 (C-8), 141.7 (C-9), 59.1 (C-10), 173.7 (C-11), 100.1 (C-1'), 74.7 (C-2'), 77.9 (C-3'), 71.5 (C-4'), 78.2 (C-5'), 62.7 (C-6'). *Globularia trichosantha* (Globulariaceae),¹¹⁰⁾ *Plantago atrata*, *P. maritima*, *P. stauntonii*, *P. subulata* (Plantaginaceae).³⁹⁾ *Erinus alpinus* (Plantaginaceae).¹¹⁴⁾

196. Alpinoside



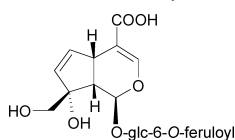
$C_{18}H_{24}O_{11}$: 416.1318; foam; $[\alpha]_D^{20} -54.0^\circ$ ($c=0.6$, MeOH); 1H -NMR (200 MHz, D_2O): 6.20 (s, H-1), 7.05 (s, H-3), 1.45 (m, H-6), 2.50 (m, H-6, H_2 -7), 4.75 (m, partly obscured by solvent peak, H_2 -10), 2.08 (s, AcO-10); 4.83 (d, 8.0, H-1'), ^{13}C -NMR (50 MHz, D_2O): 91.5 (C-1), 146.8 (C-3), 119.3 (C-4), 39.2 (C-5), 31.4 (C-6), 34.6 (C-7), 137.5 (C-8), 133.6 (C-9), 61.5 (C-10), C-11, not observed, 21.1, 174.7 (AcO-10), 99.8 (C-1'), 73.5 (C-2'), 76.4 (C-3'), 70.3 (C-4'), 77.1 (C-5'), 61.5 (C-6'). *Plantago alpina* (Plantaginaceae),¹¹⁵⁾ *Globularia trichosantha* (Globulariaceae),¹¹⁰⁾ *Veronica cymbalaria* (Scrophulariaceae).¹⁵⁶⁾

197. Erinoside



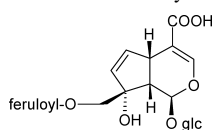
$C_{16}H_{20}O_{11}$: 388.1005; amorphous solid; 1H -NMR (500 MHz, D_2O): 6.65 (s, H-1), 7.34 (br s, H-3), 3.62 (m, H-5), 1.49 (m, H_{ax} -6), 2.52 (H_{eq} -6), 2.68 (m, H-7), 2.72 (m, H-7), 4.80 (d, 8.1, H-1'), 3.24 (dd, 9.5, 8.0, H-2'), 3.48 (t, 9.5, H-3'), 3.37 (t, 9.5, H-4'), 3.47 (m, H-5'), 3.70 (dd, 12.4, 5.8, H-6'), 3.88 (dd, 12.4, 1.2, H-6''); ^{13}C -NMR (125 MHz, D_2O): 92.1 (C-1), 150.4 (C-3), 115.4 (C-4), 38.8 (C-5), 31.2 (C-6), 34.5 (C-7), 139.9 (C-8), 138.1 (C-9), C-10 not observed, 99.1 (C-1'), 73.5 (C-2'), 76.2 (C-3'), 70.4 (C-4'), 77.0 (C-5'), 61.5 (C-6'). *Erinus alpinus* (Plantaginaceae).¹¹⁴⁾

198. 6'-O-E-Feruloylmonotropein

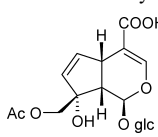


$C_{26}H_{30}O_{14}$: 566.1635; crystalline solid; mp 143—144 °C, $[\alpha]_D^{20} -30.2^\circ$ ($c=0.24$, MeOH); UV (MeOH): 218 (4.03), 235 (4.06), 327 (3.97); IR (KBr): 3426, 2930, 1693, 1633, 1515, 1163, 1075; 1H -NMR (400 MHz, CD_3OD): 5.57 (d, 2.2, H-1), 7.36 (s, H-3), 3.53—3.58 (m, H-5, 5', H_2 -10), 6.20 (dd, 5.1, 2.2, H-6), 5.60 (d, 5.1, H-7), 2.69 (d, 6.6, H-9), 4.69 (d, 7.7, H-1'), 3.23 (t, 8.0, H-2'), 3.38—3.44 (m, H-3', 4'), 4.33 (dd, 11.7, 5.6, H-6'), 4.50 (d, 11.7, H-6''), 7.20 (d, 1.7, H-2''), 6.80 (d, 8.3, H-5''), 7.08 (dd, 8.3, 1.7, H-6''), 7.64 (d, 15.9, H-7''), 6.41 (d, 15.9, H-8''), 3.88 (s, MeO-3''); ^{13}C -NMR (90 MHz, CD_3OD): 95.9 (C-1), 152.5 (C-3), 112.5 (C-4), 40.0 (C-5), 138.9 (C-6), 134.5 (C-7), 86.8 (C-8), 46.3 (C-9), 69.1 (C-10), 169.9 (C-11), 100.9 (C-1'), 75.4 (C-2'), 78.6 (C-3'), 72.2 (C-4'), 76.6 (C-5'), 65.4 (C-6'), 128.5 (C-1''), 112.5 (C-2''), 150.2 (C-3''), 151.4 (C-4''), 117.3 (C-5''), 125.1 (C-6''), 148.0 (C-7''), 116.0 (C-8''), 169.9 (C-9''), 57.3 (MeO-3''). *Paederia scandens* (Rubiaceae).¹¹⁹⁾

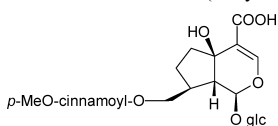
199. 10-O-E-Feruloylmonotropein



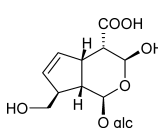
$C_{26}H_{30}O_{14}$: 566.1635; crystalline solid; mp 147—148 °C, $[\alpha]_D^{20} -26.0^\circ$ ($c=0.23$, MeOH); UV (MeOH): 219 (4.12), 234 (4.17), 327 (4.14); IR (KBr): 3423, 2936, 1694, 1633, 1515, 1159, 1073; 1H -NMR (400 MHz, CD_3OD): 5.69 (m, H-1, 7), 7.39 (s, H-3), 3.58—3.65 (m, H-5, 6'), 6.28 (dd, 5.5, 2.4, H-6), 2.71 (dd, 8.6, 2.2, H-9), 4.20 (d, 11.1, H-10), 4.34 (d, 11.1, H-10), 4.68 (d, 7.9, H-1'), 3.21 (t, 8.3, H-2'), 3.31—3.37 (m, H-3', 4', 5'), 3.84 (d, 12.4, H-6'), 7.21 (d, 1.8, H-2''), 6.81 (d, 8.2, H-5''), 7.09 (dd, 8.2, 1.8, H-6''), 7.64 (d, 15.8, H-7''), 6.40 (d, 15.8, H-8''), 3.89 (s, MeO-3''); ^{13}C -NMR (90 MHz, CD_3OD): 95.6 (C-1), 152.9 (C-3), 112.6 (C-4), 40.1 (C-5), 139.4 (C-6), 133.8 (C-7), 85.2 (C-8), 47.3 (C-9), 70.0 (C-10), 169.8 (C-11), 100.7 (C-1'), 75.4 (C-2'), 78.8 (C-3'), 72.2 (C-4'), 79.1 (C-5'), 63.3 (C-6'), 128.5 (C-1''), 112.6 (C-2''), 150.2 (C-3''), 151.5 (C-4''), 117.3 (C-5''), 125.1 (C-6''), 148.1 (C-7''), 115.9 (C-8''), 169.8 (C-9''), 57.3 (MeO-3''). *Paederia scandens* (Rubiaceae).¹¹⁹⁾

200. 10-*O*-Acetylmonotropein

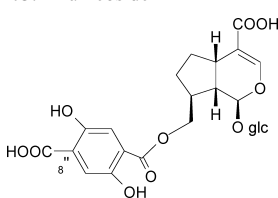
$C_{18}H_{24}O_{12}$; 432.1267; amorphous powder; $[\alpha]_D^{19} -95.3^\circ$ ($c=1.2$, MeOH); 1H -NMR (400 MHz, CD_3OD): 5.64 (d, 2.2, H-1), 7.36 (d, 1.2, H-3), 3.28 (m, H-5), 6.22 (dd, 5.7, 2.2, H-6), 5.60 (dd, 5.7, 2.0, H-7), 2.61 (dd, 8.8, 2.2, H-9), 4.16 and 4.06 (each d, 11.2, H_2 -10), 4.62 (d, 7.8, H-1'), 3.16 (dd, 8.8, 7.8, H-2'), 3.31 (dd, 9.3, 8.8, H-3'), 3.23 (m, H-4', 5'), 3.83 (br d, 11.5, H-6'), 3.64 (dd, 11.5, 4.9, H-6'), 2.05 (s, AcO); ^{13}C -NMR (100 MHz, CD_3OD): 94.7 (C-1), 152.4 (C-3), 111.0 (C-4), 39.0 (C-5), 138.2 (C-6), 132.7 (C-7), 84.1 (C-8), 46.5 (C-9), 70.6 (C-10), 170.1 (C-11), 99.8 (C-1'), 74.6 (C-2'), 78.0 (C-3'), 71.4 (C-4'), 78.3 (C-5'), 62.5 (C-6'), 20.8, 172.8 (OAc). *Morinda coreia* (Rubiaceae).¹¹³

201. Officinosidic acid (5-Hydroxy-10-*O*-(*p*-methoxycinnamoyl)-adoxosidic acid)

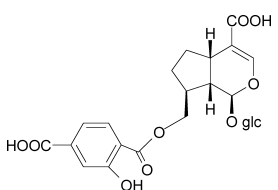
$C_{26}H_{32}O_{13}$; 552.1842; isolated as its pentaacetate; amorphous powder; $[\alpha]_D^{25} -53.1^\circ$ ($c=0.5$, $CHCl_3$); IR (?): 3035, 1700, 1680, 1520, 1240; 1H -NMR (400 MHz, $CDCl_3$): 5.48 (d, 2.5, H-1), 7.49 (br s, H-3), 2.01 (m, H-6), 2.90 (m, H-6), 1.30 (m, H-7), 1.80 (m, H-7), 2.30 (m, H-8), 1.96 (br, H-9), 4.05 (dd, 10.0, 6.0, H-10), 4.58 (dd, 10.0, 6.0, H-10), 3.80—5.28 (H-1'-6'), 7.57 (d, 8.5, H-2', 6''), 6.94 (d, 8.5, H-3', 5''), 3.84 (s, MeO-4''), 6.30 (d, 16.0, H-7''), 7.50 (d, 16.0, H-8''); ^{13}C -NMR (100 MHz, $CDCl_3$): 96.2 (C-1), 152.9 (C-3), 113.3 (C-4), 72.8 (C-5), 38.4 (C-6), 29.6 (C-7), 43.1 (C-8), 53.7 (C-9), 61.7 (C-10), 171.9 (C-11), 96.9 (C-1'), 70.7 (C-2'), 72.1 (C-3'), 68.2 (C-4'), 72.5 (C-5'), 61.6 (C-6'), 129.9 (C-1''), 132.4 (C-2'', 6''), 114.3 (C-3'', 5''), 165.4 (C-4''), 146.8 (C-7''), 117.6 (C-8''), 169.4 (C-9''), 55.2 (MeO-4''), 20.4×2, 20.5×2, 21.3, 169.4, 170.2×2, 170.7, 171.8 (5×Ac). *Avicennia officinalis* (Verbenaceae).¹⁰⁹

202. Formosinoside

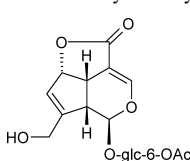
$C_{16}H_{24}O_{11}$; 392.1318; isolated as hexaacetate; amorphous powder; mp 144—146 °C; $[\alpha]_D +36.1^\circ$ ($c=3.17$, $CHCl_3$); IR (KBr): 3780, 1710, 1695, 1630, 1270, 1055; 1H -NMR (400 MHz, $CDCl_3$): 5.00 (d, 5.8, H-1), 5.92 (d, 7.6, H-3), 2.98 (dd, 7.6, 2.0, H-4), 3.53 (ddd, 9.0, 2.2, 2.0, H-5), 5.80 (dd, 6.0, 2.0, H-6), 5.55 (dd, 6.0, 1.5, H-7), 3.08 (dd, 9.0, 1.5, H-8), 3.00 (dd, 9.0, 5.8, H-9), 4.22 (dd, 11.0, 8.0, H_a -10), 4.90 (dd, 11.0, 3.0, H_b -10), 5.93 (d, 8.0, H-1'), 4.68 (m, H-2'), 4.42 (m, H-3'), 4.92 (m, H-4'), 4.78 (m, H-5'), 4.44 (dd, 11.9, 6.5, H_2 -6'), 1.98×2, 2.01, 2.02, 2.05, 2.09 (6×Ac); ^{13}C -NMR (100 MHz, $CDCl_3$): 98.1 (C-1), 91.5 (C-3), 46.6 (C-4), 42.4 (C-5), 136.6 (C-6), 134.6 (C-7), 39.4 (C-8), 42.3 (C-9), 67.2 (C-10), 180.3 (C-11), 99.3 (C-1'), 73.7 (C-2'), 76.1 (C-3'), 69.1 (C-4'), 74.1 (C-5'), 65.0 (C-6'), 20.6—21.9, 168.1—170.5 (6×Ac). *Tocoyena formosa* (Rubiaceae).¹²⁰

203. Blumeoside A

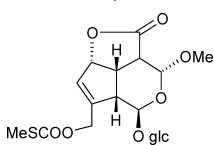
$C_{24}H_{28}O_{15}$; 556.1428; yellow amorphous powder; mp 147—149 °C; $[\alpha]_D^{20} -55.0^\circ$ ($c=2.3$, MeOH); UV (MeOH): 220 (4.42), 362 (3.64); IR (KBr): 3600—3100, 3000—2900, 1660, 1610, 1490, 1440; 1H -NMR (500 MHz, $DMSO-d_6$): 5.13 (d, 6.8, H-1), 7.38 (d, 1.0, H-3), 2.67 (br dd, 14.7, 6.8, H-5), 2.11 (m, H-6), 1.40 (m, H-6), 1.81 (m, H_a -7), 1.40 (m, H_b -7), 2.32 (m, H-8), 1.97 (dd, 13.7, 6.8, H-9), 4.27 (m, H_2 -10), 4.51 (d, 7.8, H-1'), 2.96 (t, 8.5, H-2'), 3.15 (t, 8.8, H-3'), 3.03 (t, 9.3, H-4'), 3.13 (m, H-5'), 3.41 (dd, 11.8, 6.5, H-6'), 3.64 (dd, 11.8, 2.0, H-6'), 7.30 (s, H-3''), 7.23 (s, H-6''), ^{13}C -NMR (125 MHz, $DMSO-d_6$): 96.4 (C-1), 151.1 (C-3), 110.6 (C-4), 34.8 (C-5), 31.8 (C-6), 27.1 (C-7), 39.0 (C-8), 42.4 (C-9), 68.0 (C-10), 170.1 (C-11), 99.0 (C-1'), 73.0 (C-2'), 76.7 (C-3''), 70.0 (C-4''), 77.1 (C-5''), 61.1 (C-6''), 119.3 (C-1''), 150.6 (C-2''), 117.6 (C-3''), 120.1 (C-4''), 152.0 (C-5''), 117.1 (C-6''), 167.1 (C-7''), 167.8 (C-8''). *Fagraea blumei* (Loganiaceae).¹²¹

204. Blumeoside C

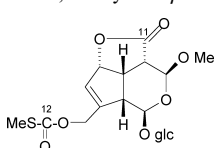
$C_{24}H_{28}O_{14}$; 540.1478; cream colored amorphous powder; mp 171—173 °C; $[\alpha]_D^{20} -40.0^\circ$ ($c=2.0$, MeOH); UV (MeOH): 215 (4.21), 240 (3.98), 323 (3.36); 1H -NMR (200 MHz, $DMSO-d_6$): 5.13 (d, 7.1, H-1), 7.42 (s, H-3), 2.77 (m, H-5), 2.16 (m, H-6), 1.40 (m, H-6), 1.84 (m, H_a -7), 1.40 (m, H_b -7), 2.33 (m, H-8), 1.97 (m, H-9), 4.24 (br d, 5.6, H_2 -10), 4.53 (d, 7.8, H-1'), 2.95—3.80 (partly obsc. by H_2O signal, H-2', 3', 4', 5'), H_2 -6' signals are obsc. by H_2O signal, 7.33 (unresolved, H-3'', 5''), 7.82 (d, 8.3, H-6''); ^{13}C -NMR (50 MHz, $DMSO-d_6$): 96.4 (C-1), 151.3 (C-3), 110.6 (C-4), 34.9 (C-5), 32.0 (C-6), 27.3 (C-7), 39.0 (C-8), 42.5 (C-9), 67.6 (C-10), 170.5 (C-11), 99.0 (C-1'), 73.1 (C-2'), 76.7 (C-3''), 69.9 (C-4''), 77.2 (C-5''), 61.1 (C-6''), 113.6 (C-1''), 162.0 (C-2''), 117.1 (C-3''), 133.6 (C-4''), 117.7 (C-5''), 130.4 (C-6''), 168.0 (C-7''), 165.5 (C-8''). *Fagraea blumei* (Loganiaceae).¹²¹

205. 6'-Acetyldeacetylasperuloside

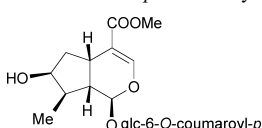
$C_{18}H_{22}O_{11}$; 414.1162; white powder; $[\alpha]_D^{25} -156.6^\circ$ ($c=0.06$, MeOH); UV (MeOH): 233; IR (KBr): 3446, 1742, 1658, 1246, 1018; 1H -NMR (500 MHz, D_2O): 5.73 (d, 2.0, H-1), 7.25 (d, 2.0, H-3), 3.54 (m, H-5), 5.54 (m, H-6), 5.56 (m, H-7), 3.21 (m, H-9), 4.08 (br, H_2 -10), 4.73 (d, 9.1, H-1'), 3.15 (t, 8.5, H-2'), 3.36—3.56 (m, H-3', 4', 5'), 4.17 (dd, 12.3, 5.0, H-6'), 4.29 (dd, 12.3, 2.1, H-6'), 1.99 (AcO-6'); ^{13}C -NMR (125 MHz, D_2O): 95.7 (C-1), 152.6 (C-3), 107.4 (C-4), 38.6 (C-5), 89.4 (C-6), 127.6 (C-7), 149.9 (C-8), 45.9 (C-9), 61.3 (C-10), 176.5 (C-11), 101.3 (C-1'), 75.2 (C-2'), 78.0 (C-3'), 72.1 (C-4'), 76.5 (C-5'), 65.8 (C-6'), 22.9, 176.8 (AcO-6'). *Hedyotis chrysotricha* (Rubiaceae).¹²²

206. 3,4-Dihydro-3 α -methoxyphaederoside

$C_{19}H_{26}O_{12}S$; 478.1144; yellow amorphous powder; $[\alpha]_D^{26} -63.3^\circ$ ($c=0.12$, MeOH); UV (MeOH): 202 (3.95); IR (dry film): 3416, 1769, 1712, 1652; 1H -NMR (500 MHz, CD_3OD): 5.09 (d, 6.0, H-1), 5.01 (d, 3.5, H-3), 3.25 (m, H-4), 3.40 (m, H-5), 5.37 (br d, 6.5, H-6), 5.98 (s, H-7), 3.00 (dd, 8.5, 6.0, H-9), 4.90 (d, 15.0, H-10), 5.08 (d, 15.0, H-10), 4.68 (d, 8.0, H-1'), 3.21 (dd, 9.0, 8.0, H-2'), 3.38 (t, 9.0, H-3'), 3.30 (m, H-4', 5'), 3.66 (dd, 12.0, 5.5, H-6'), 3.87 (d, 12.0, H-6'), 2.35 (s, SMe), 3.52 (s, MeO-3); ^{13}C -NMR (125 MHz, CD_3OD): 96.7 (C-1), 98.6 (C-3), 44.4 (C-4), 37.7 (C-5), 87.7 (C-6), 126.8 (C-7), 151.6 (C-8), 46.3 (C-9), 65.2 (C-10), 177.0 (C-11), 173.0 (COO-10), 99.6 (C-1'), 74.9 (C-2'), 78.0 (C-3'), 71.6 (C-4'), 78.2 (C-5'), 62.8 (C-6'). *Saprosma scortechinii* (Rubiaceae).¹¹⁸

207. 3,4-Dihydro-3 β -methoxyphaederoside

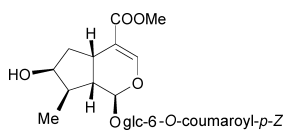
$C_{19}H_{26}O_{12}S$; 478.1144; brown powder; $[\alpha]_D^{20} -8.6^\circ$ ($c=1.16$, MeOH); IR (KBr): 3334, 2935, 1768, 1714, 1148, 1073, 944; 1H -NMR (600 MHz, CD_3OD): 5.10 (d, 6.0, H-1), 5.01 (d, 3.6, H-3), 3.25 (dd, 10.4, 3.6, H-4), 3.40 (ddd, 10.4, 9.1, 6.6, H-5), 5.37 (br d, 6.6, H-6), 5.98 (br s, H-7), 3.02 (ddd, 9.1, 6.0, 0.8, H-9), 4.89 and 5.08 (each d, 15.7, H_2 -10), 3.51 (s, MeO-3), 2.35 (s, SMe), 4.69 (d, 8.0, H-1'), 3.21 (dd, 9.3, 8.0, H-2'), 3.38 (dd, 9.3, 9.1, H-3'), 3.27 (dd, 9.1, 9.1, H-4'), 3.31 (m, H-5'), 3.68 (ddd, 11.8, 4.1, 1.6, H-6'), 3.88 (dd, 11.8, 1.4, H-6'); ^{13}C -NMR (150 MHz, CD_3OD): 96.7 (C-1), 98.5 (C-3), 44.4 (C-4), 37.6 (C-5), 87.7 (C-6), 126.8 (C-7), 151.6 (C-8), 46.3 (C-9), 65.2 (C-10), 177.0 (C-11), 173.0 (C-12), 56.5 (OMe), 13.6 (SMe), 99.6 (C-1'), 74.9 (C-2'), 78.0 (C-3'), 71.5 (C-4'), 78.2 (C-5'), 62.8 (C-6'). *Paederia scandens* (Rubiaceae).¹²³

208. 6'-*O*-*trans-p*-Coumaroylloganin

$C_{26}H_{32}O_{12}$; 536.1893; powder; $[\alpha]_D^{25} -32.0^\circ$ ($c=1.0$, MeOH); UV (MeOH): 231 (4.29), 300 sh (4.25), 314 (4.31); IR (KBr): 3464, 1698, 1638, 1608, 1518, 832; 1H -NMR (500 MHz, CD_3OD): 5.05 (d, 5.0, H-1), 7.39 (d, 1.5, H-3), 3.08 (br q, 8.0, H-5), 1.45 (ddd, 14.0, 9.0, 5.0, H-6), 2.17 (ddd, 14.0, 7.5, 1.5, H-6), 3.98 (br t, 5.0, H-7), 1.83 (m, H-8), 1.93 (td, 9.0, 5.5, H-9), 1.03 (d, 7.0, H_2 -10), 3.66 (s, MeO-11), 4.66 (d, 8.0, H-1'), 3.23 (br t, 8.5, H-2'), 3.40 (t, 9.0, H-3'), 3.36 (t, 9.0, H-4'), 3.56 (ddd, 9.0, 6.5, 2.5, H-5'), 4.42 (dd, 12.0, 6.5, H-6'), 4.47 (dd, 12.0, 2.5, H-6'), 7.44 (d,

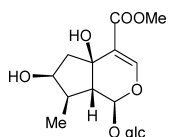
8.5, H-2'', 6''), 6.80 (d, 8.5, H-3'', 5''), 7.62 (d, 16.0, H-7''), 6.34 (d, 16.0, H-8''); ¹³C-NMR (125 MHz, CD₃OD): 98.5 (C-1), 152.4 (C-3), 113.8 (C-4), 32.7 (C-5), 43.0 (C-6), 75.0 (C-7)^a, 42.5 (C-8), 46.4 (C-9), 13.8 (C-10), 169.5 (C-11), 51.7 (OMe), 100.5 (C-1'), 74.7 (C-2')^a, 78.0 (C-3'), 71.9 (C-4'), 75.7 (C-5'), 64.4 (C-6'), 127.1 (C-1''), 131.3 (C-2''), 116.9 (C-3''), 161.5 (C-4''), 146.9 (C-7''), 115.0 (C-8''), 169.0 (C-9''). *Jasminium hemsleyi* (Oleaceae).¹²⁴

209. 6'-O-cis-p-Coumaroylloganin



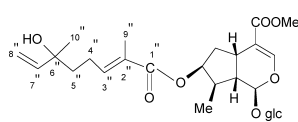
C₂₆H₃₂O₁₂; 536.1893; powder; [α]_D²⁵ -58.0° (c=1.0, MeOH); UV (MeOH): 229 (4.33), 298 sh (4.15), 311 (4.20); IR (KBr): 3456, 1698, 1634, 1610, 1518; ¹H-NMR (500 MHz, CD₃OD): 5.01 (d, 5.0, H-1), 7.39 (d, 1.5, H-3), 3.08 (br q, 8.0, H-5), 1.46 (ddd, 14.0, 9.0, 5.0, H-6), 2.19 (ddd, 14.0, 8.0, 1.5, H-6), 3.93 (td, 5.0, 1.5, H-7), 1.81 (m, H-8), 1.94 (td, 9.0, 5.0, H-9), 1.02 (d, 7.0, H₃-10), 3.68 (MeO-11), 4.62 (d, 8.0, H-1'), 3.21 (dd, 9.0, 8.0, H-2'), 3.38 (t, 9.0, H-3'), 3.34 (m, H-4'), 3.51 (ddd, 9.5, 6.5, 2.0, H-5'), 4.33 (dd, 12.0, 6.5, H-6'), 4.46 (dd, 12.0, 2.0, H-6'), 7.65 (d, 8.5, H-2'', 6''), 6.75 (d, 8.5, H-3'', 5''), 6.87 (d, 13.0, H-7''), 5.77 (d, 13.0, H-8''); ¹³C-NMR (125 MHz, CD₃OD): 98.5 (C-1), 152.4 (C-3), 113.8 (C-4), 32.6 (C-5), 43.0 (C-6), 75.0 (C-7)^a, 42.5 (C-8), 46.5 (C-9), 13.7 (C-10), 169.5 (C-11), 51.7 (OMe), 100.4 (C-1'), 74.7 (C-2')^a, 77.9 (C-3'), 71.8 (C-4'), 75.6 (C-5'), 64.3 (C-6'), 127.6 (C-1''), 133.9 (C-2''), 116.2 (C-3''), 160.3 (C-4''), 145.5 (C-7''), 115.0 (C-8''), 168.0 (C-9''). *Jasminium hemsleyi* (Oleaceae).¹²⁴

210. 5-Hydroxyloganin



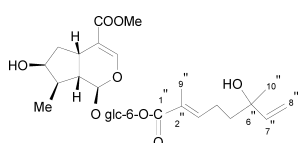
C₁₇H₂₆O₁₁; 406.1475; [α]_D²¹ -88.0° (c=0.6, MeOH); UV (MeOH): 232; ¹H-NMR (250 MHz, CD₃OD): 5.63 (d, 2.0, H-1), 7.40 (s, H-3), 2.47 (dd, 15.0, 5.6, H-6), 2.16 (dd, 15.0, 2.7, H-6), 3.92 (ddd, 5.6, 5.1, 2.7, H-7), 1.67 (ddq, 12.0, 7.0, 5.1, H-8), 2.33 (dd, 12.0, 2.0, H-9), 1.10 (d, 7.0, H₃-10), 3.72 (s, MeO-11), 4.57 (d, 8.0, H-1'), 3.18 (dd, 9.0, 8.0, H-2'), ca. 3.30 (m, H-3', 4', 5'), 3.67 (dd, 12.0, 5.2, H-6'), 3.89 (dd, 12.0, 1.8, H-6'); ¹³C-NMR (63 MHz, CD₃OD): 96.0 (C-1), 152.4 (C-3), 115.4 (C-4), 72.9 (C-5), 49.0 (C-6), 74.4 (C-7), 41.4 (C-8), 55.0 (C-9), 13.1 (C-10), 168.2 (C-11), 99.9 (C-1'), 73.5 (C-2'), 77.6 (C-3'), 71.6 (C-4'), 78.5 (C-5'), 62.7 (C-6'), 51.6 (OMe). *Euclide bartonioides* (Loasaceae).¹²⁵

211. Jashemsloside A



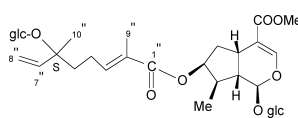
C₂₇H₄₀O₁₂; 556.2519; powder; [α]_D²⁸ -36.1° (c=1.05, MeOH); UV (MeOH): 225 (4.32); IR (KBr): 3432, 1708, 1640; ¹H-NMR (500 MHz, CD₃OD): 5.30 (d, 5.0, H-1), 7.43 (d, 1.5, H-3), 3.11 (br q, 8.0, H-5), 1.76 (ddd, 14.5, 8.0, 5.0, H-6), 2.28 (ddd, 14.5, 8.0, 1.5, H-6), 5.18 (td, 5.0, 1.5, H-7), 2.15 (m, H-8), 2.08 (td, 8.5, 5.0, H-9), 1.06 (d, 6.5, H₃-10), 3.69 (s, MeO-11), 4.66 (d, 8.0, H-1'), 3.19 (dd, 9.0, 8.0, H-2'), 3.37 (t, 9.0, H-3'), 3.66 (dd, 12.0, 6.0, H-6'), 3.90 (dd, 12.0, 2.0, H-6'), 6.77 (tq, 8.0, 1.5, H-3''), 2.23 (m, H₂-4''), 1.62 (m, H₂-5''), 5.92 (dd, 17.0, 11.0, H-7''), 5.06 (dd, 11.0, 1.5, H-8''), 5.23 (dd, 17.0, 1.5, H-8''), 1.83 (d, 1.5, H₃-9''), 1.27 (s, H₃-10''); ¹³C-NMR (125 MHz, CD₃OD): 97.4 (C-1), 152.5 (C-3), 113.2 (C-4), 32.5 (C-5), 40.4 (C-6), 78.7 (C-7), 40.1 (C-8), 47.2 (C-9), 13.7 (C-10), 169.3 (C-11), 51.7 (MeO-11), 100.1 (C-1'), 74.7 (C-2'), 77.9 (C-3'), 71.5 (C-4'), 78.3 (C-5'), 62.7 (C-6'), 169.2 (C-1''), 128.8 (C-2''), 144.0 (C-3''), 24.5 (C-4''), 41.7 (C-5''), 73.6 (C-6''), 145.9 (C-7''), 112.4 (C-8''), 12.5 (C-9''), 27.8 (C-10''). *Jasminium hemsleyi* (Oleaceae).¹²⁴

212. Jashemsloside B



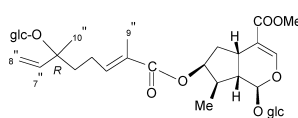
C₂₇H₄₀O₁₂; 556.2519; powder; [α]_D²⁴ -36.9° (c=1.09, MeOH); UV (MeOH): 225 (4.26); IR (KBr): 3448, 1710, 1638; ¹H-NMR (500 MHz, CD₃OD): 5.05 (d, 5.5, H-1), 7.42 (d, 1.0, H-3), 3.11 (br q, 8.0, H-5), 2.25 (ddd, 14.0, 7.5, 1.5, H-6), 1.50 (ddd, 14.0, 8.5, 4.5, H-6), 4.01 (brt, 4.5, H-7), 1.83 (m, H-8), 1.95 (td, 9.0, 5.5, H-9), 1.05 (d, 7.0, H₃-10), 3.69 (s, MeO-11), 4.64 (d, 8.0, H-1'), 3.20 (dd, 9.0, 8.0, H-2'), 3.38 (t, 9.0, H-3'), 3.34 (t, 9.0, H-4'), 3.52 (ddd, 9.0, 6.5, 2.5, H-5'), 4.28 (dd, 12.0, 6.5, H-6'), 4.48 (dd, 12.0, 2.5, H-6'), 6.78 (tq, 7.0, 1.5, H-3''), 2.22 (m, H₂-4''), 1.59 (m, H₂-5''), 5.90 (dd, 17.5, 11.0, H-7''), 5.22 (dd, 17.5, 1.5, H-8''), 5.05 (dd, 11.0, 1.5, H-8''); ¹³C-NMR (125 MHz, CD₃OD): 98.4 (C-1), 152.4 (C-3), 113.8 (C-4), 32.6 (C-5), 43.1 (C-6), 74.9 (C-7)^a, 42.4 (C-8), 46.4 (C-9), 13.7 (C-10), 169.4 (C-11), 51.7 (MeO-11), 100.3 (C-1'), 74.7 (C-2')^a, 77.9 (C-3'), 71.8 (C-4'), 75.7 (C-5'), 64.5 (C-6'), 169.3 (C-1''), 128.5 (C-2''), 144.2 (C-3''), 24.5 (C-4''), 41.8 (C-5''), 73.6 (C-6''), 145.9 (C-7''), 112.5 (C-8''), 12.5 (C-9''), 27.9 (C-10''). *Jasminium hemsleyi* (Oleaceae).¹²⁴

213. Jashemsloside C



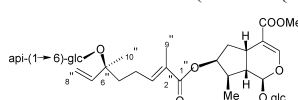
C₃₃H₅₀O₁₇; 718.3047; powder; [α]_D²⁶ -35.4° (c=0.93, MeOH); UV (MeOH): 225 (4.32); IR (KBr): 3464, 1710, 1642; ¹H-NMR (500 MHz, CD₃OD): 5.31 (d, 4.5, H-1), 7.43 (brs, H-3), 3.11 (br q, 8.0, H-5), 1.76 (ddd, 15.0, 8.0, 5.0, H-6), 2.28 (ddd, 15.0, 8.0, 1.0, H-6), 5.18 (td, 5.0, 1.0, H-7), 2.14 (m, H-8), 2.10 (td, 8.0, 4.5, H-9), 1.06 (d, 7.0, H₃-10), 3.69 (s, MeO-11), 4.66 (d, 8.0, H-1'), 3.20 (dd, 9.0, 8.0, H-2'), 3.66 (dd, 12.0, 6.0, H-6'), 3.90 (dd, 12.0, 2.0, H-6'), 6.78 (tq, 7.5, 1.5, H-3''), 2.32 (m, H₂-4''), 1.71 (m, H₂-5''), 5.95 (dd, 18.0, 11.0, H-7''), 5.22 (dd, 11.0, 1.0, H-8''), 5.28 (dd, 18.0, 1.0, H-8''), 1.83 (brs, H₃-9''), 1.41 (s, H₃-10''), 4.37 (d, 8.0, H-1''), 3.17 (dd, 9.0, 8.0, H-2''), 3.63 (dd, 12.0, 5.5, H-6''), 3.81 (dd, 12.0, 2.0, H-6''); ¹³C-NMR (125 MHz, CD₃OD): 97.5 (C-1), 152.6 (C-3), 113.4 (C-4), 32.6 (C-5), 40.5 (C-6), 78.8 (C-7)^a, 41.1 (C-8), 47.3 (C-9), 13.8 (C-10), 169.4 (C-11), 51.8 (MeO-11), 100.3 (C-1'), 74.8 (C-2')^a, 78.1 (C-3')^a, 71.7 (C-4')^b, 78.3 (C-5')^a, 62.9 (C-6')^a, 169.4 (C-1''), 128.9 (C-2''), 144.4 (C-3''), 24.5 (C-4''), 41.2 (C-5''), 81.1 (C-6''), 144.3 (C-7'')^c, 116.1 (C-8''), 12.5 (C-9''), 23.6 (C-10''), 99.6 (C-1''), 75.3 (C-2''), 78.5 (C-3'')^a, 71.8 (C-4'')^b, 77.7 (C-5'')^a, 62.9 (C-6''). *Jasminium hemsleyi* (Oleaceae).¹²⁴

214. Jashemsloside D



C₃₃H₅₀O₁₇; 718.3047; powder; [α]_D²⁶ -30.9° (c=1.20, MeOH); UV (MeOH): 225 (4.31); IR (KBr): 3424, 1710, 1642; ¹H-NMR (500 MHz, CD₃OD): 5.31 (d, 5.0, H-1), 7.43 (d, 1.0, H-3), 3.11 (br q, 8.0, H-5), 1.71-1.79 (m, H-6, H₂-5''), 2.28 (ddd, 15.0, 8.0, 1.5, H-6), 5.18 (m, H-7), 2.14 (m, H-8), 2.10 (td, 8.5, 5.0, H-9), 1.06 (d, 6.5, H₃-10), 3.69 (MeO-11), 4.66 (d, 8.0, H-1'), 3.20 (dd, 9.0, 8.0, H-2'), 3.66 (dd, 12.0, 6.0, H-6'), 3.90 (dd, 12.0, 2.0, H-6'), 6.79 (tq, 7.5, 1.5, H-3''), 2.35 (m, H₂-4''), 6.10 (dd, 17.5, 11.0, H-7''), 5.18 (dd, 11.0, 1.0, H-8''), 5.24 (dd, 17.5, 1.0, H-8''), 4.34 (d, 8.0, H-1''), 3.17 (dd, 9.0, 8.0, H-2''), 3.65 (dd, 12.0, 5.5, H-6''), 3.79 (dd, 12.0, 2.0, H-6''); ¹³C-NMR (125 MHz, CD₃OD): 97.5 (C-1), 152.6 (C-3), 113.4 (C-4), 32.6 (C-5), 40.5 (C-6), 78.8 (C-7)^a, 41.1 (C-8), 47.2 (C-9), 13.8 (C-10), 169.4 (C-11), 51.8 (MeO-11), 100.3 (C-1'), 74.8 (C-2')^a, 78.0 (C-3')^a, 71.6 (C-4')^b, 78.3 (C-5')^a, 62.8 (C-6')^a, 169.4 (C-1''), 128.9 (C-2''), 144.4 (C-3''), 24.4 (C-4''), 39.5 (C-5''), 81.4 (C-6''), 144.4 (C-7''), 115.3 (C-8''), 12.6 (C-9''), 24.0 (C-10''), 99.4 (C-1''), 75.2 (C-2''), 78.5 (C-3'')^a, 71.7 (C-4'')^b, 77.7 (C-5'')^a, 62.9 (C-6''). *Jasminium hemsleyi* (Oleaceae).¹²⁴

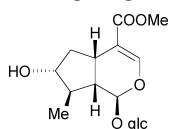
215. Jashemsloside E (6''S-7-O-{(6-O-[β-D-Apiofuranosyl-(1→6)-β-D-glucopyranosyl]menthialfoliyl)-loganin



C₃₈H₅₈O₂₁; 850.3470; amorphous powder; [α]_D -42.2° (c=1.01, MeOH); UV (MeOH): 224 (4.29); IR (KBr): 3439, 1716, 1705, 1699, 1647, 1636; ¹H-NMR (500 MHz, CD₃OD): 5.31 (d, 4.5, H-1), 7.43 (d, 1.5, H-3), 3.11 (br q, 8.0, H-5), 1.79 (ddd, 14.5, 8.0, 5.0, H-6), 2.28 (ddd, 14.5, 8.0, 1.5, H-6), 5.18 (td, 5.0, 1.5, H-7), 2.24 (m, H-8), 2.10 (td, 9.0, 4.5, H-9), 1.07 (d, 6.5, H₃-10), 3.69 (s, MeO-11), 4.67 (d, 8.0, H-1'), 3.21

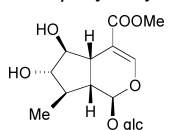
(dd, 9.5, 8.0, H-2'), 3.38 (t, 9.5, H-3'), 3.26 (t, 9.5, H-4'), 3.33 (m, H-5'), 3.67 (dd, 11.5, 5.5, H-6'), 3.90 (dd, 11.5, 1.5, H-6'), 6.78 (tq, 7.5, 1.0, H-3''), 2.32 (m, H₂-4''), 1.72 (m, H₂-5''), 5.94 (dd, 17.5, 11.0, H-7''), 5.23 (dd, 11.0, 1.0, H-8''), 1.83 (d, 1.0, H₃-9''), 1.40 (s, H₃-10''), 4.36 (d, 8.0, H-1'''), 3.17 (dd, 9.5, 8.0, H-2'''), 3.32 (t, 9.5, H-3'''), 3.25 (t, 9.5, H-4'''), 3.31 (m, H-5'''), 3.54 (dd, 11.5, 6.5, H-6'''), 3.94 (dd, 11.5, 2.0, H-6'''), 4.97 (d, 2.5, H-1'''), 3.87 (d, 2.5, H-2'''), 3.76 (d, 9.5, H-4'''), 3.96 (d, 9.5, H-4'''), 3.58 (s, H₂-5'''); ¹³C-NMR (125 MHz, CD₃OD): 97.5 (C-1), 152.6 (C-3), 113.4 (C-4), 32.6 (C-5), 40.5 (C-6), 78.8 (C-7)^a, 41.1 (C-8), 47.3 (C-9), 13.8 (C-10), 169.4 (C-11), 51.8 (OMe), 100.2 (C-1'), 74.8 (C-2'), 78.1 (C-3')^a, 71.7 (C-4')^b, 78.3 (C-5')^a, 62.8 (C-6'), 169.4 (C-1''), 128.9 (C-2''), 144.4 (C-3''), 24.5 (C-4''), 41.2 (C-5''), 81.1 (C-6''), 144.2 (C-7''), 116.1 (C-8''), 12.6 (C-9''), 23.7 (C-10''), 99.6 (C-1'''), 75.3 (C-2'''), 78.5 (C-3'''), 71.9 (C-4'''), 76.6 (C-5'''), 62.9 (C-6'''), 111.1 (C-1'''), 78.2 (C-2'''), 80.6 (C-3'''), 75.1 (C-4'''), 65.8 (C-5'''). *Jasminum hemsleyi* (Oleaceae).¹²⁶⁾

216. 7-*epi*-Loganin



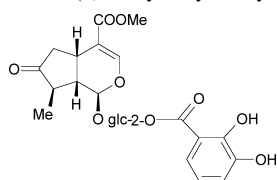
C₁₇H₂₆O₁₀; 390.1526; white amorphous powder; [α]_D²⁸ -18.0° (c=0.63, MeOH); UV (MeOH): 235 (3.97); IR (KBr): 3400, 2957, 1695, 1636, 1439, 1097, 1080; ¹H-NMR (500 MHz, CD₃OD): 5.33 (d, 5.0, H-1), 7.41 (d, 1.5, H-3), 2.86 (br q, 8.0, H-5), 1.35 (dt, 13.0, 8.0, H-6), 2.51 (dt, 13.0, 8.0, H-6), 3.67 (t, 8.0, H-7), 1.74 (dq, 8.0, 7.0, H-8), 1.80 (td, 8.0, 5.0, H-9), 1.13 (d, 7.0, H₃-10), 3.69 (s, MeO-11), 4.65 (d, 7.5, H-1'), 3.18 (t, 9.0, 7.5, H-2'), 3.37 (t, 9.0, H-3'), 3.26 (dd, 9.0, 8.0, H-4'), 3.27—3.33 (m, H-5'), 3.65 (dd, 12.0, 6.0, H-6'), 3.89 (dd, 12.0, 4.0, H-6'); ¹³C-NMR (125 MHz, CD₃OD): 97.7 (C-1), 152.5 (C-3), 113.3 (C-4), 31.4 (C-5), 42.0 (C-6), 79.7 (C-7), 44.0 (C-8), 27.1 (C-9), 17.7 (C-10), 169.5 (C-11), 51.7 (OMe), 100.4 (C-1'), 74.8 (C-2'), 78.4 (C-3'), 71.7 (C-4'), 62.8 (C-6'). *Rauwolfia serpentina* (Apocynaceae).¹²⁸⁾

217. 6 β -Hydroxy-7-*epi*-loganin



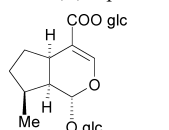
C₁₇H₂₆O₁₁; 406.1475; ¹H-NMR (250 MHz, CD₃OD): 5.40 (d, 4.0, H-1), 7.44 (d, 1.2, H-3), 2.75 (br ddd, 9.0, 5.0, 1.0, H-5), 3.70 (H-6, H-6'), 3.46 (dd, 8.5, 6.0, H-7), 1.70 (m, H-8), 2.42 (dt, 9.0, 4.0, H-9), 1.16 (d, 6.5, H₃-10), 3.73 (s, MeO-11), 4.63 (d, 7.5, H-1'), 3.16 (dd, 8.0, 7.5, H-2'), 3.25—3.40 (obsc. by solvent signal, H-3', 4', 5'), 3.89 (dd, 12.0, 2.0, H-6'); ¹³C-NMR (62.5 MHz, CD₃OD): 96.4 (C-1), 153.0 (C-3), 111.2 (C-4), 39.4 (C-5), 84.3 (C-6), 85.8 (C-7), 42.6 (C-8), 44.4 (C-9), 17.2 (C-10), 170.0 (C-11), 100.1 (C-1'), 74.7 (C-2'), 78.0 (C-3'), 71.5 (C-4'), 78.3 (C-5'), 62.7 (C-6'). *Picconia excelsa* (Oleaceae).⁸⁸⁾

218. 2'-(2,3-Dihydroxybenzoyloxy)-7-ketologanin



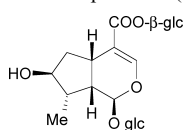
C₂₄H₂₈O₁₃; 524.1529; crystals (Me₂CO); mp 202—203 °C; ¹H-NMR (400 MHz, CD₃OD): 5.63 (d, 2.4, H-1), 7.01 (s, H-3), 3.03 (bt, 8.6, H-5), 2.40 (overlapped peaks, H₆-6), 2.56 (dd, 19.2, 8.0, H₆-6), 1.94 (m, H-8), 2.33 (overlapped peaks, H-3'), 3.03 (s, MeO-11), 5.03 (d, 8.4, H-1'), 5.01 (dd, 8.4, H-2'), 3.73 (overlapped peaks, H-3'), 3.43 (dd, 8.4, H-4'), 3.49 (overlapped peaks, H-5'), 3.97 (dd, 11.6, 2.0, H-6'), 3.74 (overlapped peaks, H-6'), 7.03 (dd, 8.0, 1.2, H-4''), 6.75 (dd, 8.0, 8.0, H-5''), 7.36 (dd, 8.0, 1.2, H-6''); ¹³C-NMR (100 MHz, CD₃OD): 95.2 (C-1), 152.1 (C-3), 111.3 (C-4), 27.6 (C-5), 42.9 (C-6), 220.2 (C-7), 44.2 (C-8), 46.4 (C-9), 13.1 (C-10), 167.9 (C-11), 51.7 (MeO-11), 98.1 (C-1'), 75.4 (C-2'), 75.5 (C-3'), 71.7 (C-4'), 78.6 (C-5'), 62.6 (C-6'), 113.6 (C-1''), 151.5 (C-2''), 147.0 (C-3''), 121.8 (C-4''), 120.0 (C-5''), 121.3 (C-6''), 170.6 (C-7''). *Gentiana kurroo* (Gentianaceae).¹³¹⁾

219. 1,5,9-*epi*-Deoxyloganic acid glucosyl ester



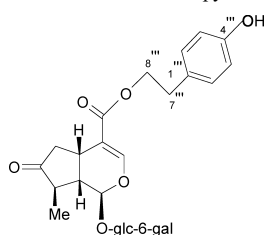
C₂₂H₃₄O₁₄; 522.1948; amorphous powder; [α]_D²⁷ +37.2° (c=0.98, MeOH); UV (MeOH): 240 (4.01); IR (KBr): 3349, 1704, 1637; ¹H-NMR (400 MHz, CD₃OD): 5.34 (d, 4.0, H-1), 7.55 (s, H-3), 2.96 (m, H-5), 1.65 (m, H-6), 2.01 (m, H-6), 1.30 (m, H₂-7), 1.78 (m, H₂-7), 2.30 (m, H-8), 2.44 (dt, 8.8, 4.0, H-9), 1.07 (d, 7.6, H₃-10), 4.58 (d, 8.0, H-1'), 3.22 (dd, 8.4, 8.0, H-2'), 5.53 (d, 7.6, H-1''); ¹³C-NMR (100 MHz, CD₃OD): 100.9 (C-1), 154.9 (C-3), 112.7 (C-4), 33.9 (C-5), 32.2 (C-6), 33.7 (C-7), 37.1 (C-8), 44.3 (C-9), 16.7 (C-10), 167.6 (C-11), 103.9 (C-1'), 75.2 (C-2'), 78.3 (C-3')^a, 71.1 (C-4')^b, 78.0 (C-5')^a, 62.6 (C-6')^c, 95.4 (C-1''), 73.9 (C-2''), 78.7 (C-3'')^a, 71.2 (C-4'')^b, 78.2 (C-5'')^a, 62.4 (C-6'')^c. *Nepeta cadmea* (Labiatae).¹²⁷⁾

220. Gmephiloside (1-*O*-(8-*epi*-Loganoyl)- β -*D*-glucopyranoside)



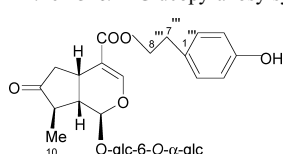
C₂₂H₃₄O₁₅; 538.1897; white amorphous powder; ¹H-NMR (500 MHz, CD₃OD): 5.54 (d, 4.0, H-1), 7.54 (d, 1.0, H-3), 3.06 (m, H-5), 1.88 (dt, 14.0, 5.0, H₂-6), 2.08 (ddd, 14.0, 9.0, 5.0, H₆-6), 3.81 (m, H-7), 2.13 (m, H-8), 2.62 (dt, 9.0, 4.0, H-9), 1.04 (d, 8.0, H₃-10), 4.64 (d, 8.0, H-1'), 3.18 (dd, 9.0, 8.0, H-2'), 3.42 (t, 9.0, H-3'), 3.24 (dd, 10.0, 9.0, H-4'), 3.30 (m, overlapped with solvent signal, H-5'), 3.64 (dd, 12.0, 6.0, H-6'), 3.90 (dd, 12.0, 2.0, H-6'), 5.51 (d, 8.0, H-1''), 3.32—3.38 (m, H-2'', 3'', 4'', 5''), 3.68 (dd, 12.0, 6.0, H-6''), 3.83 (dd, 12.0, 2.0, H-6''); ¹³C-NMR (125 MHz, CD₃OD): 96.3 (C-1), 154.0 (C-3), 113.5 (C-4), 30.9 (C-5), 40.9 (C-6), 79.3 (C-7), 45.1 (C-8), 43.0 (C-9), 14.4 (C-10), 167.3 (C-11), 99.7 (C-1'), 74.3 (C-2'), 78.0 (C-3')^a, 71.7 (C-4')^b, 78.5 (C-5')^a, 62.9 (C-6')^c, 95.4 (C-1''), 74.0 (C-2''), 78.0 (C-3'')^a, 71.0 (C-4'')^b, 78.8 (C-5'')^a, 62.3 (C-6'')^c. *Gmelina philippensis* (Verbenaceae).⁵²⁾

221. 6'-*O*- α -*D*-Galactopyranosylsyringopicroside



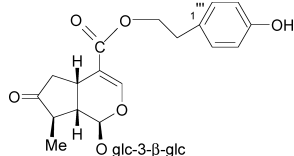
C₃₀H₄₀O₁₆; 656.2316; amorphous powder; [α]_D²⁵ -21.1° (c=0.389, MeOH); UV (MeOH): 225 (4.13), 276 (3.21); ¹H-NMR (400 MHz, CD₃OD): 5.53 (d, 3.9, H-1), 7.44 (d, 1.2, H-3), 3.30 (m, H-5), 2.40 (dd, 19.3, 2.7, H-6 α), 2.57 (dd, 19.3, 8.3, H-6 β), 2.14 (br q, 7.3, H-8), 2.30 (ddd, 9.0, 7.3, 3.9, H-9), 1.14 (d, 7.3, H₃-10), 4.69 (d, 8.1, H-1'), 3.21 (dd, 8.8, 8.1, H-2'), 3.36 (m, H-3', 4'), 3.54 (m, H-5'), 3.69—3.91 (m, H-6', H-3'', 4'', 5'', H₂-6''), 3.79 (dd, 12.0, 2.0, H-6''), 4.87 (d, 3.7, H-1''), 3.73 (dd, 10.4, 3.7, H-2''), 7.04 (d, 8.5, H-2'''), 6.71 (d, 8.5, H-3'''), 5.5''', 2.84 (t, 6.8, H₂-7'''), 4.27 (m, H₂-8'''); ¹³C-NMR (100 MHz, CD₃OD): 96.1 (C-1), 153.3 (C-3), 111.3 (C-4), 28.6 (C-5), 43.6 (C-6), 220.6 (C-7), 44.8 (C-8), 46.5 (C-9), 14.0 (C-10), 168.4 (C-11), 100.8 (C-1'), 74.8 (C-2'), 78.1 (C-3'), 71.8 (C-4'), 76.8 (C-5'), 68.3 (C-6'), 100.5 (C-1''), 70.4 (C-2''), 71.7 (C-3''), 71.1 (C-4''), 72.6 (C-5''), 62.8 (C-6''), 130.2 (C-1'''), 131.0 (C-2'''), 116.4 (C-3'''), 157.2 (C-4'''), 35.4 (C-7'''), 66.4 (C-8'''). *Syringa reticulata* (Oleaceae).¹²⁹⁾

222. 6'-*O*- α -*D*-Glucopyranosylsyringopicroside



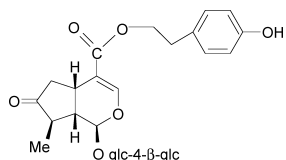
C₃₀H₄₀O₁₆; 656.2316; amorphous powder; [α]_D²⁶ -28.6° (c=0.2, MeOH); UV (MeOH): 225 (4.10), 276 (3.30); ¹H-NMR (600 MHz, CD₃OD): 5.55 (d, 3.7, H-1), 7.44 (d, 1.5, H-3), 3.29 (m, H-5), 2.43 (dd, 19.4, 1.5, H-6 α), 2.56 (dd, 19.4, 8.4, H-6 β), 2.12 (dq, 9.5, 7.3, H-8), 2.31 (ddd, 9.5, 7.3, 3.7, H-9), 1.15 (d, 7.3, H₃-10), 4.70 (d, 8.1, H-1'), 3.29 (dd, 8.8, 8.1, H-2'), 3.27—3.38 (m, H-3', 4', 2'', 4''), 3.53 (ddd, 9.5, 5.5, 2.0, H-5'), 3.80 (dd, 11.4, 2.0, H-6'), 3.90 (dd, 11.4, 5.5, H-6'), 4.83 (d, 3.7, H-1''), 3.65 (t, 9.5, H-3''), 3.63 (m, H-5''), 3.64 (dd, 10.0, 5.5, H-6''), 3.79 (dd, 10.0, 2.0, H-6''), 7.04 (d, 8.8, H-2'''), 6.71 (d, 8.8, H-3'''), 5.5''', 2.84 (t, 7.0, H₂-7'''), 4.25, 2.26 (each t, 7.0, H₂-8'''); ¹³C-NMR (150 MHz, CD₃OD): 96.0 (C-1), 153.3 (C-3), 111.3 (C-4), 28.5 (C-5), 43.7 (C-6), 220.9 (C-7), 44.8 (C-8), 46.6 (C-9), 14.0 (C-10), 168.4 (C-11), 100.7 (C-1'), 74.6 (C-2'), 78.1 (C-3'), 71.6 (C-4'), 76.8 (C-5'), 68.0 (C-6'), 100.2 (C-1''), 73.7 (C-2''), 75.3 (C-3''), 71.8 (C-4''), 73.8 (C-5''), 62.7 (C-6''), 131.0 (C-1'''), 131.0 (C-2'''), 6'''), 157.1 (C-4'''), 35.4 (C-7'''), 66.4 (C-8'''). *Syringa reticulata* (Oleaceae).¹³⁰⁾

223. 3'-O-β-D-Glucopyranosylsyringopicroside



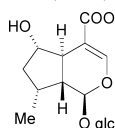
$C_{30}H_{40}O_{16}$; 656.2316; amorphous powder; $[\alpha]_D^{26} -88.9^\circ$ ($c=0.3$, MeOH); UV (MeOH): 224 (4.11), 276 (3.38); 1H -NMR (600 MHz, CD_3OD): 5.61 (d, 3.3, H-1), 7.43 (d, 1.5, H-3), 3.21–3.41 (m, H-5, 2', 4', 5', 2'', 3'', 4'', 5''), 2.43 (br d, 19.1, H-6a), 2.56 (dd, 19.1, 8.3, H-6b), 2.11 (br q, 7.0, H-8), 2.32 (ddd, 9.9, 7.7, 3.3, H-9), 1.14 (d, 7.0, H₃-10), 4.72 (d, 8.1, H-1'), 3.58 (dd, 8.8, 8.4, H-3'), 3.67 (dd, 11.7, 5.5, H-6'), 3.91 (dd, 11.7, 2.0, H-6''), 4.57 (d, 8.1, H-1''), 3.63 (dd, 12.1, 6.2, H-6''), 3.88 (dd, 12.1, 2.2, H-6'''), 7.04 (d, 8.4, H-2'''), 6.71 (d, 8.4, H-3'''), 2.84 (t, 7.0, H₂-7'''), 4.25, 4.26 (each t, 7.0, H₂-8'''), ^{13}C -NMR (150 MHz, CD_3OD): 95.6 (C-1), 153.2 (C-3), 111.3 (C-4), 28.3 (C-5), 43.5 (C-6), 220.7 (C-7), 44.7 (C-8), 46.6 (C-9), 13.7 (C-10), 168.4 (C-11), 100.0 (C-1'), 75.6 (C-2'), 87.5 (C-3'), 70.1 (C-4'), 78.2 (C-5'), 62.7 (C-6'), 105.2 (C-1''), 74.1 (C-2''), 77.9 (C-3''), 71.6 (C-4''), 78.2 (C-5''), 62.7 (C-6''), 130.2 (C-1'''), 131.0 (C-2'''), 116.4 (C-3'''), 157.1 (C-4'''), 35.4 (C-7'''), 66.4 (C-8'''). *Syringa reticulata* (Oleaceae).¹³⁰

224. 4'-O-β-D-Glucopyranosylsyringopicroside



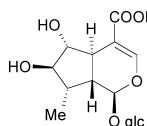
$C_{30}H_{40}O_{16}$; 656.2316; amorphous powder; $[\alpha]_D^{26} -77.2^\circ$ ($c=0.8$, MeOH); UV (MeOH): 225 (4.10), 276 (3.28); 1H -NMR (400 MHz, CD_3OD): 5.58 (d, 3.2, H-1), 7.43 (d, 1.5, H-3), 3.22–3.38 (m, H-5, 2', 2'', 3', 4', 5'), 2.43 (dd, 19.3, 1.7, H-6α), 2.56 (dd, 19.3, 8.3, H-6β), 2.10 (dq, 10.1, 7.1, H-8), 2.32 (ddd, 10.1, 7.3, 3.2, H-9), 1.14 (d, 7.1, H₃-10), 4.70 (d, 8.1, H-1'), 3.53 (m, H-3'), 3.55 (m, H-4'), 3.46 (ddd, 9.3, 4.4, 2.3, H-5'), 3.84 (dd, 12.0, 4.4, H-6'), 3.94 (dd, 12.0, 2.3, H-6''), 4.40 (d, 7.8, H-1''), 3.65 (dd, 11.8, 5.5, H-6'''), 3.88 (dd, 11.8, 2.0, H-6'''), 7.04 (d, 8.5, H-2'''), 6.71 (d, 8.5, H-3'''), 2.84 (t, 6.8, H₂-7'''), 4.25, 4.26 (each t, 6.8, H₂-8'''), ^{13}C -NMR (100 MHz, CD_3OD): 95.5 (C-1), 153.2 (C-3), 111.3 (C-4), 28.3 (C-5), 43.5 (C-6), 220.7 (C-7), 44.7 (C-8), 46.6 (C-9), 13.7 (C-10), 168.4 (C-11), 100.1 (C-1'), 75.0 (C-2'), 76.4 (C-3'), 80.6 (C-4'), 77.0 (C-5'), 61.8 (C-6'), 104.7 (C-1''), 74.4 (C-2''), 77.9 (C-3''), 71.4 (C-4''), 78.2 (C-5''), 62.5 (C-6''), 130.2 (C-1'''), 131.0 (C-2'''), 116.4 (C-3'''), 157.1 (C-4'''), 35.4 (C-7'''), 66.4 (C-8'''). *Syringa reticulata* (Oleaceae).¹³⁰

225. (5α-H)-6α-8-epi-Dihydrocornin



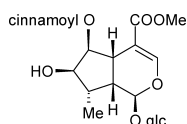
$C_{17}H_{26}O_{10}$; 390.1526; $[\alpha]_D^{22} -73.0^\circ$ ($c=2.0$, MeOH); 1H -NMR (D_2O): 5.69 (d, 9.7, H-1), 7.51 (d, 2.4, H-3), 2.64 (ddd, 13.0, 8.9, 2.3, H-5), 4.04 (ddd, 8.9, 6.5, 5.2, H-6), 2.54 (ddd, 13.9, 8.9, 5.3, H₇-7), 1.24 (ddd, 13.9, 6.5, 2.7, H₇-7), 2.25 (m, H-8), 1.91 (ddd, 13.1, 9.7, 7.1, H-9), 1.01 (d, 7.1, H₃-10), 3.69 (s, MeO-11), 4.82 (d, 8.1, H-1'), 3.28 (dd, 9.2, 8.0, H-2'), 3.46 (dd, 9.2, 8.7, H-3'), 3.39 (dd, 9.8, 8.7, H-4'), 3.43 (m, H-5'), 3.85 (dd, 12.5, 1.8, H-6'), 3.68 (dd, 12.5, 5.1, H-6''); ^{13}C -NMR (D_2O): 102.7 (C-1), 157.0 (C-3), 109.4 (C-4), 41.4 (C-5), 75.4 (C-6), 41.4 (C-7), 30.0 (C-8), 45.2 (C-9), 17.1 (C-10), 171.6 (C-11), 52.9 (MeO-11), 100.7 (C-1'), 73.6 (C-2'), 76.8 (C-3'), 70.4 (C-4'), 77.3 (C-5'), 61.5 (C-6'). *Penstemon mucronatus* (Scrophulariaceae).¹³²

226. (5α-H)-6α-Hydroxy-8-epi-loganin



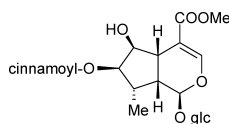
$C_{17}H_{26}O_{11}$; 406.1475; $[\alpha]_D^{22} -57.0^\circ$ ($c=0.27$, MeOH); 1H -NMR (D_2O): 5.68 (d, 9.3, H-1), 5.71 (d, 2.1, H-3), 2.73 (ddd, 12.9, 9.6, 1.8, H-5), 3.85 (m, H-6), 3.73 (dd, 4.7, 1.6, H-7), 2.04 (m, H-8), 2.18 (m, H-9), 1.06 (d, 7.6, H₃-10), 3.69 (s, MeO-11), 4.81 (d, 8.0, H-1'), 3.29 (dd, 9.2, 8.0, H-2'), 3.43 (dd, 9.2, 8.7, H-3'), 3.38 (dd, 9.8, 8.7, H-4'), 3.43 (m, H-5'), 3.83 and 3.69 (each m, H₂-6'); ^{13}C -NMR (D_2O): 101.8 (C-1), 157.1 (C-3), 108.9 (C-4), 40.2 (C-5), 82.9 (C-6), 87.4 (C-7), 39.8 (C-8), 42.8 (C-9), 14.2 (C-10), 171.4 (C-11), 52.9 (MeO-11), 100.7 (C-1'), 73.6 (C-2'), 76.7 (C-3'), 70.4 (C-4'), 77.3 (C-5'), 61.5 (C-6'). *Penstemon mucronatus* (Scrophulariaceae).¹³²

227. Caudatoside A



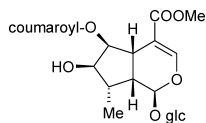
$C_{26}H_{32}O_{12}$; 536.1893; tan solid; mp 105–108 °C; $[\alpha]_D^{28} -75.2^\circ$ ($c=0.0108$, 4:1, CH_3CN -MeOH); UV (MeOH): 278 (4.27); IR (film, NaCl): 3385, 2949, 1704, 1637, 1450, 1440, 1364, 1310, 1287, 1184, 1075; 1H -NMR (300 MHz, CD_3COCD_3): 5.58 (d, 3.3, H-1), 7.4–7.45 (H-3), 3.01 (ddd, 8.9, 2.4, obsc, H-5), 5.40 (dd, 4.6, 2.4, H-6), 3.81 (dd, 8.6, 4.6, H-7), 2.35 (ddq, 8.9, 8.6, 7.2, H-8), 2.82 (ddd, 8.9, 8.9, 3.3, H-9), 1.13 (d, 7.2, H₃-10), 3.64 (s, MeO-11), 4.67 (d, 7.8, H-1'), 3.21 (dd, 9.0, 7.8, H-2'), 3.31–3.46 (H-3', 4', 5'), 3.62–3.68 (obsc, H-6'), 3.88 (dd, 11.7, 2.4, H-6''), 6.59 (d, 16.2, H-8''), 7.72 (d, 16.2, H-7''), 7.67–7.71 (H-2'', 6''), 7.42–7.45 (H-3'', 4'', 5''); ^{13}C -NMR (75 MHz, acetone- d_6): 95.0 (C-1), 152.9 (C-3), 109.7 (C-4), 36.8 (C-5), 78.8 (C-6), 78.1 (C-7), 39.8 (C-8), 40.0 (C-9), 14.0 (C-10), 166.9 (C-11), 51.3 (OMe), 99.2 (C-1'), 74.3 (C-2'), 77.8 (C-3'), 71.4 (C-4'), 77.6 (C-5'), 62.8 (C-6'), 166.0 (C-9'), 119.4 (C-8''), 144.7 (C-7''), 135.3 (C-1''), 128.7 (C-2''), 129.6 (C-3''), 130.8 (C-4''). *Citharexylum caudatum* (Verbenaceae).¹³³

228. Caudatoside B



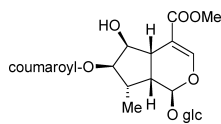
$C_{26}H_{32}O_{12}$; 536.1893; tan solid; mp 112–115 °C; $[\alpha]_D^{28} -80.4^\circ$ ($c=0.0108$, 4:1, CH_3CN -MeOH); UV (MeOH): 278 (4.21); IR (film, NaCl): 3388, 2936, 1702, 1638, 1440, 1286, 1182, 1075; 1H -NMR (300 MHz, acetone- d_6): 5.61 (d, 2.1, H-1), 7.4–7.45 (H-3), 2.96 (ddd, 9.0, 1.5, obsc, H-5), 4.34 (dd, 4.0, 1.5, H-6), 4.72 (dd, 9.2, 4.0, H-7), 2.67 (ddq, 9.2, 9.0, 7.2, H-8), 2.88 (ddd, 9.0, 9.0, 2.1, H-9), 1.11 (d, 7.2, H₃-10), 3.69 (s, MeO-11), 4.66 (d, 7.8, H-1'), 3.22 (dd, 9.0, 7.8, H-2'), 3.31–3.46 (H-3', 4', 5'), 3.62–3.67 (obscured by carbomethoxy peak, H-6'), 3.88 (dd, 12.3, 2.4, H-6''), 6.56 (d, 15.9, H-8''), 7.68 (d, 15.9, H-7''), 7.66–7.69 (H-2'', 6''), 7.42–7.45 (H-3'', 4'', 5''); ^{13}C -NMR (75 MHz, acetone- d_6): 95.0 (C-1), 152.9 (C-3), 110.2 (C-4), 39.0 (C-5), 74.6 (C-6), 81.6 (C-7), 36.2 (C-8), 39.2 (C-9), 13.9 (C-10), 167.5 (C-11), 51.4 (OMe), 99.3 (C-1'), 74.2 (C-2'), 77.6 (C-3'), 71.3 (C-4'), 77.7 (C-5'), 62.7 (C-6'), 166.6 (C-9'), 118.9 (C-8''), 145.0 (C-7''), 135.1 (C-1''), 128.8 (C-2''), 129.6 (C-3''), 130.9 (C-4''). *Citharexylum caudatum* (Verbenaceae).¹³³

229. Caudatoside C



$C_{26}H_{32}O_{13}$; 552.1842; light tan solid; mp 111–114 °C; $[\alpha]_D^{28} -88.7^\circ$ ($c=0.0096$, 4:1, CH_3CN -MeOH); UV (MeOH): 233 (4.08), 313 (4.22); IR (film, NaCl): 3377, 2951, 1697, 1635, 1605, 1515, 1440, 1366, 1290, 1170, 1075; 1H -NMR (300 MHz, acetone- d_6): 5.58 (d, 3.0, H-1), 7.42 (d, 1.2, H-3), 2.99 (ddd, 9.3, 2.4, 1.2, H-5), 5.38 (dd, 4.3, 2.4, H-6), 3.79 (dd, 8.6, 4.3, H-7), 2.34 (ddq, 9.3, 8.6, 7.5, H-8), 2.81 (ddd, 9.3, 9.3, 3.0, H-9), 1.12 (d, 7.5, H₃-10), 3.63 (s, MeO-11), 4.66 (d, 7.8, H-1'), 3.20 (dd, 9.3, 7.8, H-2'), 3.29–3.45 (H-3', 4', 5'), 3.61–3.67 (obscured by carbomethoxy peak, H-6'), 3.88 (dd, 12.0, 2.4, H-6''), 6.37 (d, 15.9, H-8''), 7.64 (d, 15.9, H-7''), 7.55 (d, 8.4, H-2'', 6''), 6.89 (d, 8.4, H-3'', 5''); ^{13}C -NMR (75 MHz, acetone- d_6): 95.0 (C-1), 152.8 (C-3), 109.8 (C-4), 36.8 (C-5), 78.5 (C-6), 78.2 (C-7), 39.8 (C-8), 40.0 (C-9), 14.0 (C-10), 166.9 (C-11), 51.3 (OMe), 99.2 (C-1'), 74.3 (C-2'), 77.6 (C-3'), 71.4 (C-4'), 77.8 (C-5'), 62.8 (C-6'), 166.4 (C-9'), 116.0 (C-8''), 144.8 (C-7''), 126.9 (C-1''), 130.6 (C-2''), 116.5 (C-3''), 160.2 (C-4''). *Citharexylum caudatum* (Verbenaceae).¹³³

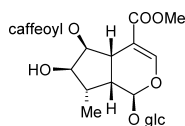
230. Caudatoside D



$C_{26}H_{32}O_{13}$; 552.1842; light tan solid; mp 124–127 °C; $[\alpha]_D^{28} -74.1^\circ$ ($c=0.0096$, 4:1, CH_3CN -MeOH); UV (MeOH): 232 (4.05), 314 (4.22); IR (film, NaCl): 3377, 2951, 1696, 1635, 1605, 1515, 1440, 1367, 1289, 1170, 1075; 1H -NMR (300 MHz, acetone- d_6): 5.60 (d, 2.4, H-1), 7.44 (d, 0.6, H-3), 2.94 (ddd, 8.7, 1.6, 0.6, H-5), 4.32 (dd, 3.9, 1.6, H-6), 4.70 (dd, 9.3, 3.9, H-7), 2.65 (ddq, 9.3, 8.7, 7.2, H-8), 2.85 (ddd, 8.7, 8.7, 2.4, H-9), 1.10 (d, 7.2, H₃-10), 3.68 (s, MeO-11), 4.65 (d, 8.1, H-1'), 3.20 (dd, 9.0, 8.1, H-2'), 3.30–3.44 (H-3', 4', 5'), 3.61–3.67 (obscured by carbomethoxy peak, H-6'), 3.87 (dd, 12.3, 2.4, H-6''), 6.36 (d, 15.9, H-8''), 7.60 (d, 15.9, H-7''), 7.54 (d, 8.4, H-2'', 6''), 6.89 (d, 8.4, H-3'', 5''); ^{13}C -

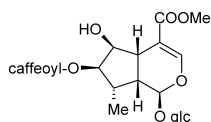
NMR (75 MHz, acetone- d_6): 95.0 (C-1), 152.8 (C-3), 110.3 (C-4), 39.0 (C-5), 74.7 (C-6), 81.4 (C-7), 36.3 (C-8), 39.3 (C-9), 13.0 (C-10), 167.4 (C-11), 51.4 (OMe), 99.3 (C-1'), 74.3 (C-2'), 77.7 (C-3'), 71.4 (C-4'), 77.8 (C-5'), 62.8 (C-6'), 167.0 (C-9'), 115.5 (C-8''), 145.0 (C-7''), 126.8 (C-1''), 130.7 (C-2'', 6''), 116.5 (C-3'', 5''), 160.3 (C-4''). *Citharexylum caudatum* (Verbenaceae).¹³³

231. Caudatoside E



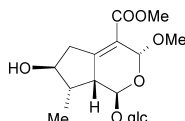
$C_{26}H_{32}O_{14}$: 568.1791; light tan solid, mp 72–75 °C; $[\alpha]_D^{28} -41.6^\circ$ ($c=0.0084$, $CH_3CN-MeOH$, 4:1); UV (MeCN–MeOH, 4:1): 221 (4.16), 235 (4.15), 297 (4.00), 325 (4.06); IR (film, NaCl): 3381, 2938, 1689, 1636, 1601, 1525, 1442, 1376, 1288, 1185, 1076, 988; ^1H-NMR (300 MHz, acetone- d_6): 5.57 (d, 3.0, H-1), 7.41 (d, 1.5, H-3), 3.00 (ddd, 9.3, 2.4, 1.5, H-5), 5.37 (dd, 4.2, 2.4, H-6), 3.77 (dd, 8.7, 4.2, H-7), 2.32 (ddq, 9.3, 8.7, 7.5, H-8), 2.81 (ddd, 9.3, 9.3, 3.0, H-9), 1.12 (d, 7.5, H₃-10), 3.64 (s, MeO-11), 4.65 (d, 7.5, H-1'), 3.22 (dd, 8.7, 7.5, H-2'), 3.34–3.43 (H-3', 4', 5'), 3.65–3.70 (obscured by carbomethoxy peak, H-6'), 3.86 (dd, 12.3, 2.4, H-6''), 6.31 (d, 15.9, H-8''), 7.57 (d, 15.9, H-7''), 7.18 (d, 2.1, H-2''), 6.87 (d, 7.8, H-5''), 7.01 (dd, 7.8, 2.1, H-6''); $^{13}C-NMR$ (75 MHz, acetone- d_6): 94.9 (C-1), 152.9 (C-3), 109.7 (C-4), 36.7 (C-5), 78.5 (C-6), 78.2 (C-7), 39.7 (C-8), 40.0 (C-9), 14.0 (C-10), 166.9 (C-11), 51.3 (OMe), 99.1 (C-1'), 74.2 (C-2'), 77.5 (C-3'), 71.3 (C-4'), 77.8 (C-5'), 62.7 (C-6'), 166.6 (C-9'), 115.7 (C-8''), 145.4 (C-7''), 127.3 (C-1''), 115.0 (C-2''), 146.2 (C-3''), 148.7 (C-4''), 116.3 (C-5''), 122.2 (C-6''). *Citharexylum caudatum* (Verbenaceae).¹³³

232. Caudatoside F



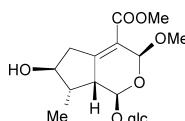
$C_{26}H_{32}O_{14}$: 568.1791; light tan solid, mp 76–79 °C; $[\alpha]_D^{28} -57.3^\circ$ ($c=0.0084$, $CH_3CN-MeOH$, 4:1); UV (MeCN–MeOH, 4:1): 222 (4.19), 235 (4.19), 298 (4.04), 324 (4.12); IR (film, NaCl): 3388, 2939, 1686, 1636, 1602, 1524, 1442, 1374, 1287, 1184, 1077, 989; ^1H-NMR (300 MHz, acetone- d_6): 5.59 (d, 2.1, H-1), 7.44 (d, 0.9, H-3), 2.94 (ddd, 9.0, 1.8, 0.9, H-5), 4.32 (dd, 3.6, 1.8, H-6), 4.69 (dd, 9.0, 3.6, H-7), 2.64 (ddq, 9.0, 9.0, 7.2, H-8), 2.85 (ddd, 9.0, 9.0, 2.1, H-9), 1.09 (d, 7.2, H₃-10), 3.68 (s, MeO-11), 4.65 (d, 8.1, H-1'), 3.22 (dd, 8.7, 8.1, H-2'), 3.35–3.47 (H-3', 4', 5'), 3.64–3.70 (obscured by carbomethoxy peak, H-6'), 3.86 (dd, 12.3, 2.4, H-6''), 6.28 (d, 16.2, H-8''), 7.53 (d, 16.2, H-7''), 7.17 (d, 2.1, H-2''), 6.86 (d, 8.4, H-5''), 7.01 (dd, 8.4, 2.1, H-6''); $^{13}C-NMR$ (75 MHz, acetone- d_6): 95.0 (C-1), 152.8 (C-3), 110.3 (C-4), 39.0 (C-5), 74.7 (C-6), 81.3 (C-7), 36.2 (C-8), 39.3 (C-9), 13.9 (C-10), 167.4 (C-11), 51.4 (OMe), 99.3 (C-1'), 74.2 (C-2'), 77.6 (C-3'), 71.3 (C-4'), 77.8 (C-5'), 62.6 (C-6'), 167.0 (C-9'), 115.3 (C-8''), 145.6 (C-7''), 127.2 (C-1''), 115.1 (C-2''), 146.2 (C-3''), 148.8 (C-4''), 116.3 (C-5''), 122.2 (C-6''). *Citharexylum caudatum* (Verbenaceae).¹³³

233. 3-*epi*-Phlomurin



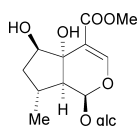
$C_{18}H_{28}O_{11}$: 420.1631; $[\alpha]_D^{21} -22.2^\circ$ ($c=0.7$, MeOH); ^1H-NMR (400 MHz, C_5D_5N): 5.80 (d, 9.0, H-1), 5.60 (s, H-3), 3.40 (dd, 20.2, 8.2, H_α-6), 3.60 (br d, 20.2, H_β-6), 4.40 (m, H-7), 2.65 (m, H-8), 3.30 (dd, 9.0, 5.3, H-9), 0.8 (d, 7.3, H₃-10), 5.40 (d, 8.1, H-1'), 3.61 (s, OMe); $^{13}C-NMR$ (100 MHz, C_5D_5N): 92.3 (C-1), 98.2 (C-3), 123.2 (C-4), 160.4 (C-5), 41.4 (C-6), 76.2 (C-7), 42.7 (C-8), 48.3 (C-9), 12.7 (C-10), 165.6 (C-11), 51.4, 56.1 (2×OMe), 100.6 (C-1'), 74.9 (C-2'), 78.6 (C-3'), 71.7 (C-4'), 78.9 (C-5'), 62.7 (C-6'). *Phlomis aurea* (Labiatae/Lamiaceae).¹³⁴

234. Phlomurin



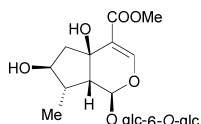
$C_{18}H_{28}O_{11}$: 420.1631; $[\alpha]_D^{21} +12.4^\circ$ ($c=0.5$, MeOH) ^1H-NMR (400 MHz, C_5D_5N): 5.80 (d, 7.3, H-1), 5.90 (s, H-3), 3.65 (dd, 20.2, 8.0, H_α-6), 3.20 (br d, 20.0, H_β-6), 4.60 (m, H-7), 2.80 (m, H-8), 3.30 (dd, 9.0, 5.3, H-9), 0.9 (d, 7.3, H₃-10), 3.72 (s, MeO-11), 3.61 (s, MeO-3), 5.50 (d, 7.8, H-1'); $^{13}C-NMR$ (100 MHz, C_5D_5N): 96.1 (C-1), 97.5 (C-3), 125.4 (C-4), 160.7 (C-5), 40.7 (C-6), 76.8 (C-7), 42.9 (C-8), 47.3 (C-9), 13.4 (C-10), 165.1 (C-11), 51.2, 55.8 (2×OMe), 100.2 (C-1'), 74.8 (C-2'), 78.5 (C-3'), 71.8 (C-4'), 78.5 (C-5'), 62.9 (C-6'). *Phlomis aurea* (Lamiaceae).¹³⁴

235. 5,9-*epi*-Penstemoside



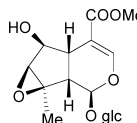
$C_{17}H_{26}O_{11}$: 406.1474; pale yellow amorphous solid; $[\alpha]_D^{20} -90.9^\circ$ ($c=0.00044$, MeOH); UV (MeOH): 234 (4.02); IR (KBr): 3550, 3440, 1728, 1692, 1630, 1120, 992; ^1H-NMR (500 MHz, D_2O): 5.81 (s, H-1), 7.55 (s, H-3), 4.28 (t, 4.5, H-6), 1.47 (ddd, 11.5, 6.5, 5.0, H-7), 1.80 (ddd, 11.5, 7.0, 4.5, H-7), 2.60 (H-8), 2.57 (H-9), 0.94 (d, 7.0, H₃-10), 3.73 (s, MeO-11), 4.57 (d, 8.0, H-1'), 3.18 (dd, 9.0, 8.0, H-2'), 3.37 (t, 9.0, H-3'), 3.25 (t, 9.0, H-4'), 3.30 (overlapped with solvent peak, H-5'), 3.65 (dd, 12.0, 6.0, H-6'), 3.91 (dd, 12.0, 2.0, H-6'); $^{13}C-NMR$ (125 MHz, D_2O): 95.9 (C-1), 155.3 (C-3), 113.6 (C-4), 73.6 (C-5), 76.8 (C-6), 40.6 (C-7), 31.5 (C-8), 50.7 (C-9), 16.6 (C-10), 168.3 (C-11), 51.7 (OMe), 99.8 (C-1'), 74.4 (C-2'), 77.5 (C-3'), 71.7 (C-4'), 78.5 (C-5'), 62.9 (C-6'). *Eremostachys glabra* (Lamiaceae).¹³⁵

236. Phlomiside



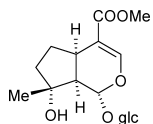
$C_{23}H_{36}O_{16}$: 568.2003; white amorphous powder; $[\alpha]_D -36.0^\circ$ ($c=0.15$, MeOH); IR (KBr): 3450, 1760, 1070; ^1H-NMR (400 MHz, CD_3OD): 5.73 (br d, H-1), 7.46 (s, H-3), 2.02 (m, H₂-6), 2.53 (m, H-9), 0.94 (d, 7.0, H₃-10), 3.73 (s, MeO), 4.47 (d, 7.5, H-1'), 4.58 (d, 7.5, H-1''), 3.10–4.15 (sugar protons); $^{13}C-NMR$ (100 MHz, CD_3OD): 95.6 (C-1), 153.5 (C-3), 115.9 (C-4), 29.5 (C-5?), 39.6 (C-6), 78.3 (C-7), 43.5 (C-8), 41.7 (C-9), 13.8 (C-10), 168.1 (C-11), 51.7 (MeO-11), 99.6 (C-1'), 73.2 (C-2'), 77.0 (C-3'), 70.4 (C-4'), 76.2 (C-5'), 62.7 (C-6'), 102.6 (C-1''), 73.6 (C-2''), 76.8 (C-3''), 70.6 (C-4''), 76.6 (C-5''), 69.4 (C-6''). *Phlomis aurea* (Lamiaceae).¹³⁶

237. Phlorigidoside C (5-Deoxysesamoside)



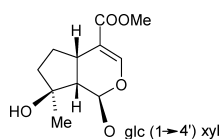
$C_{17}H_{24}O_{11}$: 404.1318; amorphous powder; $[\alpha]_D^{28} -66.0^\circ$ ($c=0.87$, MeOH); UV (MeOH): 239 (3.99); IR (dry film): 3387, 1682, 1636, 1075; ^1H-NMR (400 MHz, CD_3OD): 5.26 (d, 9.8, H-1), 7.54 (s, H-3), 2.66 (br t, 7.6, H-5), 3.99 (br d, 7.6, H-6), 3.34 (br s, H-7), 2.40 (dd, 9.8, 7.6, H-9), 1.53 (s, H₃-10), 3.74 (s, MeO-11), 4.79 (d, 7-8, H-1'), 3.61 (dd, 12.0, 7.1, H-6'), 3.92 (br d, 12.0, H-6''); $^{13}C-NMR$ (100 MHz, CD_3OD): 96.5 (C-1), 154.2 (C-3), 108.6 (C-4), 38.5 (C-5), 77.9 (C-6), 64.8 (C-7), 63.1 (C-8), 45.2 (C-9), 18.0 (C-10), 170.9 (C-11), 52.3 (OMe), 99.9 (C-1'), 74.9 (C-2'), 77.9 (C-3'), 71.8 (C-4'), 78.7 (C-5'), 63.1 (C-6'). *Phlomis rigida* (Labiatae),¹³⁷ *P. tuberosa*.¹³⁸

238. Nepetanudoside



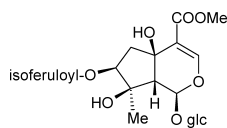
$C_{17}H_{26}O_{10}$: 390.1525; mp 248–250 °C (dec); $[\alpha]_D^{28.5} +83.7^\circ$ ($c=0.37$, H_2O); UV (?): 239 (3.93); IR (KBr): 3400 br, 1690, 1630, 1440, 1310, 1285, 1190, 1070, 1030, 900, 845; ^1H-NMR (400 MHz, C_5D_5N): 5.96 (d, 3.9, H-1), 7.70 (s, H-3), 3.53 (m, H-5), 1.66 (m, H-6), 2.52 (m, H-6), 1.87 (m, H-7), 2.01 (m, H-7), 2.95 (dd, 9.5, 3.9, H-9), 1.70 (s, H₃-10), 3.59 (s, MeO-11), 5.27 (d, 7.8, H-1'), 4.08 (m, H-2'), 4.25 (H-3', 4'), 3.98 (m, H-5'), 4.36 (dd, 11.7, 4.9, H-6'), 4.51 (dd, 11.7, 2.2, H-6''); $^{13}C-NMR$ (100 MHz, C_5D_5N): 99.5 (C-1), 151.7 (C-3), 112.4 (C-4), 31.3 (C-5), 30.4 (C-6), 41.1 (C-7), 78.9 (C-8), 52.3 (C-9), 25.1 (C-10), 167.5 (C-11), 50.9 (OMe), 104.1 (C-1'), 75.4 (C-2'), 78.6 (C-3'), 71.2 (C-4'), 79.0 (C-5'), 62.5 (C-6'). *Nepeta nuda* ssp. *albiflora* (Labiatae).¹³⁹

239. Plicatoside B



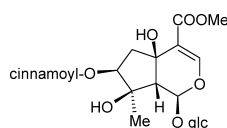
$C_{27}H_{34}O_{14}$: 522.1948; yellowish gum; $[\alpha]_D^{23} -16.9^\circ$ ($c=0.53$, MeOH); UV (MeOH): 236 (3.98); IR (KBr): 3317, 1692, 1637; 1H -NMR (400 MHz, D_2O): 5.51 (d, 3.2, H-1), 7.46 (s, H-3), 3.12 (m, H-5), 1.42 (m, H-6 α), 1.73 (m, H-6 β , H-7 α), 2.26 (m, H-7 β), 2.35 (dd, 9.6, 2.7, H-9), 1.32 (s, H₃-10), 4.71 (d, 8.0, H-1'), 3.20–3.40 (m, sugar H), 4.81 (d, 8.1, H-1''); ^{13}C -NMR (100 MHz, D_2O): 95.2 (C-1), 151.6 (C-3), 113.0 (C-4), 30.4 (C-5), 29.7 (C-6), 40.3 (C-7), 80.2 (C-8), 51.2 (C-9), 23.8 (C-10), 170.1 (C-11), 99.0 (C-1'), 73.4 (C-2'), 73.4 (C-3'), 77.0 (C-4'), 76.5 (C-5'), 61.5 (C-6'), 99.1 (C-1''), 74.0 (C-2''), 76.6 (C-3''), 76.0 (C-4''), 63.3 (C-5''). *Pedicularis plicata* (Scrophulariaceae).⁸⁵

240. Duranterectoside A



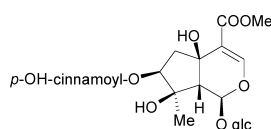
$C_{26}H_{34}O_{15}$: 598.1897; amorphous powder; $[\alpha]_D -41.0^\circ$ ($c=1.17$, MeOH); UV (MeOH): 222 (4.15), 233 (4.13), 298 (4.06), 328 (4.09); IR (KBr): 3400, 1700, 1630, 1580, 1510, 1440, 1270, 1160, 1130, 1070, 860, 810; 1H -NMR (400 MHz, CD_3OD): 5.84 (d, 0.7, H-1), 7.45 (s, H-3), 2.39 (dd, 16.1, 1.7, H-6), 2.48 (dd, 16.1, 5.0, H-6), 4.83 (dd, 5.0, 1.7, H-7), 2.93 (s, H-9), 1.17 (s, H₃-10), 3.73 (s, MeO-11), 4.62 (d, 7.9, H-1'), 7.10 (d, 1.9, H-2'), 6.95 (d, 8.3, H-5''), 7.07 (dd, 8.3, 1.9, H-6''), 7.67 (d, 15.9, H-7''), 6.41 (d, 15.9, H-8''), 3.89 (s, MeO-4''), ^{13}C -NMR (100 MHz, CD_3OD): 94.1 (C-1), 152.3 (C-3), 115.7 (C-4), 69.1 (C-5), 45.7 (C-6), 80.6 (C-7), 78.8 (C-8), 58.5 (C-9), 21.4 (C-10), 167.9 (C-11), 51.8 (MeO-11), 99.7 (C-1'), 74.5 (C-2'), 78.4 (C-3''), 71.8 (C-4'), 77.5 (C-5''), 62.9 (C-6'), 129.1 (C-1''), 112.6 (C-2''), 151.5 (C-3''), 148.1 (C-4''), 114.8 (C-5''), 122.9 (C-6''), 146.7 (C-7''), 166.6 (C-8''), 168.6 (C-9''), 56.4 (MeO-4''). *Duranta erecta* (Verbenaceae).¹⁴⁰

241. Duranterectoside B



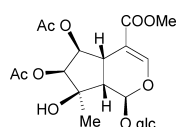
$C_{26}H_{32}O_{13}$: 552.1842; amorphous powder; $[\alpha]_D^{20.5} -87.1^\circ$ ($c=0.81$, MeOH); UV (MeOH): 218 (3.90), 223 (3.91), 275 (3.73); IR (KBr): 3370, 1700, 1630, 1575, 1495, 1290, 1160, 1070, 870, 780, 700; 1H -NMR (400 MHz, CD_3OD): 5.82 (d, 0.7, H-1), 7.44 (s, H-3), 2.35 (dd, 16.2, 1.6, H-6), 2.46 (dd, 16.2, 5.1, H-6), 4.78 (dd, 5.1, 1.6, H-7), 2.85 (s, H-9), 1.15 (s, H₃-10), 3.73 (s, MeO-11), 4.61 (d, 8.0, H-1'), 3.67 (dd, 11.9, 5.9, H-6'), 3.89 (dd, 11.9, 2.0, H-6'), 7.32–7.37 and 7.65 (m, H-2'', 3'', 4'', 5'', 6''), 7.03 (d, 12.7, H-7''), 6.09 (d, 12.7, H-8''); ^{13}C -NMR (100 MHz, CD_3OD): 94.0 (C-1), 152.3 (C-3), 115.6 (C-4), 69.0 (C-5), 45.4 (C-6), 80.5 (C-7), 78.7 (C-8), 58.2 (C-9), 21.3 (C-10), 167.9 (C-11), 51.7 (MeO-11), 99.6 (C-1'), 74.5 (C-2'), 78.4 (C-3''), 71.7 (C-4'), 77.5 (C-5''), 62.9 (C-6'), 136.3 (C-1''), 129.1 (C-2'', 6''), 131.1 (C-3'', 5''), 130.2 (C-4''), 145.0 (C-7''), 120.7 (C-8''), 167.1 (C-9''). *Duranta erecta* (Verbenaceae).¹⁴⁰

242. Duranterectoside C



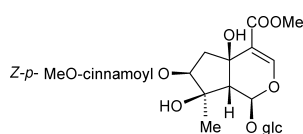
$C_{26}H_{32}O_{14}$: 568.1791; amorphous powder; $[\alpha]_D^{20.5} -68.0^\circ$ ($c=0.91$, MeOH); UV (MeOH): 229 (4.22), 314 (4.17); IR (KBr): 3370, 1700, 1630, 1605, 1515, 1290, 1160, 1070, 870; 1H -NMR (400 MHz, CD_3OD): 5.82 (d, 0.7, H-1), 7.44 (s, H-3), 2.37 (dd, 16.1, 1.7, H-6), 2.41 (dd, 16.1, 5.1, H-6), 4.79 (dd, 5.1, 1.7, H-7), 2.88 (s, H-9), 1.16 (s, H₃-10), 3.74 (s, MeO-11), 4.62 (d, 7.9, H-1'), 3.67 (dd, 11.9, 5.5, H-6'), 3.89 (dd, 11.9, 2.0, H-6'), 7.70 (d, 8.7, H-2''), 6.76 (d, 8.7, H-3''), 6.88 (d, 12.8, H-7''), 5.90 (d, 12.8, H-8''); ^{13}C -NMR (100 MHz, CD_3OD): 94.1 (C-1), 152.3 (C-3), 115.7 (C-4), 69.0 (C-5), 45.5 (C-6), 80.3 (C-7), 78.7 (C-8), 58.3 (C-9), 21.4 (C-10), 167.6 (C-11), 51.8 (MeO-11), 99.7 (C-1'), 74.5 (C-2'), 78.4 (C-3''), 71.7 (C-4'), 77.5 (C-5''), 62.9 (C-6'), 127.7 (C-1''), 133.9 (C-2'', 6''), 115.9 (C-3'', 5''), 160.1 (C-4''), 145.5 (C-7''), 116.9 (C-8''), 168.0 (C-9''). *Duranta erecta* (Verbenaceae).¹⁴⁰

243. Duranterectoside D



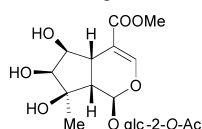
$C_{27}H_{30}O_{14}$: 506.1635; amorphous powder; $[\alpha]_D^{20.5} -87.1^\circ$ ($c=0.81$, MeOH); UV (MeOH): 233 (4.09); IR (KBr): 3400, 1730, 1700, 1635, 1250, 1070; 1H -NMR (400 MHz, CD_3OD): 5.62 (d, 2.3, H-1), 7.44 (d, 0.9, H-3), 5.14 (dd, 5.0, 5.0, H-6), 4.93 (d, 5.0, H-7), 2.83 (dd, 11.0, 2.3, H-9), 1.28 (s, H₃-10), 3.73 (s, MeO-11), 2.04, 2.11 (each s, 2 \times OAc), 4.64 (d, 7.9, H-1'); ^{13}C -NMR (100 MHz, CD_3OD): 94.4 (C-1), 153.1 (C-3), 111.0 (C-4), 34.9 (C-5), 78.0 (C-6), 79.7 (C-7), 76.8 (C-8), 48.5 (C-9), 22.3 (C-10), 168.6 (C-11), 51.9 (MeO-11), 99.3 (C-1'), 74.7 (C-2'), 78.4 (C-3''), 71.7 (C-4''), 77.7 (C-5''), 62.9 (C-6''), 20.7, 20.8, 171.6, 172.0 (2 \times Ac). *Duranta erecta* (Verbenaceae).¹⁴⁰

244. Boucheoside



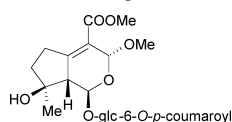
$C_{27}H_{34}O_{14}$: 582.1948; amorphous powder; IR (NaCl): 3360, 1717, 1649, 1619, 1527, 1299, 1174, 1080, 872; 1H -NMR (400 MHz, CD_3OD): 5.82 (d, 0.6, H-1), 7.44 (s, H-3), 2.36 (dd, 16.1, 1.6, H-6), 2.47 (dd, 16.1, 4.9, H-6), 4.79 (dd, 9.0, 1.6, H-7), 2.88 (s, H-9), 1.15 (s, H₃-10), 3.72 (s, MeO-11), 4.58 (d, 7.8, H-1'), 3.19 (dd, 9.1, 7.8, H-2''), 3.37 (dd, 9.1, 8.2, H-3''), 3.26 (t, 9.1, H-4'), 3.30 (m, H-5'), 3.65 (dd, 11.9, 4.5, H-6'), 3.88 (dd, 11.9, 2.0, H-6''), 7.77 (d, 9.0, H-2''), 6.89 (d, 9.0, H-3''), 6.92 (d, 13.0, H-7''), 5.94 (d, 13.0, H-8''), 3.81 (s, MeO-4''); ^{13}C -NMR (100 MHz, CD_3OD): 94.0 (C-1), 152.2 (C-3), 115.7 (C-4), 69.0 (C-5), 45.5 (C-6), 80.3 (C-7), 78.7 (C-8), 58.2 (C-9), 21.3 (C-10), 167.9 (C-11), 51.7 (2 \times MeO), 99.6 (C-1'), 74.5 (C-2''), 97.5 (C-3''), 70.4 (C-4'), 78.4 (C-5''), 62.8 (C-6'), 128.7 (C-1''), 133.6 (C-2'', 6''), 114.4 (C-3'', 5''), 162.1 (C-4''), 145.0 (C-7''), 117.8 (C-8''), 166.5 (C-9''). *Bouchea fluminensis* (Verbenaceae).¹⁴¹

245. Phlorigidoside A (2'-O-Acetyllamiridoside)

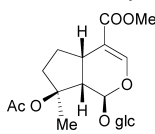


$C_{19}H_{28}O_{13}$: 464.1529; amorphous powder; $[\alpha]_D^{28} -81.0^\circ$ ($c=0.57$, MeOH); UV (MeOH): 235 (3.90); IR (dry film): 3419, 1733, 1698, 1645, 1078; 1H -NMR (400 MHz, CD_3OD): 5.61 (s, H-1), 7.39 (s, H-3), 2.80 (s, H-5, 9), 3.97 (br d, 4.4, H-6), 3.49 (d, 4.4, H-7), 1.19 (s, H₃-10), 3.74 (s, MeO-11), 4.76 (d, 7.8, H-1'), 4.65 (dd, 9.7, 7.8, H-2''), 3.68 (dd, 12.2, 5.6, H-6'), 3.90 (br d, 12.2, H-6''), 1.93 (s, OAc); ^{13}C -NMR (100 MHz, CD_3OD): 94.9 (C-1), 152.5 (C-3), 112.2 (C-4), 37.3 (C-5), 77.7 (C-6), 74.7 (C-7), 79.0 (C-8), 51.9 (C-9), 22.0 (C-10), 169.0 (C-11), 97.3 (C-1'), 75.8 (C-2''), 78.5 (C-3''), 71.5 (C-4''), 77.9 (C-5''), 62.6 (C-6''). *Phlomis rigida* (Labiatae).¹³⁷

246. Brunneogaleoside

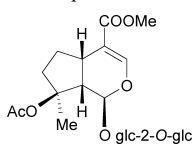


$C_{27}H_{34}O_{13}$: 566.1999; amorphous powder; $[\alpha]_D^{20} -75.9^\circ$ ($c=0.1$, MeOH); UV (MeOH): 226, 304; IR (KBr): 3416, 1706, 1632, 1605, 1516; 1H -NMR (600 MHz, CD_3OD): 5.35 (d, 8.7, H-1), 5.30 (s, H-3), 2.72 (m, H₂-6), 1.83 (m, H-7), 1.76 (m, H-7), 2.70 (d, 8.7, H-9), 1.22 (s, H₃-10), 3.51 (s, MeO-3), 3.73 (s, MeO-11), 4.77 (d, 7.5, H-1'), 3.39 (dd, 8.6, 7.5, H-2''), 3.45 (t, 8.6, H-3''), 3.37 (t, 8.6, H-4''), 3.60 (m, H-5'), 4.53 (dd, 11.8, 2.3, H-6'), 4.31 (dd, 11.8, 7.7, H-6''), 7.41 (d, 8.6, H-2''), 6.76 (d, 8.6, H-3''), 7.59 (d, 16.0, H-7''), 6.28 (d, 16.0, H-8''); ^{13}C -NMR (150 MHz, CD_3OD): 92.5 (C-1), 98.8 (C-3), 123.4 (C-4), 160.4 (C-5), 29.9 (C-6), 40.2 (C-7), 79.3 (C-8), 56.2 (C-9), 21.9 (C-10), 166.7 (C-11), 56.6 (MeO-3), 52.0 (MeO-11), 100.0 (C-1'), 74.5 (C-2''), 78.1 (C-3''), 72.5 (C-4''), 76.0 (C-5''), 65.1 (C-6''), 127.3 (C-1''), 131.4 (C-2'', 6''), 117.0 (C-3'', 5''), 161.4 (C-4''), 147.0 (C-7''), 115.1 (C-8''), 169.1 (C-9''). *Phlomis brunneogaleata* (Lamiaceae).¹⁴²

247. 8-*O*-Acetylmussaenoside

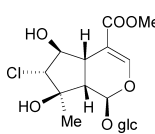
$C_{19}H_{28}O_{11}$; 432.1631; amorphous powder; $[\alpha]_D^{21} -53.2^\circ$ ($c=1.84$, MeOH); 1H -NMR (400 MHz, CD_3OD): 5.71 (d, 3.4, H-1), 7.43 (d, 1.0, H-3), 3.12 (m, H-5), 1.75 (m, H₂-6), 2.05 (m, H₂-7), 2.68 (dd, 8.5, 3.4, H-9), 1.54 (s, H₃-10), 3.69 (s, MeO-11), 4.59 (d, 7.8, H-1'), 3.14 (dd, 9.0, 7.8, H-2'), 3.32 (dd, 9.0, 8.8, H-3'), 3.22 (dd, 9.5, 8.8, H-4'), 3.26 (m, H-5'), 3.85 (dd, 12.2, 2.2, H-6'), 3.61 (dd, 12.2, 6.4, H-6''); ^{13}C -NMR (100 MHz, CD_3OD): 95.5 (C-1), 153.0 (C-3), 112.2 (C-4), 32.9 (C-5), 29.7 (C-6), 39.6 (C-7), 91.0 (C-8), 51.0 (C-9), 21.2 (C-10), 169.0 (C-11), 51.7 (OMe), 100.2 (C-1'), 74.7 (C-2'), 78.0 (C-3'), 71.6 (C-4'), 78.3 (C-5'), 62.9 (C-6'). *Barleria lupulina* (Acanthaceae).¹⁰⁸

248. Lupuloside

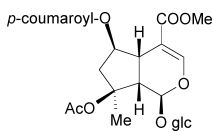


$C_{25}H_{38}O_{16}$; 594.2159; colorless amorphous solid; $[\alpha]_D^{20} -41.6^\circ$ ($c=0.125$, MeOH); IR (KBr): 3405, 2923, 1706, 1636, 1438, 1382, 1284, 1075, 1027; 1H -NMR (500 MHz, D_2O+CD_3OD , 50:1): 5.73 (d, 1.1, H-1), 7.38 (d, 0.8, H-3), 2.96 (m, H-5, 2', 4'), 1.93, 1.65 (each m, H₂-6, 7), 2.66 (dd, 9.2, 1.5, H-9), 1.38 (s, H₃-10), 3.65 (s, MeO-11), 4.78 (d, 8.0, H-1'), 3.49 (dd, 8.0, 7.7, H-2'), 3.58 (dd, 9.2, 7.7, H-3'), 3.29 (dd, 9.9, 9.2, H-4'), 3.39 (ddd, 9.9, 5.9, 2.1, H-5'), 3.82 (dd, 12.5, 2.1, H-6'), 3.63 (dd, 12.5, 5.9, H-6''), 4.59 (d, 7.8, H-1'), 3.33 (t, 9.2, H-3'), 3.20 (m, H-5'), 3.76 (dd, 12.2, 2.1, H-6'), 3.48 (dd, 12.2, 7.7, H-6''); ^{13}C -NMR (125 MHz, D_2O+CD_3OD , 50:1): 95.5 (C-1), 153.2 (C-3), 112.1 (C-4), 31.6 (C-5), 28.7 (C-6), 39.6 (C-7), 90.6 (C-8), 50.3 (C-9), 20.8 (C-10), 170.2 (C-11), 52.7 (MeO-11), 22.5, 175.2 (Ac), 97.5 (C-1'), 77.8 (C-2'), 77.2 (C-3', 5', 5''), 70.3 (C-4'), 61.6 (C-6'), 102.4 (C-1''), 74.6 (C-2''), 76.5 (C-3''), 71.2 (C-4''), 62.4 (C-6''). *Barleria lupulina* (Acanthaceae).¹⁴³

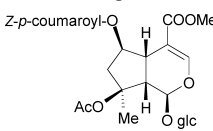
249. Chlorotuberoside



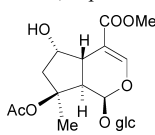
$C_{17}H_{25}ClO_{11}$; 440.1085; amorphous powder; $[\alpha]_D^{25} -107.9^\circ$ ($c=0.1$, MeOH); UV (MeOH): 234; IR (KBr): 3447, 1684, 1651, 1304, 1082; 1H -NMR (500 MHz, CD_3OD): 5.66 (br s, H-1), 7.41 (d, 1.0, H-3), 2.83 (ddd, 11.5, 4.3, 1.0, H-5), 3.67 (overlapped, H-6), 4.01 (d, 8.9, H-7), 2.66 (d, 11.5, H-9), 1.19 (s, H₃-10), 3.74 (s, MeO-11), 4.61 (d, 7.9, H-1'), 3.14 (dd, 8.9, 7.9, H-2'), 3.35 (t, 8.9, H-3'), 3.28 (t, 8.9, H-4'), 3.30 (m, H-5'), 3.88 (dd, 12.0, 2.0, H-6'), 3.66 (dd, 12.0, 5.9, H-6''), 3.66 (dd, 12.0, 5.9, H-6'''), 93.0 (C-1), 152.0 (C-3), 111.3 (C-4), 35.8 (C-5), 82.1 (C-6), 74.1 (C-7), 77.3 (C-8), 47.5 (C-9), 18.6 (C-10), 169.1 (C-11), 51.6 (OMe), 99.3 (C-1'), 74.1 (C-2'), 77.5 (C-3'), 71.7 (C-4'), 77.9 (C-5'), 62.3 (C-6'). *Phlomis tuberosa* (Lamiaceae).¹⁴⁴

250. 6-*O*-*trans*-*p*-Coumaroyl-8-*O*-acetylshanzhiside methyl ester

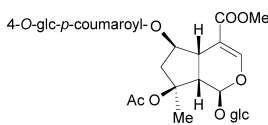
$C_{28}H_{34}O_{14}$; 594.1948; white amorphous powder; $[\alpha]_D -52.0^\circ$ ($c=0.152$, MeOH); UV (MeOH): 229 (4.17), 313 (4.23); IR (KBr): 3430 (br), 2952, 2918, 1714, 1634, 1606, 1516, 1442, 1373, 1279, 1169, 1082, 1056, 862, 835; 1H -NMR (400 MHz, CD_3OD): 5.91 (d, 3.3, H-1), 7.53 (d, 1.4, H-3), 3.34 (ddd, 8.6, 2.0, 1.4, H-5), 5.39 (br dd, 5.4, 2.0, H-6), 2.42 (br d, 15.2, H-7), 2.13 (dd, 15.2, 5.4, H-7), 3.05 (dd, 8.6, 3.3, H-9), 1.58 (s, H₃-10), 3.70 (s, MeO-11), 1.98 (s, AcO-8), 4.68 (d, 8.0, H-1'), 3.20 (dd, 9.0, 8.0, H-2'), 3.38 (dd, 9.0, 8.8, H-3'), 3.27 (dd, 9.5, 8.8, H-4'), 3.35 (ddd, 9.5, 6.2, 2.0, H-5'), 3.92 (dd, 11.9, 2.0, H-6'), 3.67 (dd, 11.9, 6.2, H-6''), 7.47 (d, 8.6, H-2'', 6''), 6.81 (d, 8.6, H-3'', 5''), 7.62 (d, 16.0, H-7''), 6.34 (d, 16.0, H-8''); ^{13}C -NMR (100 MHz, CD_3OD): 95.5 (C-1), 154.5 (C-3), 108.6 (C-4), 40.0 (C-5), 78.9 (C-6), 45.2 (C-7), 89.6 (C-8), 50.4 (C-9), 21.8 (C-10), 168.4 (C-11, 9''), 100.4 (C-1'), 74.7 (C-2'), 78.0 (C-3'), 71.7 (C-4'), 78.4 (C-5'), 63.0 (C-6'), 127.1 (C-1''), 131.2 (C-2'', 6''), 116.9 (C-3'', 5''), 161.4 (C-4''), 146.6 (C-7''), 115.4 (C-8''), 51.9 (OMe), 22.2, 172.9 (Ac). *Barleria prionitis* (Acanthaceae),¹⁴⁵ *B. lupulina*.¹⁴⁶

251. 6-*O*-*cis*-*p*-Coumaroyl-8-*O*-acetylshanzhiside methyl ester

$C_{28}H_{34}O_{14}$; 594.1948; amorphous solid; $[\alpha]_D -19.5^\circ$ ($c=0.04$, MeOH); UV (MeOH): 228 (4.08), 309 (3.93); IR (KBr): 3422 (br), 2924, 1715, 1634, 1605, 1514, 1440, 1372, 1161, 1084, 1010, 654; 1H -NMR (400 MHz, CD_3OD): 5.87 (d, 3.3, H-1), 7.52 (d, 1.6, H-3), 3.26 (ddd, 8.0, 2.0, 1.6, H-5), 5.37 (dd, 5.3, 2.0, H-6), 2.40 (br d, 15.0, H-7), 2.10 (dd, 15.0, 5.3, H-7), 2.92 (dd, 8.0, 3.3, H-9), 1.55 (s, H₃-10), 1.89 (s, AcO-8), 3.70 (s, MeO-11), 4.66 (d, 7.8, H-1'), 3.21 (dd, 9.0, 7.8, H-2'), 3.37 (dd, 9.0, 8.8, H-3'), 3.28 (dd, 9.5, 8.8, H-4'), 3.34 (ddd, 9.5, 6.2, 2.0, H-5'), 3.91 (dd, 12.1, 2.0, H-6'), 3.67 (dd, 12.1, 6.2, H-6''), 7.63 (d, 8.4, H-2'', 6''), 6.76 (d, 8.4, H-3'', 5''), 6.90 (d, 12.7, H-7''), 5.78 (d, 12.7, H-8''); ^{13}C -NMR (100 MHz, CD_3OD): 95.4 (C-1), 154.6 (C-3), 108.6 (C-4), 39.9 (C-5), 78.7 (C-6), 45.1 (C-7), 89.6 (C-8), 50.3 (C-9), 21.9 (C-10), 168.5 (C-11), 100.4 (C-1'), 74.6 (C-2'), 77.9 (C-3'), 71.6 (C-4'), 78.4 (C-5'), 62.9 (C-6'), 127.6 (C-1''), 133.6 (C-2'', 6''), 115.9 (C-3'', 5''), 160.1 (C-4''), 144.9 (C-7''), 116.9 (C-8''), 167.6 (C-9''), 51.9 (OMe), 22.1, 172.9 (Ac). *Barleria prionitis* (Acanthaceae),¹⁴⁵ *B. lupulina*.¹⁴⁶

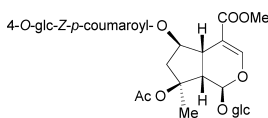
252. 6,9-*epi*-8-*O*-Acetylshanzhiside methyl ester

$C_{19}H_{28}O_{12}$; 448.1560; pale yellow amorphous solid; $[\alpha]_D^{20} -84.8^\circ$ ($c=0.00236$, MeOH); UV (MeOH): 236 (4.05); IR (KBr): 3555, 3420, 1739, 1732, 1692, 1638, 1089, 980; 1H -NMR (500 MHz, D_2O): 5.91 (d, 2.5, H-1), 7.44 (d, 1.5, H-3), 3.06 (dd, 9.0, 1.5, H-5), 4.33 (m, H-6), 2.04 (br dd, 13.5, 6.0, H-7), 2.20 (br d, 13.5, H-7), 2.99 (dd, 9.0, 2.5, H-9), 1.51 (s, H₃-10), 3.72 (s, MeO-11), 2.01 (s, AcO-8), 4.63 (d, 8.0, H-1'), 3.17 (dd, 9.0, 8.0, H-2'), 3.36 (t, 9.0, H-3'), 3.26 (t, 9.0, H-4'), 3.30 (overlapped with solvent peak, H-5'), 3.66 (dd, 12.0, 6.0, H-6'), 3.89 (dd, 12.0, 2.0, H-6''); ^{13}C -NMR (125 MHz, D_2O): 95.9 (C-1), 153.8 (C-3), 109.9 (C-4), 42.5 (C-5), 76.1 (C-6), 47.8 (C-7), 89.9 (C-8), 50.1 (C-9), 22.4 (C-10), 169.2 (C-11), 51.9 (OMe), 22.4, 173.0 (OAc), 100.5 (C-1'), 74.8 (C-3'), 78.5 (C-3''), 71.8 (C-4'), 78.3 (C-5'), 63.2 (C-6'). *Eremostachys glabra* (Lamiaceae).¹³⁵

253. Saletpangponoside A [6-*O*-(*trans*-*p*-Coumaroyl)-8-*O*-acetylshanzhiside methyl ester]

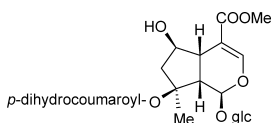
$C_{34}H_{44}O_{19}$; 756.2476; amorphous powder; $[\alpha]_D^{21} -90.3^\circ$ ($c=1.79$, MeOH); 1H -NMR (400 MHz, CD_3OD): 5.85 (d, 3.2, H-1), 7.48 (d, 1.5, H-3), 3.30 (H-5), 5.34 (m, H-6), 2.38 (br d, 15.4, H_a-7), 2.09 (dd, 15.4, 5.3, H_b-7), 3.00 (dd, 8.6, 3.2, H-9), 1.53 (s, H₃-10), 3.65 (s, MeO-11), 4.63 (d, 8.1, H-1'), 3.16 (dd, 9.0, 8.1, H-2'), 3.34 (H-3'), 3.23 (dd, 9.5, 9.5, H-4'), 3.31 (m, H-5'), 3.88 (dd, 11.9, 2.2, H-6'), 3.66 (dd, 11.9, 6.1, H-6''), 7.53 (d, 8.8, H-2'', 6''), 7.08 (d, 8.8, H-3'', 5''), 7.61 (d, 15.9, H-7''), 6.37 (d, 15.9, H-8''), 4.93 (d, 7.6, H-1''), 3.42 (H-2''), 3.34 (H-3''), 3.40 (H-4''), 3.26 (H-5''), 3.81 (dd, 12.0, 2.0, H-6''), 3.64 (dd, 12.0, 6.4, H-6''), 1.92 (s, OAc); ^{13}C -NMR (100 MHz, CD_3OD): 95.4 (C-1), 154.5 (C-3), 108.5 (C-4), 39.9 (C-5), 78.9 (C-6), 45.1 (C-7), 89.6 (C-8), 50.3 (C-9), 21.8 (C-10), 168.4 (C-11), 51.9 (OMe), 100.3 (C-1'), 74.6 (C-2'), 77.9 (C-3'), 71.6 (C-4'), 78.3 (C-5'), 62.9 (C-6'), 129.8 (C-1''), 130.8 (C-2'', 6''), 118.0 (C-3'', 5''), 160.9 (C-4''), 145.9 (C-7''), 117.2 (C-8''), 168.1 (C-9''), 101.8 (C-1''), 74.8 (C-2''), 77.9 (C-3''), 71.2 (C-4''), 78.1 (C-5''), 62.4 (C-6''), 22.3, 172.9 (OAc). *Barleria lupulina* (Acanthaceae).¹⁰⁸

254. Saletpangponoside B



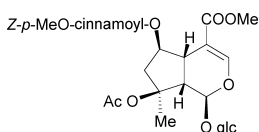
$C_{34}H_{44}O_{19}$; 756.2476; amorphous powder; $[\alpha]_D^{21} -104.8^\circ$ ($c=2.43$, MeOH); 1H -NMR (400 MHz, CD_3OD): 5.85 (d, 3.2, H-1), 7.50 (d, 1.5, H-3), 3.25 (H-5), 5.34 (m, H-6), 2.38 (br d, 15.6, H_a-7), 2.09 (dd, 15.6, 5.4, H_b-7), 2.90 (dd, 8.6, 3.2, H-9), 1.53 (s, H₃-10), 3.68 (s, MeO-11), 4.66 (d, 7.8, H-1'), 3.22 (dd, 9.0, 7.8, H-2'), 3.34 (H-3'), 3.26 (H-4'), 3.31 (m, H-5'), 3.90 (dd, 12.0, 2.0, H-6'), 3.71 (dd, 12.0, 5.6, H-6''), 7.65 (d, 8.8, H-2'', 6''), 7.07 (d, 8.8, H-3'', 5''), 6.94 (d, 12.9, H-7''), 5.86 (d, 12.9, H-8''), 4.96 (d, 7.6, H-1''), 3.48 (H-2''), 3.34 (H-3''), 3.45 (H-4''), 3.28 (H-5''), 3.87 (dd, 12.0, 1.7, H-6''), 3.71 (dd, 12.0, 5.6, H-6''), 1.89 (s, AcO); ^{13}C -NMR (100 MHz, CD_3OD): 95.4 (C-1), 154.5 (C-3), 108.4 (C-4), 39.8 (C-5), 78.8 (C-6), 45.0 (C-7), 89.6 (C-8), 50.3 (C-9), 21.8 (C-10), 168.4 (C-11), 51.9 (OMe), 100.3 (C-1'), 74.5 (C-2'), 77.8 (C-3'), 71.6 (C-4'), 78.3 (C-5'), 62.9 (C-6'), 130.3 (C-1''), 132.9 (C-2'', 6''), 117.1 (C-

255. Saletpangponoside C

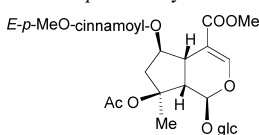


3", 5"), 159.7 (C-4"), 144.0 (C-7"), 118.8 (C-8"), 167.4 (C-9"), 101.9 (C-1"), 74.8 (C-2"), 77.8 (C-3"), 71.2 (C-4"), 78.1 (C-5"), 62.4 (C-6"), 22.2, 172.9 (OAc). *Barleria lupulina* (Acanthaceae).¹⁰⁸⁾

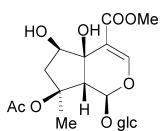
C₂₆H₃₄O₁₃; 554.1999; amorphous powder; [α]_D²¹ -58.9° (*c*=2.86, MeOH); ¹H-NMR (400 MHz, CD₃OD): 5.82 (d, 2.4, H-1), 7.38 (d, 1.5, H-3), 2.94 (H-5), 4.25 (m, H-6), 2.11 (br d, 14.9, H_a-7), 1.97 (dd, 14.9, 5.4, H_b-7), 2.94 (H-9), 1.38 (s, H₃-10), 3.66 (s, MeO-11), 4.59 (d, 7.8, H-1'), 3.14 (dd, 9.0, 7.8, H-2'), 3.32 (dd, 9.0, 8.8, H-3'), 3.22 (dd, 9.5, 8.8, H-4'), 3.26 (m, H-5'), 3.85 (dd, 12.2, 2.2, H-6'), 3.61 (dd, 12.2, 6.4, H-6'), 6.98 (d, 8.5, H-2", 6"), 6.64 (d, 8.5, H-3", 5"), 2.76 (m, H-7"), 2.49 (m, H-8"); ¹³C-NMR (100 MHz, CD₃OD): 95.7 (C-1), 153.6 (C-3), 109.8 (C-4), 42.2 (C-5), 76.0 (C-6), 47.7 (C-7), 89.7 (C-8), 49.9 (C-9), 22.2 (C-10), 169.0 (C-11), 51.8 (OMe), 100.4 (C-1'), 74.7 (C-2'), 78.0 (C-3'), 71.4 (C-4'), 78.2 (C-5'), 63.0 (C-6'), 132.6 (C-1"), 130.3 (C-2", 6"), 116.2 (C-3", 5"), 156.7 (C-4"), 31.2 (C-7"), 38.2 (C-8"), 175.0 (C-9"). *Barleria lupulina* (Acanthaceae).¹⁰⁸⁾

256. 6-*O*-*p*-Methoxy-*cis*-cinnamoyl-8-*O*-acetylshanzhiside methyl ester

C₂₉H₃₆O₁₄; 608.2104; colorless powder; [α]_D²⁴ -129.7° (*c*=0.35, MeOH); UV (?): 227 (4.36), 297 sh (4.25), 307 (4.27); IR (?): 3400, 1700, 1640, 1600, 1270, 1180, 1080, 1020; ¹H-NMR (400 MHz, CDCl₃-DMSO-*d*₆): 5.95 (d, 1.5, H-1), 7.48 (s, H-3), 3.25 (d, 9.0, H-5), 5.41 (d, 4.5, H-6), 2.01 (dd, 15.0, 4.5, H_a-7), 2.38 (d, 15.0, H_b-7), 3.00 (dd, 1.0, 1.5, H-9), 1.57 (s, H₃-10), 3.70 (s, MeO-11), 4.66 (d, 7.5, H-1'), 7.73 (d, 9.0, H-2", 6"), 6.88 (d, 9.0, H-3", 5"), 6.84 (d, 12.0, H-7"), 5.79 (d, 12.0, H-8"), 3.84 (s, MeO-4"), 1.90 (s, Ac); ¹³C-NMR (100 MHz, CDCl₃-DMSO-*d*₆): 92.4 (C-1), 151.5 (C-3), 105.3 (C-4), 37.1 (C-5), 75.2 (C-6), 42.5 (C-7), 86.4 (C-8), 47.2 (C-9), 20.2 (C-10), 49.8 (MeO-11), 97.4 (C-1'), 71.6 (C-2'), 75.6 (C-3'), 68.7 (C-4'), 77.2 (C-5'), 60.2 (C-6'), 125.2 (C-1"), 128.4 (C-2", 6"), 113.0 (C-3", 5"), 159.8 (C-4"), 142.0 (C-7"), 114.0 (C-8"), 164.6, 165.0, 169.2 (C-11, C-9", C=O), 53.9 (MeO-4"), 19.8 (Ac). *Barleria lupulina* (Acanthaceae).¹⁴⁶⁾

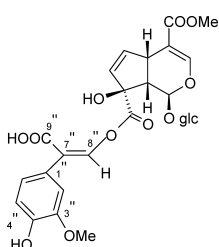
257. 6-*O*-*p*-Methoxy-*trans*-cinnamoyl-8-*O*-acetylshanzhiside methyl ester

C₂₉H₃₆O₁₄; 608.2104; colorless powder; [α]_D²⁵ -103.0° (*c*=0.26, MeOH); UV (?): 227 (4.36), 297 sh (4.35), 310 (4.38); IR (?): 3400 (br), 1715, 1645, 1602, 1260, 1190, 1030; ¹H-NMR (400 MHz, CDCl₃-DMSO-*d*₆): 6.03 (d, 1.5, H-1), 7.50 (s, H-3), 3.31 (d, 9.0, H-5), 5.46 (d, 4.5, H-6), 2.04 (dd, 15.0, 4.5, H_a-7), 2.41 (d, 15.0, H_b-7), 3.09 (dd, 9.0, 1.5, H-9), 1.53 (s, H₃-10), 3.71 (s, MeO-11), 1.96 (s, AcO-8), 4.69 (d, 7.5, H-1'), 7.49 (d, 9.0, H-2", 6"), 6.97 (d, 9.0, H-3", 5"), 7.61 (d, 15.0, H-7"), 6.29 (d, 15.0, H-8"), 3.86 (s, MeO-4"); ¹³C-NMR (100 MHz, CDCl₃-DMSO-*d*₆): 93.4 (C-1), 152.5 (C-3), 106.1 (C-4), 37.8 (C-5), 76.3 (C-6), 43.5 (C-7), 87.2 (C-8), 48.1 (C-9), 21.4 (C-10), 98.5 (C-1'), 72.5 (C-2'), 76.1 (C-3'), 69.8 (C-4'), 76.3 (C-5'), 61.3 (C-6'), 126.5 (C-1"), 131.6 (C-2", 6"), 113.8 (C-3", 5"), 159.7 (C-4"), 142.6 (C-7"), 116.3 (C-8"), 164.8, 165.9, 170.2 (C-9", C-11, C=O), 50.6, 54.7 (2×OMe), 20.8 (Ac). *Barleria lupulina* (Acanthaceae).¹⁴⁶⁾

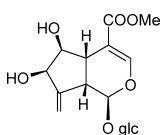
258. Phlorigidoside B (8-*O*-Acetyl-6 β -hydroxyipolamiide)

C₁₉H₂₈O₁₃; 464.1529; amorphous powder; [α]_D -88.0° (*c*=0.63, MeOH); UV (MeOH): 231 (3.86); IR (dry film): 3386, 1708, 1628, 1294, 1078; ¹H-NMR (400 MHz, CD₃OD): 6.15 (s, H-1), 7.58 (s, H-3), 4.34 (t, 4.9, H-6), 2.12 (d, 4.9, H₇-7), 2.90 (s, H-9), 1.40 (s, H₃-10), 3.72 (s, MeO-11), 2.02 (s, AcO-8), 4.59 (d, 8.0, H-1'), 3.19 (dd, 8.8, 7.8, H-2'), 3.69 (dd, 12.1, 5.9, H-6'), 3.90 (dd, 12.2, 2.0, H-6'), ¹³C-NMR (100 MHz, CD₃OD): 95.3 (C-1), 155.5 (C-3), 112.3 (C-4), 72.7 (C-5), 74.9 (C-6), 45.8 (C-7), 86.0 (C-8), 57.6 (C-9), 22.0 (C-10), 167.8 (C-11), 51.8 (OMe), 100.2 (C-1'), 74.3 (C-2'), 77.5 (C-3'), 71.6 (C-4'), 78.3 (C-5'), 62.8 (C-6'). *Phlomis rigida* (Labiatae).¹³⁷⁾

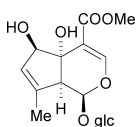
259. Citrifolinin A



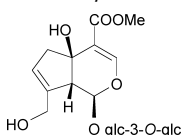
C₂₇H₃₀O₁₆; 610.1533; yellow powder; [α]_D²⁰ -23.4° (*c*=0.26, MeOH); ¹H-NMR (400 MHz, CD₃OD): 5.51 (d, 4.5, H-1), 7.55 (s, H-3), 3.99 (dd, 9.0, 2.6, H-5), 6.78 (dd, 6.2, 2.6, H-6), 5.70 (dd, 6.2, 1.7, H-7), 3.10 (dd, 9.0, 4.5, H-9), 3.78 (s, MeO-11), 4.68 (d, 7.6, H-1'), 3.20 (m, H-2'), 3.38 (m, H-3'), 3.10 (m, H-4'), 3.40 (m, H-5'), 3.40 (m, H-6'), 3.82 (dd, H-6'), 7.55 (d, 1.3, H-2"), 6.96 (d, 8.0, H-5"), 7.52 (dd, 8.0, 1.3, H-6"), 7.89 (s, H-8"), 3.92 (s, MeO-3"); ¹³C-NMR (100 MHz, CD₃OD): 92.6 (C-1), 151.2 (C-3), 109.9 (C-4), 39.2 (C-5), 141.8 (C-6), 128.3 (C-7), 96.7 (C-8), 50.2 (C-9), 169.0 (C-10), 167.0 (C-11), 51.0 (MeO-11), 98.9 (C-1'), 73.8 (C-2'), 77.8 (C-3'), 70.7 (C-4'), 76.8 (C-5'), 61.9 (C-6'), 130.5 (C-1"), 111.6 (C-2"), 153.8 (C-3"), 146.1 (C-4"), 115.2 (C-5"), 125.9 (C-6"), 128.9 (C-7"), 158.1 (C-8"), 187.0 (C-9"), 55.4 (MeO-3"). *Morinda citrifolia* (Rubiaceae).¹⁴⁷⁾

260. Zaluzioside (6 β -Hydroxygardoside methyl ester)

C₁₇H₂₄O₁₁; 404.1318; crystals; mp 200—201 °C; [α]_D²⁰ -35.0° (*c*=0.5, MeOH); ¹H-NMR (500 MHz, D₂O): 5.75 (d, 2.4, H-1), 7.51 (br s, H-3), 3.07 (br d, 8.5, H-5), 4.21 (br d, 4.2, H-6), 4.46 (m, H-7), 3.42 (obscured by sugar H, H-9), 5.41, 5.45 (each t, 2.5, H₂-10); ¹³C-NMR (125 MHz, D₂O): 97.5 (C-1), 154.2 (C-3), 109.4 (C-4), 36.5 (C-5), 75.6 (C-6)^a, 74.3 (C-7)^a, 148.8 (C-8), 42.5 (C-9), 113.1 (C-10), 169.8 (C-11), 52.7 (OMe), 99.2 (C-1'), 73.3 (C-2'), 76.3 (C-3'), 70.4 (C-4'), 77.1 (C-5'), 61.5 (C-6'). *Zaluzianskya capensis* (Scrophulariaceae).¹⁴⁸⁾

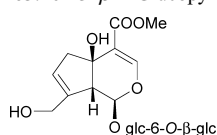
261. 5,9-*epi*-7,8-Didehydropenstemoside

C₁₇H₂₄O₁₁; 404.1318; pale yellow amorphous solid; [α]_D²⁰ -92.6° (*c*=0.00054, MeOH); UV (MeOH): 237 (4.10); IR (KBr): 3460, 3300, 1710, 1695, 1102, 988; ¹H-NMR (500 MHz, D₂O): 5.83 (d, 3.0, H-1), 7.51 (s, H-3), 4.51 (m, H-6), 5.53 (m, H-7), 3.11 (m, H-9), 1.81 (d, 1.0, H₃-10), 3.72 (s, MeO-11), 4.57 (d, 8.0, H-1'), 3.20 (dd, 9.0, 8.0, H-2'), 3.37 (t, 9.0, H-3'), 3.28 (t, 10.0, H-4'), 3.30 (overlapped with solvent peak, H-5'), 3.65 (dd, 12.0, 6.0, H-6'), 3.91 (dd, 12.0, 2.5, H-6'); ¹³C-NMR (125 MHz, D₂O): 95.1 (C-1), 155.3 (C-3), 112.9 (C-4), 73.8 (C-5), 79.0 (C-6), 129.1 (C-7), 143.6 (C-8), 57.0 (C-9), 15.9 (C-10), 168.4 (C-11), 51.8 (OMe), 100.1 (C-1'), 74.5 (C-2'), 77.6 (C-3'), 71.8 (C-4'), 78.7 (C-5'), 63.0 (C-6'). *Eremostachys glabra* (Lamiaceae).¹³⁵⁾

262. 3'-*O*- β -D-Glucopyranosyltheviridoside

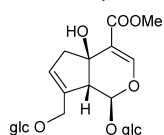
C₂₃H₃₄O₁₆; 566.1846; solid; [α]_D²⁷ -19.1° (*c*=1.40, MeOH); ¹H-NMR (400 MHz, C₅D₅N): 5.79 (d, 7.0, H-1), 7.66 (s, H-3), 2.94 (br d, 17.0, H-6), 3.21 (br d, 17.0, H-6), 5.99 (br s, H-7), 3.47 (d, 7.0, H-9), 4.74 (br d, 14.0, H-10), 4.50 (br d, 14.0, H-10), 3.62 (s, MeO-11), 5.33 (d, 8.0, H-1'), 4.05 (t, 8.0, H-2'), 4.24 (t, 8.0, H-3'), 4.05 (t, 8.0, H-4'), 3.89 (m, H-5'), 4.19 (dd, 12.0, 5.0, H-6'), 4.38 (dd, 12.0, 2.0, H-6'), 5.30 (d, 8.0, H-1"), 4.05 (t, 8.0, H-2"), 4.22 (t, 8.0, H-3"), 4.17 (t, 8.0, H-4"), 3.99 (m, H-5"), 4.29 (dd, 12.0, 5.0, H-6"), 4.51 (dd, 12.0, 2.0, H-6"); ¹³C-NMR (100 MHz, C₅D₅N): 98.9 (C-1), 152.4 (C-3), 115.3 (C-4), 76.4 (C-5), 47.5 (C-6), 125.2 (C-7), 143.2 (C-8), 57.1 (C-9), 60.8 (C-10), 167.1 (C-11), 50.9 (OMe), 100.4 (C-1'), 73.5 (C-2'), 88.1 (C-3'), 69.6 (C-4'), 78.4 (C-5'), 62.1 (C-6'), 105.8 (C-1"), 75.6 (C-2"), 78.2 (C-3"), 71.6 (C-4"), 78.6 (C-5"), 62.5 (C-6"). *Thevetia peruviana* (Apocynaceae).¹⁵³⁾

263. 6'-O-β-D-Glucopyranosyltheviridoside



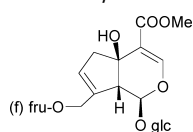
$C_{23}H_{34}O_{16}$: 566.1846; solid; $[\alpha]_D^{25} -28.3^\circ$ ($c=0.30$, MeOH); 1H -NMR (500 MHz, C_5D_5N): 5.90 (d, 7.0, H-1), 7.61 (s, H-3), 3.20, 3.22 (each br d, 17.0, H₂-6), 6.18 (br s, H-7), 3.46 (d, 7.0, H-9), 4.61, 4.87 (each d, 15.0, H₂-10), 3.58 (s, MeO-11), 5.27 (d, 8.0, H-1'), 3.92 (t, 9.0, H-4'), 4.21 (dd, 11.0, 4.0, H-6'), 4.77 (dd, 11.0, 1.0, H-6'), 5.09 (d, 7.0, H-1''), 4.34 (dd, 12.0, 5.0, H-6''), 4.49 (dd, 12.0, 2.0, H-6''); ^{13}C -NMR (125 MHz, C_5D_5N): 99.7 (C-1), 152.3 (C-3), 115.1 (C-4), 76.5 (C-5), 47.7 (C-6), 125.9 (C-7), 143.2 (C-8), 57.1 (C-9), 60.9 (C-10), 167.1 (C-11), 50.8 (OMe), 101.0 (C-1'), 74.5 (C-2'), 78.2 (C-3', 3'', 5''), 71.6 (C-4'), 77.9 (C-5'), 69.8 (C-6'), 105.2 (C-1''), 75.3 (C-2''), 71.7 (C-4''), 62.7 (C-6''). *Thevetia peruviana* (Apocynaceae).¹⁵⁴

264. 10-O-β-D-Glucopyranosyltheviridoside



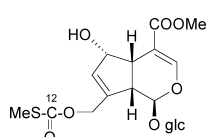
$C_{23}H_{34}O_{16}$: 566.1846; solid; $[\alpha]_D^{25} -8.2^\circ$ ($c=0.22$, MeOH); 1H -NMR (400 MHz, C_5D_5N): 5.84 (d, 7.0, H-1), 7.62 (s, H-3), 2.90 (br d, 17.0, H-6), 3.16 (br d, 17.0, H-6), 5.92 (br s, H-7), 3.55 (d, 7.0, H-9), 4.94 (br d, 13.0, H-10), 4.56 (br d, 13.0, H-10), 3.59 (s, MeO-11), 5.35 (d, 8.0, H-1'), 4.06 (t, 8.0, H-2'), 4.21 (t, 8.0, H-3'), 4.24 (t, 8.0, H-4'), 3.98 (m, H-5'), 4.30 (dd, 12.0, 5.0, H-6'), 4.49 (dd, 12.0, 1.0, H-6'), 4.88 (d, H-1''), 4.03 (t, 8.0, H-2''), 4.19 (t, 8.0, H-3''), 4.17 (t, 8.0, H-4''), 3.85 (m, H-5''), 4.30 (dd, 12.0, 5.0, H-6''), 4.49 (dd, 12.0, 1.0, H-6''); ^{13}C -NMR (100 MHz, C_5D_5N): 98.4 (C-1), 152.5 (C-3), 115.0 (C-4), 76.0 (C-5), 47.3 (C-6), 127.3 (C-7), 139.0 (C-8), 56.8 (C-9), 68.2 (C-10), 167.0 (C-11), 50.8 (MeO-11), 100.7 (C-1'), 74.8 (C-2'), 78.3 (C-3'), 71.6 (C-4')^a, 78.3 (C-5'), 62.7 (C-6'), 104.7 (C-1''), 75.2 (C-2''), 78.4 (C-3''), 71.5 (C-4'')^a, 78.8 (C-5''), 62.7 (C-6''). *Thevetia peruviana* (Apocynaceae).¹⁵³

265. 10-O-β-D-Fructofuranosyltheviridoside



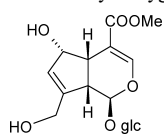
$C_{23}H_{34}O_{16}$: 566.1846; solid; $[\alpha]_D^{25} -17.1^\circ$ ($c=0.48$, MeOH); 1H -NMR (500 MHz, C_5D_5N): 6.12 (d, 6.0, H-1), 7.66 (s, H-3), 2.95, 3.10 (each br d, 17.0, H₂-6), 5.86 (br s, H-7), 3.50 (d, 6.0, H-9), 4.64, 5.02 (each br d, 12.0, H₂-10), 3.57 (s, MeO-11), 5.33 (d, 8.0, H-1'), 4.08 (t, 8.0, H-2'), 4.34 (dd, 12.0, 6.0, H-6'), 4.54 (dd, 12.0, 2.0, H-6'), 4.20 (br s, H-1''), 5.14 (d, 8.0, H-3''), 4.94 (t, 8.0, H-4''), 4.50 (m, H-5''), 4.26 (dd, 12.0, 6.0, H-6''), 4.33 (dd, 12.0, 3.0, H-6''), 4.30 (dd, 12.0, 5.0, H-6''), 4.49 (dd, 12.0, 1.0, H-6''); ^{13}C -NMR (125 MHz, C_5D_5N): 97.8 (C-1), 152.5 (C-3), 114.8 (C-4), 75.7 (C-5), 47.3 (C-6), 126.0 (C-7), 139.4 (C-8), 57.3 (C-9), 60.7 (C-10), 167.0 (C-11), 50.8 (OMe), 100.9 (C-1'), 74.6 (C-2'), 78.3 (C-3'), 71.3 (C-4'), 78.8 (C-5'), 62.5 (C-6'), 63.1 (C-1''), 105.5 (C-2''), 79.4 (C-3''), 77.1 (C-4''), 83.8 (C-5''), 64.0 (C-6''). *Thevetia peruviana* (Apocynaceae).¹⁵⁴

266. Paederosidic acid methyl ester



$C_{19}H_{26}O_{12}S$: 478.1144; white powder; $[\alpha]_D^{20} +12.4^\circ$ ($c=0.90$, MeOH); UV (MeOH): 234 (4.16); IR (KBr): 3374, 2929, 1700, 1633, 1440, 1308, 1159, 1077, 898; 1H -NMR (600 MHz, CD_3OD): 5.06 (d, 8.5, H-1), 7.65 (d, 1.1, H-3), 3.03 (ddd, 7.4, 6.0, 1.1, H-5), 4.80 (ddd, 6.0, 2.5, 0.8, H-6), 6.02 (d, 1.7, H-7), 2.62 (dd, 8.5, 7.4, H-9), 4.95 (br d, 14.6, H₂-10), 5.10 (dd, 14.6, 1.3, H₂-10), 3.74 (s, MeO-11), 2.34 (s, SMe-12), 4.72 (d, 8.0, H-1'), 3.24 (dd, 9.1, 8.0, H-2'), 3.38 (dd, 9.1, 8.8, H-3'), 3.26 (dd, 9.3, 8.8, H-4'), 3.27 (m, H-5'), 3.63 (dd, 11.8, 1.9, H-6'), 3.85 (dd, 11.8, 6.0, H-6''); ^{13}C -NMR (150 MHz, CD_3OD): 101.3 (C-1), 155.4 (C-3), 108.1 (C-4), 42.4 (C-5), 75.3 (C-6), 132.4 (C-7), 145.5 (C-8), 46.2 (C-9), 66.2 (C-10), 172.9 (C-11), 169.3 (C-12), 51.9 (OMe), 13.5 (SMe), 100.7 (C-1'), 74.9 (C-2'), 77.9 (C-3'), 71.6 (C-4'), 78.6 (C-5'), 63.0 (C-6'). *Paederia scandens* (Rubiaceae).¹²³

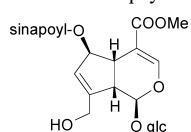
267. 6α-Hydroxygeniposide



$C_{17}H_{24}O_{11}$: 404.1318; amorphous powder; UV (H₂O): 238 (3.18); 1H -NMR (500 MHz, CD_3OD): 5.08 (d, 9.0, H-1), 7.65 (d, 1.2, H-3), 3.30 (m, H-5), 3.66 (d, H-6), 6.05 (m, H-7), 2.60 (br t, 9.0, H-9), 4.22, 4.42 (each d, 15.0, H₂-10), 3.77 (s, MeO-11), 4.70 (d, 9.6, H-1'), 3.24—3.39 (H-2', 3', 4', 5'), 3.61 (dd, 12.0, 5.6, H-6'), 3.90 (dd, 12.0, 1.9, H-6''); ^{13}C -NMR (125 MHz, CD_3OD): 101.6 (C-1), 155.4 (C-3), 108.3 (C-4), 42.7 (C-5), 75.4 (C-6), 129.8 (C-7), 151.5 (C-8), 45.9 (C-9), 61.7 (C-10), 169.5 (C-11), 51.6 (MeO), 100.5 (C-1'), 75.0 (C-2'), 77.9 (C-3'), 71.9 (C-4'), 78.5 (C-5'), 62.9 (C-6'). *Plantago lagopus* (Plantaginaceae).¹⁴⁹

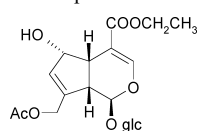
This compound was reported earlier by acidic hydrolysis of gardenoside and asperuloside.^{150,151}

268. 6-O-Sinapoyl scandoside methyl ester



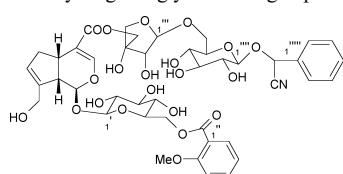
$C_{28}H_{34}O_{15}$: 610.1897; amorphous powder; $[\alpha]_D^{22} -71.2^\circ$ ($c=0.66$, MeOH); UV (MeOH): 230 (4.22), 322 (3.88); 1H -NMR (400 MHz, CD_3OD): 5.31 (d, 7.0, H-1), 7.51 (d, 1.0, H-3), 5.86 (t, 2.0, H-6), 5.68 (dt, 5.0, 2.0, H-7), 3.08 (t, 7.0, H-9), 4.22 and 4.39 (each d, 6.0, H₂-10), 3.66 (MeO-11), 4.70 (d, 8.0, H-1'), 6.92 (s, H-2', 6''), 7.63 (d, 16.0, H-7''), 6.40 (d, 16.0, H-8''), 3.88 (s, MeO-3'', 5''), H-5 and other sugar protons were buried in envelopes of strong signals; ^{13}C -NMR (100 MHz, CD_3OD): 98.1 (C-1), 154.1 (C-3), 110.1 (C-4), 42.4 (C-5), 83.8 (C-6), 127.3 (C-7), 150.5 (C-8), 47.0 (C-9), 61.0 (C-10), 168.8 (C-11), 52.0 (MeO-11), 100.4 (C-1'), 74.9 (C-2'), 78.5 (C-3'), 71.6 (C-4'), 78.0 (C-5'), 62.8 (C-6'), 126.8 (C-1''), 107.1 (C-2'', 6''), 149.6 (C-3'', 5''), 138.2 (C-4''), 147.1 (C-7''), 116.3 (C-8''), 169.1 (C-9''), 57.0 (MeO-3'', 5''). *Paederia scandens* var. *mairei* (Rubiaceae).¹⁵²

269. Asperulosidic acid ethyl ester



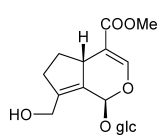
$C_{20}H_{28}O_{12}$: 460.1580; white powder; $[\alpha]_D^{25} -25.0^\circ$ ($c=0.06$, MeOH); UV (MeOH): 234; IR (KBr): 3427, 1727, 1709, 1633, 1267, 1078; 1H -NMR (500 MHz, D_2O): 5.03 (d, 9.0, H-1), 7.75 (d, 1.0, H-3), 3.18 (br t, 6.1, H-5), 4.88 (m, H-6), 6.13 (br, H-7), 2.78 (t, 8.2, H-9), 4.96 (d, 14.7, H-10), 4.90 (d, 14.7, H-10), 2.18 (s, AcO-10), 4.25 (q, 7.2, H₂C-11), 1.32 (t, 7.2, Me), 4.87 (d, 9.0, H-1'), 3.36—3.53 (m, H-2', 3', 4', 5'), 3.71 (dd, 12.4, 6.0, H-6'), 3.90 (dd, 12.4, 1.7, H-6''); ^{13}C -NMR (125 MHz, D_2O): 103.9 (C-1), 157.8 (C-3), 110.0 (C-4), 43.2 (C-5), 76.7 (C-6), 134.2 (C-7), 146.9 (C-8), 47.6 (C-9), 66.0 (C-10), 172.4 (C-11), 177.0, 23.3 (AcO-10), 64.4 (H₂C-11), 16.4 (Me), 102.0 (C-1'), 75.9 (C-2'), 79.2 (C-3'), 72.6 (C-4'), 78.4 (C-5'), 63.9 (C-6'). *Hedyotis chrysotricha* (Rubiaceae).¹²²

270. Cyanogenic glycoside of geniposidic acid



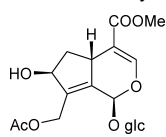
$C_{43}H_{51}NO_{21}$: 917.2953; amorphous pale yellow powder; $[\alpha]_D^{20} -39.2^\circ$ ($c=1.0$, MeOH); UV (?): 238 (0.9), 298 (0.2); 1H -NMR (600 MHz, CD_3OD): 4.95 (d, 8.4, H-1), 7.46 (s, H-3), 3.16 (ddd, 8.1, 8.1, 7.8, H-5), 2.76 (dd, 15.8, H-6), 1.79 (dd, H-6), 5.66 (dd, H-7), 2.69 (dd, 7.8, H-9), 4.20 (d's, 12.8, H₂-10), 4.78 (d, 7.8, H-1'), 3.31 (dd, 9.1, H-2'), 3.50 (dd, 9.1, H-3'), 3.45 (dd, 9.2, H-4'), 3.64 (ddd, 6.3, H-5'), 4.57 (dd, 2.9, H-6'), 4.54 (dd, 11.8, H-6'), 5.12 (d, 1.7, H-1''), 4.07 (d, H-2''), 4.11 (d, 9.9, H-4''), 3.89 (d, H-4''), 4.29 (d, 11.4, H-5''), 4.24 (H-5''), 7.15 (d, 8.4, H-3''), 7.58 (t, 7.4, H-4''), 7.02 (t, 7.4, H-5''), 7.79 (dd, 7.7, 1.8, H-6''), 3.91 (s, MeO-2''), 4.39 (d, 7.4, H-1'''), 3.32—3.40 (m, H-2''', 3''', 4''', 5'''), 4.11 (d, 10.9, H-6'''), 3.70 (d, 10.9, H-6'''), 7.63 (m, H-2''', 6'''), 7.44—7.50 (m, H-3''', 4''', 5'''), 5.84 (s, H-7'''); ^{13}C -NMR (150 MHz, CD_3OD): 99.2 (C-1), 153.9 (C-3), 112.2 (C-4), 36.9 (C-5), 39.7 (C-6), 128.8 (C-7), 144.8 (C-8), 46.3 (C-9), 61.5 (C-10), 168.6 (C-11), 100.6 (C-1'), 74.8 (C-2'), 77.6 (C-3'), 71.9 (C-4'), 75.7 (C-5'), 64.7 (C-6'), 110.6 (C-1''), 78.5 (C-2''), 78.9 (C-3''), 75.0 (C-4''), 66.6 (C-5''), 120.7 (C-1'''), 160.7 (C-2'''), 113.6 (C-3'''), 135.3 (C-4'''), 121.3 (C-5'''), 133.7 (C-6'''), 167.7 (C-7'''), 56.5 (MeO-2''), 102.6 (C-1'''), 74.7 (C-2'''), 77.8 (C-3'''), 71.4 (C-4'''), 77.0 (C-5'''), 68.1 (C-6'''), 134.9 (C-1'''), 128.9 (C-2'''), 130.1 (C-3'''), 130.9 (C-4'''), 68.9 (C-7'''), 119.3 (CN). *Canthium schimperianum* (Rubiaceae).¹⁵⁵

271. Arborescoside



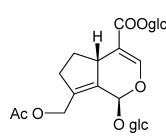
$C_{17}H_{24}O_{10}$: 388.1369; 1H -NMR (500 MHz, D_2O): 6.37 (s, H-1), 7.47 (d, 1.5, H-3), 3.61 (m, H-5), 1.51 (m, H-6), 2.57 (H-6, H₂-7), 4.34 (dd, 13.5, 1.5, H-10), 4.28 (dd, 13.7, 2.0, H-10), 4.89 (d, 8.0, H-1'), 3.29 (dd, 9.5, 8.0, H-2'), 3.54 (t, 9.5, H-3'), 3.45 (t, 9.5, H-4'), 3.53 (m, H-5'), 3.97 (dd, 12.5, 2.0, H-6'), 3.77 (dd, 12.5, 5.5, H-6'), 3.78 (s, MeO-11); ^{13}C -NMR (125 MHz, D_2O): 92.3 (C-1), 151.9 (C-3), 114.1 (C-4), 38.0 (C-5), 31.5 (C-6), 34.4 (C-7), 143.8 (C-8), 129.9 (C-9), 58.2 (C-10), 170.6 (C-11), 52.6 (OMe), 99.2 (C-1'), 73.5 (C-2'), 76.5 (C-3'), 70.4 (C-4'), 77.1 (C-5'), 61.5 (C-6'). *Plantago arborescens*, *P. ovata*, *P. webbii* (Plantaginaceae).³⁹⁾

272. 10-Acetoxy majoroside



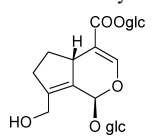
$C_{19}H_{26}O_{12}$: 446.1424; $[\alpha]_D^{20}$ -59.0° ($c=0.3$, MeOH); UV (MeOH): 238; 1H -NMR (250 MHz, D_2O): 6.34 (s, H-1), 7.38 (d, 2.0, H-3), 2.91 (m, H-5), 2.45 (m, H-6), 1.90 (m, H-6), 3.55 (H-7), 4.80 (H₂-10), 2.12 (s, Ac); ^{13}C -NMR (62.9 MHz, D_2O): 93.7 (C-1), 153.9 (C-3), 115.2 (C-4), 38.2 (C-5), 41.9 (C-6), 78.4 (C-7), 140.1 (C-8), 139.3 (C-9), 61.3 (C-10), 172.2 (C-11), 54.7 (MeO-11), 101.2 (C-1'), 75.5 (C-2'), 79.1 (C-3'), 72.3 (C-4'), 79.2 (C-5'), 63.5 (C-6'), 23.1, 176.8 (Ac). *Plantago cornuti* and *P. major* (Plantaginaceae).¹⁵⁶⁾

273. Hookerioside



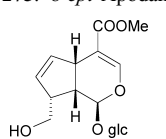
$C_{24}H_{34}O_{16}$: 578.1846; foam; $[\alpha]_D^{20}$ -35.0° ($c=0.6$, MeOH); 1H -NMR (500 MHz, D_2O): 6.40 (s, H-1), 7.66 (d, 1.8, H-3), 2.53 (m, H-6), 1.56 (m, H-6), 2.61 (m, H₂-7), 4.77 and 4.87 (brds, 13.0, H₂-10), 2.14 (AcO-10), 4.89 (d, 8.0, H-1'), 5.65 (d, 8.0, H-1''); ^{13}C -NMR (125 MHz, D_2O): 92.5 (C-1), 154.0 (C-3), 113.1 (C-4), 38.1 (C-5), 31.4 (C-6), 34.9 (C-7), 139.0 (C-8), 131.9 (C-9), 61.4 (C-10), 168.0 (C-11), 99.2 (C-1'), 73.6 (C-2'), 76.5 (C-3'), 70.4 (C-4'), 77.2 (C-5'), 61.5 (C-6'), 94.7 (C-1''), 72.9 (C-2''), 76.5 (C-3''), 70.1 (C-4''), 77.7 (C-5''), 61.6 (C-6''), 21.2, 175.0 (Ac). *Plantago hookeriana* (Plantaginaceae),¹⁵⁷⁾ *P. altissima*.¹¹⁵⁾

274. Desacetyl hookerioside

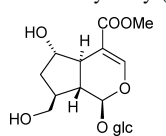


$C_{22}H_{32}O_{15}$: 536.1741; foam; $[\alpha]_D^{20}$ -38.0° ($c=0.6$, MeOH); 1H -NMR (200 MHz, D_2O): 6.32 (s, H-1), 7.63 (d, 1.0, H-3), 1.50 (m, H-6), 2.50 (m, H-6, H₂-7), 4.19, 4.29 (each d, 12.0, H₂-10), 4.83 (d, 8.0, H-1'), 5.61 (d, 8.0, H-1''); ^{13}C -NMR (50 MHz, D_2O): 92.5 (C-1), 154.0 (C-3), 113.1 (C-4), 37.9 (C-5), 31.5 (C-6), 35.9 (C-7), 143.9 (C-8), 129.5 (C-9), 58.2 (C-10), 168.0 (C-11), 99.2 (C-1'), 73.5 (C-2'), 76.4 (C-3'), 70.3 (C-4'), 77.1 (C-5'), 61.5 (C-6'), 94.6, (C-1''), 72.8 (C-2''), 76.4 (C-3''), 70.0 (C-4''), 77.6 (C-5''), 61.6, (C-6''). *Plantago altissima* (Plantaginaceae).¹¹⁵⁾

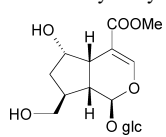
275. 8-epi-Apodantheroside



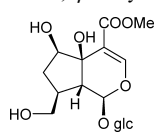
$C_{17}H_{24}O_{10}$: 388.1369; amorphous powder; $[\alpha]_D^{25}$ -128.6° ($c=0.0715$, MeOH); UV (MeOH): 235 (3.92); 1H -NMR (400 MHz, CD_3OD): 5.66 (d, 4.1, H-1), 7.40 (d, 1.5, H-3), 3.53 (m, H-5, H₂-10), 6.01 (ddd, 5.8, 2.4, 2.2, H-6), 5.78 (dt, 5.8, 2.2, H-7), 3.07 (m, H-8), 2.72 (ddd, 8.3, 8.3, 4.1, H-9), 3.71 (m, H₂-10), 3.71 (s, MeO-11), 4.67 (d, 7.8, H-1'), 3.65 (dd, 12.2, 5.8, H-6'), 3.88 (dd, 12.2, 2.0, H-6'); ^{13}C -NMR (100 MHz, CD_3OD): 95.4 (C-1), 152.5 (C-3), 112.2 (C-4), 40.2 (C-5), 132.9 (C-6), 135.1 (C-7), 51.0 (C-8), 43.3 (C-9), 63.8 (C-10), 169.1 (C-11), 51.7 (OMe), 99.9 (C-1'), 74.8 (C-2'), 78.0 (C-3'), 71.7 (C-4'), 78.5 (C-5'), 62.8 (C-6'). *Gardenia jasminoides* (Rubiaceae).¹⁶⁰⁾

276. 10-Hydroxy-(5 α -H)-6-epi-dihydrocornin

$C_{17}H_{26}O_{11}$: 406.1475; $[\alpha]_D^{22}$ -56.0° ($c=1.9$, MeOH); 1H -NMR (D_2O): 5.70 (d, 9.2, H-1), 7.53 (d, 2.2, H-3), 2.53 (ddd, 12.5, 9.2, 2.1, H-5), 4.10 (ddd, 9.1, 9.0, 6.8, H-6), 1.86 (ddd, 13.9, 10.4, 6.7, H₂-7), 2.07 (ddd, 13.8, 9.0, 6.9, H₂-7), 2.28 (m, H-8), 1.73 (m, H-9), 3.77 (dd, 11.3, 3.8, H₂-10), 3.51 (m, H₂-10), 3.70 (s, MeO-11), 4.81 (d, 8.1, H-1'), 3.31 (dd, 9.2, 8.0, H-2'), 3.44 (dd, 9.2, 8.7, H-3'), 3.38 (dd, 9.8, 8.7, H-4'), 3.43 (m, H-5'), 3.87 (dd, 12.3, 1.7, H-6'), 3.69 (dd, 12.3, 5.5, H-6'); ^{13}C -NMR (D_2O): 103.4 (C-1), 157.2 (C-3), 108.8 (C-4), 45.5 (C-5), 73.6 (C-6), 36.1 (C-7), 40.1 (C-8), 44.0 (C-9), 64.6 (C-10), 171.1 (C-11), 52.8 (MeO-11), 99.9 (C-1'), 73.5 (C-2'), 76.6 (C-3'), 70.3 (C-4'), 77.2 (C-5'), 61.5 (C-6'). *Penstemon secundiflorus* (Scrophulariaceae).¹⁵⁸⁾

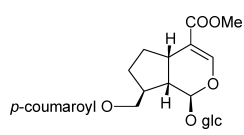
277. 6 α -Hydroxyadaxoside

$C_{17}H_{26}O_{11}$: 406.1475; colorless gum; $[\alpha]_D^{23}$ -50.7° ($c=0.28$, MeOH); UV (MeOH): 231 (3.55); IR (dry film): 3355, 1692, 1635, 1294, 1077, 807; 1H -NMR (360 MHz, CD_3OD): 5.15 (d, 6.0, H-1), 7.46 (d, 1.2, H-3), 2.04—2.09 (m, H-5, 9), 4.29 (brs, H-6), 1.54 (m, H-7), 2.26 (m, H-7), 2.13 (m, H-8), 3.79 (br d, 5.4, H₂-10), 3.69 (s, MeO-11), 4.65 (d, 7.9, H-1'), 3.19 (dd, 9.0, 7.9, H-2'), 3.27—3.31 (overlapped with solvent signal, H-3', 4'), 3.35 (m, H-5'), 3.66 (dd, 12.2, 5.6, H-6'), 3.87 (dd, 12.2, 1.5, H-6'); ^{13}C -NMR (90 MHz, CD_3OD): 99.1 (C-1), 153.1 (C-3), 113.0 (C-4), 35.5 (C-5), 73.2 (C-6), 43.1 (C-7), 42.4 (C-8), 49.9 (C-9), 62.3 (C-10), 169.5 (C-11), 51.7 (OMe), 100.6 (C-1'), 74.7 (C-2'), 78.3 (C-3'), 71.5 (C-4'), 78.0 (C-5'), 62.7 (C-6'). *Morinda citrifolia* (Rubiaceae).¹⁶¹⁾

278. 5,6 β -Dihydroxyadaxoside

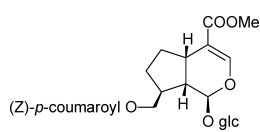
$C_{17}H_{26}O_{12}$: 422.1424; crystals; mp 137—138 °C (EtOH); $[\alpha]_D^{21}$ -110.0° ($c=0.4$, MeOH); 1H -NMR (500 MHz, D_2O): 5.77 (d, 2.0, H-1), 7.66 (s, H-3), 4.32 (dd, 5.1, 3.1, H-6), 2.00 (m, H₂-7), 1.40 (brddd, 14.2, 4.5, 3.1, H₂-7), 1.93 (m, H-8), 2.37 (dd, 8.7, 2.0, H-9), 3.61—3.68 (m, H₂-10), 3.74 (s, MeO-11), 4.75 (obs by HOD signal, H-1'), 3.29 (dd, 9.0, 8.1, H-2'), 3.49 (t, 9.1, H-3'), 3.40 (brt, 9.5, H-4'), 3.49 (m, H-5'), 3.91 (dd, 12.3, 2.0, H-6'), 3.72 (dd, 12.3, 5.6, H-6'); ^{13}C -NMR (125 MHz, D_2O): 97.0 (C-1), 156.1 (C-3), 110.6 (C-4), 74.4 (C-5), 76.2 (C-6), 33.4 (C-7), 39.0 (C-8), 49.4 (C-9), 65.9 (C-10), 169.2 (C-11), 52.7 (MeO-11), 99.9 (C-1'), 73.3 (C-2'), 76.3 (C-3'), 70.4 (C-4'), 77.2 (C-5'), 61.5 (C-6'). *Penstemon secundiflorus* ssp. *Lavendulus*, *P. grandiflorus* (Scrophulariaceae).¹⁵⁹⁾

279. Luzonoside C



$C_{26}H_{32}O_{12}$: 536.1852; yellow paste; $[\alpha]_D^{21}$ -9.6° ($c=0.31$, MeOH); UV (EtOH): 204 (4.35), 313 (4.36); IR (film): 3392, 1684, 1604, 1512; 1H -NMR (600 MHz, CD_3OD): 5.20 (d, 4.9, H-1), 7.47 (s, H-3), 2.89 (ddd, 8.2, 8.2, 13.0, H-5), 2.20 (m, H-6), 1.45 (m, H-6), 1.45 (m, H-7), 1.90 (m, H-7), 2.41 (m, H-8), 2.03 (ddd, 6.9, 6.9, 13.0, H-9), 4.15 (dd, 6.5, 11.0, H-10), 4.21 (dd, 6.5, 11.0, H-10), 3.70 (s, MeO-11), 4.66 (d, 8.0, H-1'), 3.20 (dd, 8.0, 9.3, H-2'), 3.35 (t, 9.3, H-3'), 3.30 (m, H-4'), 3.28 (m, H-5'), 3.65 (dd, 1.8, 11.0, H-6'), 3.85 (dd, 1.8, 11.0, H-6'), 6.34 (d, 15.9, H-8''), 7.61 (d, 15.9, H-7''), 7.48 (d, 8.5, H-2''), 6.80 (d, 8.5, H-3''), 3.27 (m, H-5''), 3.88 (dd, 1.8, 11.8, H-6'), 3.86 (dd, 1.8, 11.8, H-6'), 5.80 (d, 12.6, H-8'), 33.5 (C-6), 28.8 (C-7), 41.2 (C-8), 44.4 (C-9), 68.4 (C-10), 169.5 (C-11), 51.7 (OMe), 100.7 (C-1'), 74.7 (C-2'), 78.0 (C-3'), 71.4 (C-4'), 78.3 (C-5'), 62.7 (C-6'), 169.5 (C-9''), 115.1 (C-8''), 146.7 (C-7''), 127.1 (C-1''), 131.3 (C-2'', C-6''), 116.9 (C-3'', C-5''), 161.4 (C-4''). *Viburnum luzonicum* (Caprifoliaceae).¹⁶⁴⁾

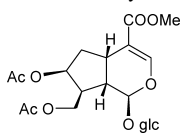
280. Luzonoside D



$C_{26}H_{32}O_{12}$: 536.1852; yellow paste; $[\alpha]_D^{21}$ $+32.6^\circ$ ($c=0.27$, MeOH); UV (EtOH): 203 (4.45), 312 (8.88); IR (film): 3395, 1692, 1624, 1512; 1H -NMR (600 MHz, CD_3OD): 5.13 (d, 4.7, H-1), 7.46 (s, H-3), 2.73 (ddd, 7.4, 7.4, 12.8, H-5), 2.17 (m, H-6), 1.37 (m, H-6), 1.13 (m, H-7), 1.80 (m, H-7), 2.32 (m, H-8), 1.92 (ddd, 6.9, 6.9, 12.8, H-9), 4.10 (dd, 5.8, 11.0, H-10), 4.14 (dd, 6.0, 11.0, H-10), 3.70 (s, MeO-11), 4.65 (d, 8.0, H-1'), 3.22 (dd, 8.0, 9.3, H-2'), 3.35 (t, 9.3, H-3'), 3.30 (m, H-4'), 3.27 (m, H-5'), 3.88 (dd, 1.8, 11.8, H-6'), 3.86 (dd, 1.8, 11.8, H-6'), 5.80 (d, 12.6, H-8''), 6.89 (d, 12.6, H-7''), 7.55 (d, 8.5, H-2''), 6.80 (d, 8.5, H-3''), 5''); ^{13}C -NMR (150 MHz, CD_3OD): 98.4 (C-1),

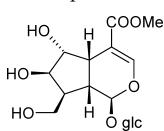
153.5 (C-3), 111.8 (C-4), 36.8 (C-5), 33.5 (C-6), 28.6 (C-7), 41.0 (C-8), 44.3 (C-9), 68.3 (C-10), 169.6 (C-11), 51.7 (OMe), 100.5 (C-1'), 74.7 (C-2'), 78.0 (C-3'), 71.5 (C-4'), 78.4 (C-5'), 62.7 (C-6'), 169.6 (C-9''), 117.0 (C-8''), 144.9 (C-7''), 127.8 (C-1''), 133.3 (C-2''), C-6''), 115.9 (C-3''), C-5''), 161.4 (C-4''). *Viburnum luzonicum* (Caprifoliaceae).¹⁶⁴

281. 7-O-Acetyl-10-O-acetoxylanin



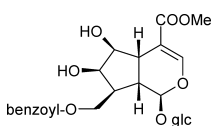
$C_{21}H_{30}O_{13}$; 490.1686; $[\alpha]_D^{20} -29.1^\circ$ (CHCl₃); UV (?): 230; ¹H-NMR (250 MHz, CD₃OD): 5.19 (d, 6.7, H-1), 7.50 (d, 2.7, H-3), 3.11 (m, H-5), 2.32 (ddd, 13.9, 7.0, 1.7, H-6), 1.72 (m, H-6), 5.31 (dd, 3.8, 1.7, H-7), — (H-8), 2.13 (m, H-9), 4.16 (dd, 10.0, 5.9, H-10), 4.26 (dd, 10.0, 8.9, H-10), 3.70 (s, MeO-11), 4.67 (d, 7.8, H-1'), 3.65 (dd, 11.9, 5.8, H-6'), 3.90 (dd, 11.9, 1.9, H-6'), 2.01, 2.03 (each s, 2×OAc); ¹³C-NMR (62.9 MHz, D₂O): 97.8 (C-1), 152.9 (C-3), 112.0 (C-4), 32.2 (C-5), 39.1 (C-6), 76.1 (C-7), 42.0 (C-8), 44.0 (C-9), 63.8 (C-10), 170.4 (C-11), 99.7 (C-1'), 73.5 (C-2'), 76.5 (C-3'), 70.3 (C-4'), 77.0 (C-5'), 61.5 (C-6'), 21.1, 21.3, 174.5, 174.8 (2×Ac), 52.6 (MeO-11). *Galium lovcense* (Rubiaceae).¹⁶²

282. Yopaoside C



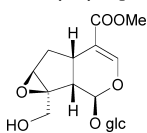
$C_{17}H_{26}O_{12}$; 422.1424; amorphous powder; $[\alpha]_D^{19} -128.5^\circ$ ($c=0.6$, MeOH); ¹H-NMR (400 MHz, CD₃OD): 5.03 (d, 8.8, H-1), 7.58 (d, 1.7, H-3), 3.08 (ddd, 9.3, 3.4, 1.7, H-5), 4.22 (br d, 3.4, H-6), 4.05 (br d, 4.9, H-7), 2.32 (m, H-8), 1.80 (m, H-9), 3.79 and 3.75 (H₂-10), 3.67 (s, MeO-11), 4.63 (d, 7.8, H-1'), 3.18 (dd, 8.6, 7.8, H-2'), 3.34 (dd, 9.0, 8.6, H-3'), 3.23 (m, H-4', 5'), 3.80 (dd, 12.2, 2.2, H-6'), 3.64 (dd, 12.2, 5.1, H-6'); ¹³C-NMR (100 MHz, CD₃OD): 102.4 (C-1), 155.7 (C-3), 107.4 (C-4), 40.6 (C-5), 79.3 (C-6), 77.5 (C-7), 48.0 (C-8), 40.5 (C-9), 62.0 (C-10), 169.4 (C-11), 51.7 (MeO-11), 101.1 (C-1'), 74.8 (C-2'), 77.9 (C-3'), 71.3 (C-4'), 78.2 (C-5'), 62.5 (C-6'). *Morinda coreia* (Rubiaceae).¹¹³

283. Arborside D



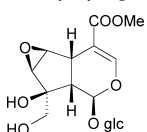
$C_{24}H_{30}O_{13}$; 526.1686; characterized as hexaacetate, $C_{36}H_{42}O_{19}$; mp 144 °C; $[\alpha]_D^{28} -53.6^\circ$ ($c=1.0$, MeOH); UV (MeOH): 228 (4.39), 272 (3.37); IR (KBr): 2960, 1740, 1630, 1360, 1330, 1210, 1030; ¹H-NMR (400 MHz, ?): 5.36 (br s, H-1), 7.23 (s, H-3), 2.97 (dd, 13.0, 3.0, H-5), 5.38 (br s, H-6), 5.32 (m, H-7), 2.53 (t, 8.0, H-8), 2.71 (t, 2.8, H-9), 4.32 (d, 9.0, H₂-10), 3.62 (s, MeO-11), 4.74 (d, 8.0, H-1'), 4.87 (t, 9.0, H-2'), 5.12 (t, 12.0, H-3'), 4.99 (t, 12.0, H-4'), 3.60 (m, H-5'), 4.18 (dd, 13.0, 4.2, H₂-6'), 7.96 (d, 8.0, H-2'', 6''), 7.38—7.43 (m, H-3'', 5''), 7.56 (s, H-4''); ¹³C-NMR (100 MHz, ?): 94.5 (C-1), 151.6 (C-3), 108.7 (C-4), 39.4 (C-5), 76.4 (C-6), 76.6 (C-7), 35.3 (C-8), 41.9 (C-9), 63.9 (C-10), 166.4 (C-11), 51.0 (OMe), 96.0 (C-1'), 70.6 (C-2'), 72.1 (C-3'), 68.1 (C-4'), 72.4 (C-5'), 61.6 (C-6'), 166.0 (C-7''), 133.3 (C-1''), 129.5 (C-2'', 6''), 128.4 (C-3'', 5''), 130.0 (C-4''), 20.0—21.0, 169.0—171.0 (6×Ac). *Nyetanthes arbor-tristis* (Nyctanthaceae).¹⁶³

284. 7β,8β-Epoxy-8α-dihydrogeniposide



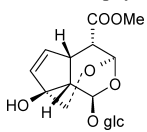
$C_{17}H_{24}O_{11}$; 404.1318; amorphous powder; $[\alpha]_D^{25} -43.4^\circ$ ($c=0.554$, MeOH); UV (MeOH): 235 (4.02); ¹H-NMR (400 MHz, CD₃OD): 5.26 (d, 9.5, H-1), 7.48 (d, 0.7, H-3), 2.74 (ddd, 10.2, 7.8, 7.3, H-5), 2.55 (dd, 13.9, 7.8, H_β-6), 1.46 (ddd, 13.9, 10.2, 1.0, H_α-6), 3.48 (br s, H-7), 2.43 (dd, 9.5, 7.3, H-9), 4.22 and 3.79 (each d, 12.9, H₂-10), 3.70 (s, MeO-11), 4.80 (d, 7.8, H-1'), 3.63 (dd, 12.0, 6.3, H-6'), 3.91 (dd, 12.0, 2.0, H-6''); ¹³C-NMR (100 MHz, CD₃OD): 95.9 (C-1), 153.1 (C-3), 110.5 (C-4), 31.7 (C-5), 35.1 (C-6), 60.7 (C-7), 68.5 (C-8), 42.3 (C-9), 61.7 (C-10), 169.0 (C-11), 51.9 (OMe), 100.1 (C-1'), 74.9 (C-2'), 77.7 (C-3'), 71.8 (C-4'), 78.8 (C-5'), 63.0 (C-6'). *Gardenia jasminoides* (Rubiaceae).¹⁶⁰

285. 6β,7β-Epoxy-8-epi-splendoside



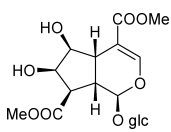
$C_{17}H_{24}O_{12}$; 420.1267; colorless gum; $[\alpha]_D^{23} -108.4^\circ$ ($c=0.17$, MeOH); UV (MeOH): 232 (4.00), 280 (3.05); IR (dry film): 3397, 1700, 1639, 1440, 1293, 1178; ¹H-NMR (400 MHz, CD₃OD): 5.76 (s, H-1), 7.48 (d, 1.5, H-3), 3.23—3.33 (overlapped with solvent signal, H-5, 3', 4', 5'), 3.80 (d, 2.5, H-6), 3.50 (d, 2.6, H-7), 2.32 (d, 8.8, H-9), 3.68 and 3.47 (each d, 11.7, H₂-10), 3.73 (s, MeO-11), 4.56 (d, 8.0, H-1'), 3.13 (dd, 8.9, 8.1, H-2'), 3.65 (dd, 11.9, 5.8, H-6'), 3.87 (dd, 11.9, 1.8, H-6''); ¹³C-NMR (100 MHz, CD₃OD): 93.8 (C-1), 154.2 (C-3), 107.7 (C-4), 33.3 (C-5), 57.9 (C-6), 60.8 (C-7), 80.7 (C-8), 46.4 (C-9), 65.2 (C-10), 168.5 (C-11), 51.9 (OMe), 99.9 (C-1'), 74.6 (C-2'), 78.4 (C-3'), 71.6 (C-4'), 78.0 (C-5'), 62.8 (C-6'). *Morinda citrifolia* (Rubiaceae).¹⁶¹

286. Macrophyllside



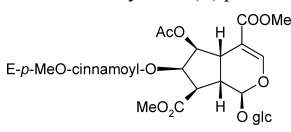
$C_{17}H_{24}O_{11}$; 404.1318; colourless crystals; mp (?); $[\alpha]_D^{22} +10.5^\circ$ ($c=0.5$, MeOH); UV (MeOH): 221.0, 263.0, 292.5; IR (dry film): 3424, 1730, 1649; ¹H-NMR (500 MHz, CD₃OD): 5.69 (d, 2.0, H-1), 5.54 (d, 1.0, H-3), 3.59 (dd, 8.0, 1.0, H-4), 3.35 (ddd, 8.0, 8.0, 3.0, H-5), 6.10 (dd, 5.5, 3.0, H-6), 5.63 (d, 5.5, H-7), 2.52 (dd, 8.0, 2.0, H-9), 3.75 (d, 11.5, H-10), 3.78 (d, 11.5, H-10), 3.70 (s, MeO-11), 4.72 (d, 8.0, H-1'), 3.18 (dd, 9.0, 8.0, H-2'), 3.28—3.40 (m, H-3', 4', 5'), 3.67 (dd, 12.0, 5.5, H-6'), 3.88 (dd, 12.0, 1.5, H-6''); ¹³C-NMR (125 MHz, CD₃OD): 94.0 (C-1), 95.7 (C-3), 49.6 (C-4), 38.0 (C-5), 135.2 (C-6), 137.4 (C-7), 84.5 (C-8), 53.2 (C-9), 67.1 (C-10), 172.4 (C-11), 52.0 (OMe), 99.1 (C-1'), 74.7 (C-2'), 78.1 (C-3'), 71.6 (C-4'), 78.2 (C-5'), 62.7 (C-6'). *Rothmania macrophylla* (Rubiaceae).¹⁶⁵

287. Myxopyroside



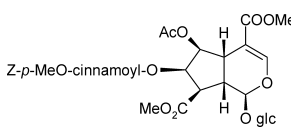
$C_{18}H_{26}O_{13}$; 450.1373. colorless syrup; $[\alpha]_D^{21} -50.0^\circ$ ($c=0.4$, MeOH); ¹H-NMR (500 MHz, D₂O): 5.37 (d, 5.2, H-1), 7.58 (br d, 1.0, H-3), 3.09 (br dd, 8.5, 6.5, H-5), 3.98 (dd, 6.5, 4.0, H-6), 4.41 (dd, 6.5, 4.0, H-7), 3.14 (dd, 8.5, 5.5, H-8), 3.02 (dd, 8.5, 5.2, H-9), 3.81 (s, 2×OMe), 4.80 (d, 8.0, H-1'), 3.32 (dd, 9.5, 8.2, H-2'), 3.54 (t, 9.5, H-3'), 3.42 (t, 9.5, H-4'), 3.51 (m, H-5'), 3.77 (dd, 12.5, 2.0, H-6'), 3.95 (dd, 12.5, 6.0, H-6''); ¹³C-NMR (125 MHz, D₂O): 97.5 (C-1), 123.6 (C-3), 110.1 (C-4), 38.0 (C-5), 78.9 (C-6), 73.3 (C-7), 49.4 (C-8), 38.9 (C-9), 174.3 (C-10), 170.7 (C-11), 52.8 (MeO-11), 53.4 (MeO-10), 99.6 (C-1'), 73.2 (C-2'), 76.4 (C-3'), 70.4 (C-4'), 77.1 (C-5'), 61.5 (C-6'). *Myxopyrum smilacifolium* (Oleaceae).¹⁶⁶

288. 6-O-Acetyl-7-O-(E)-p-methoxycinnamoyl-myxopyroside



$C_{30}H_{36}O_{16}$; 652.2003; colorless syrup (isolated as a mixture with Z-isomer in ratio 3:2); ¹H-NMR (500 MHz, CD₃OD): 5.39 (d, 6.0, H-1), 7.53 (d, 1.0, H-3), 3.30 (obsc, H-5), 5.23 (dd, 7.0, 4.5, H-6), 5.70 (dd, 7.0, 4.5, H-7), 3.30 (obsc, H-8), 3.09 (ddd, 9.0, 8.0, 6.0, H-9), 3.66 (MeO-10), 3.70 (MeO-11), 4.64 (d, 8.0, H-1'), 3.20—3.40 (obsc, H-2'—5'), 3.67 (obsc, H-6'), 3.92 (dd, 12.0, 2.5, H-6'), 6.35 (d, 16.0, H-8''), 7.63 (d, 16.0, H-7''), 7.58 (d-like, 9.0, H-2'', 6''), 6.97 (d-like, 9.0, H-3'', 5''), 3.84 (s, MeO-4''), 1.98 (AcO-); ¹³C-NMR (125 MHz, CD₃OD): 97.2 (C-1), 154.1 (C-3), 109.5 (C-4), 37.4 (C-5), 78.7 (C-6), 73.7 (C-7), 48.1 (C-8), 39.8 (C-9), 171.8 (C-10)^a, 168.7 (C-11), 51.9 (MeO-11), 52.8 (MeO-10), 171.7, 20.7 (AcO-6)^a, 100.5 (C-1'), 74.6 (C-2'), 77.9 (C-3'), 71.6 (C-4'), 78.5 (C-5'), 62.8 (C-6'), 168.7 (C-9''), 115.2 (C-8''), 147.1 (C-7''), 128.1 (C-1''), 131.2 (C-2'', 6''), 115.5 (C-3'', 5''), 163.4 (C-4''), 55.9 (MeO-4''). *Myxopyrum smilacifolium* (Oleaceae).¹⁶⁶

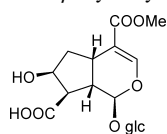
289. 6-O-Acetyl-7-O-(Z)-p-methoxycinnamoyl-myxopyroside



$C_{30}H_{36}O_{16}$; 652.2003; colorless syrup (isolated as a mixture with E isomer in ratio 2:3); ¹H-NMR (500 MHz, CD₃OD): 5.35 (d, 6.0, H-1), 7.51 (d, 1.0, H-3), 3.20 (obsc, H-5), 5.19 (dd, 7.0, 4.5, H-6), 5.66 (dd, 7.0, 4.5, H-7), 3.30 (obsc, H-8), 2.95 (ddd, 9.0, 8.0, 6.0, H-9), 3.64 (s, MeO-10), 3.70 (s, MeO-11), 1.95 (s, AcO-6), 4.62 (d, 8.0, H-1'), 3.20—3.40 (obsc, H-2'—5'), 3.67 (obsc, H-6'), 3.91 (dd, 12.0, 2.5, H-6'), 5.78 (d, 13.0, H-8''), 6.99 (d, 13.0, H-7''), 7.72 (d-like, 9.0, H-2'', 6''), 6.92 (d-like, 9.0, H-3'', 5''), 3.82 (s, MeO-4''); ¹³C-NMR (125 MHz, CD₃OD): 97.1 (C-1), 154.0 (C-3), 109.6 (C-4), 37.4 (C-5), 78.6 (C-6), 73.5

(C-7), 48.1 (C-8), 39.8 (C-9), 171.8 (C-10)^a, 168.7 (C-11), 20.8, 171.8 (Ac)^a, 100.5 (C-1'), 74.6 (C-2'), 77.9 (C-3'), 71.6 (C-4'), 78.5 (C-5'), 62.8 (C-6'), 167.5 (C-9''), 116.5 (C-8''), 146.2 (C-7''), 128.6 (C-1''), 133.5 (C-2'', 6''), 114.5 (C-3'', 5''), 162.3 (C-4''), 55.8 (MeO-4''). *Myxopyrum smilacifolium* (Oleaceae).¹⁶⁶

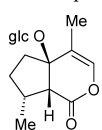
290. 7β-Hydroxy-11-methylforsythide



C₁₇H₂₄O₁₂: 420.1267; [α]_D²⁰ -45.6° (MeOH); ¹H-NMR (250 MHz, D₂O): 5.31 (d, 3.7, H-1), 7.47 (br s, H-3), 3.09 (q, 7.5, H-5), 1.64 (m, H_α-6), 2.18 (dd, 14.5, 7.8, H_β-6), 4.36 (dt, 4.5, 1.7, H-7), 2.62 (dd, 10.0, 4.6, H-8), 2.68 (dd, 10.0, 3.7, H-9), 3.67 (s, MeO-11), 4.70 (d, 7.8, H-1'), 3.61 (dd, 12.4, 5.5, H-6'), 3.84 (dd, 12.4, 1.7, H-6''); ¹³C-NMR (62.9 MHz, D₂O): 97.8 (C-1), 152.1 (C-3), 113.4 (C-4), 30.8 (C-5), 41.4 (C-6), 73.6 (C-7), 55.0 (C-8), 42.2 (C-9), 180.0 (C-10), 170.9 (C-11), 99.6 (C-1'), 73.5 (C-2'), 76.4 (C-3'), 70.4 (C-4'), 77.1 (C-5'), 61.5 (C-6'), 52.7 (MeO). *Galium lovcense* (Rubiaceae).¹⁶²

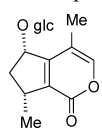
Group 3b (10-Carbon skeleton, sugar unit at other carbon instead of C-1)

291. Nepetaracemoside A



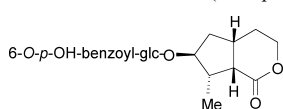
C₁₆H₂₄O₈: 344.1471; amorphous powder; [α]_D²³ +27.8° (c=0.81, MeOH); IR (dry film): 3392, 1739, 1673, 1110, 1077; ¹H-NMR (400 MHz, CD₃OD): 6.66 (q, 1.5, H-3), 1.99 (m, H-6), 2.24 (m, H-6), 1.15 (m, H-7), 2.76 (m, H-8), 3.39 (d, 11.4, H-9), 0.91 (d, 7.3, H₃-10), 1.67 (d, 1.5, H₃-11), 4.19 (d, 7.7, H-1'), 3.65 (dd, 12.1, 3.7, H-6'), 3.77 (dd, 12.1, 2.6, H-6''); ¹³C-NMR (100 MHz, CD₃OD): 172.6 (C-1), 141.5 (C-3), 113.5 (C-4), 85.2 (C-5), 37.9 (C-6), 31.6 (C-7), 38.5 (C-8), 55.2 (C-9), 17.9 (C-10), 11.4 (C-11), 99.9 (C-1'), 74.7 (C-2'), 78.1 (C-3'), 70.8 (C-4'), 77.9 (C-5'), 61.9 (C-6'). *Nepeta racemosa* (Labiatae).¹⁶⁷

292. Nepetaracemoside B



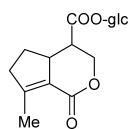
C₁₆H₂₂O₈: 342.1314; amorphous powder; [α]_D²³ -43.6° (c=0.59, MeOH); UV (MeOH): 299 (3.75); IR (film): 3386, 1703, 1638, 1075; ¹H-NMR (400 MHz, CD₃OD): 7.38 (br s, H-3), 5.05 (dd, 7.8, 3.6, H-6), 1.95 (ddd, 14.4, 3.6, 3.6, H-7_α), 2.65 (ddd, 14.4, 7.8, 7.8, H-7_β), 3.02 (m, H-8), 1.29 (d, 6.8, H₃-10), 2.12 (br s, H₃-11), 4.49 (d, 7.8, H-1'), 3.70 (dd, 11.7, 4.4, H-6'), 3.88 (br d, 11.7, H-6''); ¹³C-NMR (100 MHz, CD₃OD): 163.9 (C-1), 148.9 (C-3), 158.0 (C-4), 116.9 (C-5), 84.9 (C-6), 41.5 (C-7), 37.9 (C-8), 133.1 (C-9), 20.4 (C-10), 12.8 (C-11), 106.0 (C-1'), 75.3 (C-2'), 78.0 (C-3'), 71.6 (C-4'), 78.2 (C-5'), 62.8 (C-6'). *Nepeta racemosa* (Labiatae).¹⁶⁷

293. Ovato lactone-7-O-(6'-O-p-hydroxybenzoyl)-β-D-glucopyranoside



C₂₂H₂₈O₁₀: 452.1682; amorphous powder; [α]_D²⁵ -17.9° (c=0.6, MeOH); UV (MeOH): 206 (4.02), 256 (4.13); ¹H-NMR (400 MHz, CD₃OD): 4.18 (ddd, 11.2, 10.0, 2.4, H_β-3), 4.29 (ddd, 11.2, 4.9, 3.4, H_α-3), 1.36 (dddd, 13.4, 10.0, 10.0, 3.4, H_α-4), 1.87 (dddd, 13.4, 5.8, 4.9, 2.4, H_β-4), 2.56 (m, H-5), 1.69 (ddd, 14.1, 8.3, 4.4, H_α-6), 2.21 (ddd, 14.1, 8.5, 1.5, H_β-6), 3.92 (br dd, 4.4, 2.2, H-7), 2.63 (m, H-8), 3.32 (m, H-9), 0.88 (d, 7.3, H₃-10), 4.35 (d, 7.8, H-1'), 3.16 (dd, 8.7, 7.8, H-2'), 3.36 (m, H-3', 4'), 3.60 (m, H-5'), 4.45 (dd, 11.7, 6.8, H-6'), 4.56 (dd, 11.7, 2.3, H-6'), 7.90 (d, 8.8, H-2'', 6''), 6.83 (d, 8.8, H-3'', 5''); ¹³C-NMR (100 MHz, CD₃OD): 176.6 (C-1), 69.8 (C-3), 31.0 (C-4), 34.3 (C-5), 38.1 (C-6), 87.0 (C-7), 43.9 (C-8), 46.5 (C-9), 15.7 (C-10), 103.3 (C-1'), 75.5 (C-2'), 78.0 (C-3'), 72.1 (C-4'), 75.1 (C-5'), 65.0 (C-6'), 122.3 (C-1''), 132.9 (C-2'', 6''), 116.2 (C-3'', 5''), 163.7 (C-4''), 168.0 (C-7''). *Catalpa ovata* (Bignoniaceae).⁶²

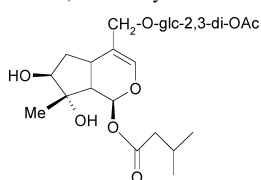
294. Iridolinaroside A



C₁₆H₂₂O₉: 358.1263; amorphous powder; [α]_D¹⁵ -65.3° (c=1.13, MeOH); UV (MeOH): 240 (3.90); IR (KBr): 3350, 2900, 1740, 1695, 1635, 1400, 1255, 1155, 1070; ¹H-NMR (400 MHz, CD₃OD): 4.45 (dd, 11.8, 3.5, H₃-3), 4.53 (dd, 11.8, 2.8, H₅-3), 3.13 (m, H-4), 2.41 (m, H-5), 2.42 (br dd, 18.0, 9.9, H_α-6), 2.55 (m, H_β-6), 1.87 (ddd, 19.8, 12.6, 9.9, H_γ-7), 2.18 (m, H_δ-7), 2.15 (t, 0.9, H₃-10), 5.47 (d, 8.1, H-1'), 3.66 (dd, 12.0, 5.1, H_α-6'), 3.83 (dd, 12.0, 1.8, H_β-6''); ¹³C-NMR (100 MHz, CD₃OD): 166.3 (C-1), 70.5 (C-3), 43.6 (C-4), 46.0 (C-5), 28.0 (C-6), 39.3 (C-7), 162.3 (C-8), 123.9 (C-9), 16.6 (C-10), 171.4 (C-11), 95.7 (C-1'), 73.9 (C-2'), 78.9 (C-3'), 71.1 (C-4'), 78.2 (C-5'), 62.4 (C-6'). *Linaria japonica* (Scrophulariaceae).¹⁸⁹

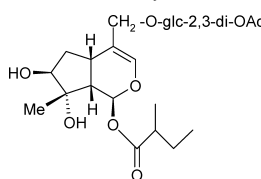
Group-3c (10-Carbon skeleton, valeriana type)

295. 2'',3''-Diacetylvalerosidate



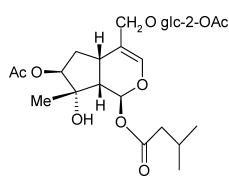
C₂₅H₃₈O₁₃: 546.2312; amorphous powder; [α]_D²⁰ -24.9° (c=1.0, MeOH); ¹H-NMR (500 MHz, CD₃OD): 6.17 (d, 5.2, H-1), 6.39 (br s, H-3), 2.88 (q-shaped m, H-5), 1.89-2.05 (m, H₂-6), 3.75 (br s, H-7), 2.38 (dd, 6.0, 5.2, H-9), 1.37 (s, H₃-10), 4.09 and 4.20 (each 1H d, 11.6, H₃-11), 2.25 (d, 7.8, H₂-2'), 2.12 (m, H-3'), 0.95 (d, 6.6, H₃-4', 5'), 4.62 (d, 7.8, H-1''), 4.78 (dd, 9.0, 7.8, H-2''), 5.05 (t, 9.0, H-3''), 3.58 (t, 9.0, H-4''), 3.42 (m, H-5''), 3.70 (dd, 12.0, 5.6, H₃-6''), 3.88 (dd, 12.0, 1.2, H₅-6''), 2.02, 2.05 (each s, 2×OAc); ¹³C-NMR (125 MHz, CD₃OD): 91.6 (C-1), 139.6 (C-3), 116.2 (C-4), 31.8 (C-5), 38.0 (C-6), 80.8 (C-7), 80.9 (C-8), 47.9 (C-9), 22.8 (C-10), 69.9 (C-11), 173.0 (C-1'), 44.1 (C-2'), 26.6 (C-3'), 22.6 (C-4', 5'), 100.4 (C-1''), 73.2 (C-2''), 76.8 (C-3''), 69.3 (C-4''), 77.3 (C-5''), 62.1 (C-6''), 20.8×2, 171.4, 172.1, (2×Ac). *Viburnum ayavacense* (Caprifoliaceae).¹⁶⁸

296. 2'',3''-Diacetylisovalerosidate

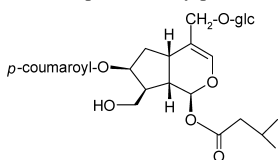


C₂₅H₃₈O₁₃: 546.2312; amorphous powder; [α]_D²⁰ -19.4° (c=0.6, MeOH); ¹H-NMR (500 MHz, CD₃OD): (for all values, except those of the 2-methyl butyryl moiety, see 2'',3''-diacetylvalerosidate), 2.37 (m, H-2'), 1.48 and 1.63 (each 1H m, H₂-3'), 0.89 (t, 7.2, H₃-4'), 1.12 (d, 6.6, H₃-5'); ¹³C-NMR (125 MHz, CD₃OD): (for all values, except those of the 2-methyl butyryl moiety, see 2'',3''-diacetylvalerosidate) 176.6 (C-1'), 41.9 (C-2'), 27.5 (C-3'), 11.7 (C-4'), 16.5 (C-5'). *Viburnum ayavacense* (Caprifoliaceae).¹⁶⁸

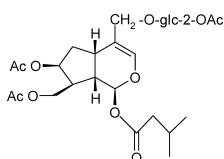
297. Viburtinoside I



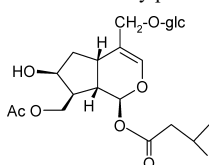
C₂₅H₃₈O₁₃: 546.2312; amorphous powder; [α]_D²⁰ -37.4° (c=1.0, MeOH); IR (KBr): 3400, 1750, 1670, 1460, 1370, 1250, 1100; ¹H-NMR (500 MHz, CD₃OD): 6.12 (d, 3.8, H-1), 6.22 (br s, H-3), 2.79 (m, H-5), 1.84 (m, H₂-6), 4.79 (dd, 4.3, 2.6, H-7), 2.20 (dd, 10.0, 3.8, H-9), 1.27 (s, H₃-10), 3.98 (d, 12.0, H-11), 4.14 (d, 12.0, H-11), 2.16 (d, 7.8, H₂-2'), 2.04 (m, H-3'), 0.90 (d, 6.6, H₃-4', 5'), 4.40 (d, 8.0, H-1''), 4.68 (dd, 9.0, 8.0, H-2''), 3.46 (t, 9.0, H-3''), 3.36 (t, 9.0, H-4''), 3.22 (partially masked by solvent signal, H-5''), 3.67 (dd, 12.0, 5.3, H₅-6''), 3.81 (dd, 12.0, 2.0, H₅-6''), 1.99, 2.02 (each s, 2×Ac); ¹³C-NMR (125 MHz, CD₃OD): 90.4 (C-1), 139.3 (C-3), 114.5 (C-4), 31.3 (C-5), 35.2 (C-6), 82.9 (C-7), 80.4 (C-8), 48.0 (C-9), 22.8 (C-10), 69.2 (C-11), 73.0 (C-1'), 44.0 (C-2'), 26.5 (C-3'), 22.5 (C-4', 5'), 100.0 (C-1''), 74.3 (C-2''), 75.3 (C-3''), 70.9 (C-4''), 76.8 (C-5''), 62.0 (C-6''). *Viburnum tinus* (Caprifoliaceae).¹⁶⁹

298. 7-*O*-*p*-Coumaroylpatrininose

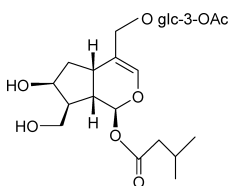
$C_{30}H_{40}O_{13}$: 608.2468; powder; $[\alpha]_D^{20} -36.9^\circ$ ($c=0.5$, MeOH); UV (MeOH): 226 (2.9), 298 sh (3.8), 310 (4.1); 1H -NMR (500 MHz, CD_3OD): 6.06 (d, 4.5, H-1), 6.41 (br s, H-3), 3.07 (m, H-5), 2.05–2.20 (m, H_2 -6, H-3'), 5.39 (m, H-7), 2.26 (m, H-8), 2.28 (dd, 8.2, 4.5, H-9), 3.67 (m, H_a -10, H_b -6''), 3.70 (dd, 11.3, 7.9, H_b -10), 4.09 and 4.28 (each d, 11.6, H_2 -11), 2.24 (d, 7.8, H_2 -2'), 0.95 (d, 6.6, H_3 -4', 5'), 4.30 (d, 7.8, H-1''), 3.20 (dd, 9.0, 7.8, H-2''), 3.40 (t, 9.0, H-3''), 3.34 (t, 9.0, H-4''), 3.27 (m, H-5''), 3.86 (dd, 12.0, 2.0, H_b -6''), 7.47 (d, 8.5, H-2'''), 6.81 (d, 8.5, H-3'''), 5.77, 7.61 (d, 16.3, H-7'''), 6.33 (d, 16.3, H-8'''); ^{13}C -NMR (125 MHz, CD_3OD): 92.7 (C-1), 140.3 (C-3), 115.6 (C-4), 33.7 (C-5), 37.9 (C-6), 76.0 (C-7), 47.5 (C-8), 43.5 (C-9), 61.5 (C-10), 69.4 (C-11), 173.0 (C-1'), 43.5 (C-2'), 26.0 (C-3'), 22.5 (C-4', 5'), 103.1 (C-1''), 74.9 (C-2''), 77.7 (C-3''), 71.5 (C-4''), 77.9 (C-5''), 62.6 (C-6''), 127.2 (C-1'''), 131.0 (C-2'''), 116.6 (C-3'''), 161.1 (C-4'''), 146.4 (C-7'''), 115.1 (C-8'''), 168.7 (C-9'''). *Viburnum rhytidophyllum* (Caprifoliaceae).¹⁷⁰

299. 7,10,2''-Tri-*O*-acetylpatrininose

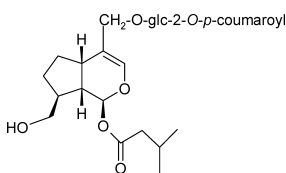
$C_{27}H_{40}O_{14}$: 588.2417; powder; $[\alpha]_D^{20} -19.5^\circ$ ($c=0.5$, MeOH); 1H -NMR (500 MHz, CD_3OD): 5.96 (d, 5.2, H-1), 6.37 (br s, H-3), 2.90 (m, H-5), 1.96 (ddd, 13.0, 7.3, 5.1, H_a -6), 2.07 (ddd, 13.0, 7.3, 3.4, H_b -6) 5.26, (m, H-7), 2.25 (m, H-8), 2.34 (dt, 5.2, 1.3, H-9), 4.22 (br s, H_2 -10), 4.08 and 4.24 (each d, 11.6, H_2 -11), 2.25 (d, 7.8, H_2 -2'), 2.16 (m, H-3'), 0.96 (d, 6.6, H_3 -4', 5'), 4.46 (d, 7.8, H-1''), 4.70 (dd, 9.0, 7.8, H-2''), 3.51 (t, 9.0, H-3''), 3.32 (t, 9.0, H-4''), 3.31 (m, H-5''), 3.68 (dd, 12.0, 5.3, H_a -6''), 3.84 (dd, 12.0, 2.0, H_b -6''), 2.02, 2.04, 2.09 (each s, 3×Ac); ^{13}C -NMR (125 MHz, CD_3OD): 92.7 (C-1), 140.6 (C-3), 116.2 (C-4), 34.1 (C-5), 38.1 (C-6), 75.7 (C-7), 43.4 (C-8), 44.0 (C-9), 63.8 (C-10), 69.2 (C-11), 173.0 (C-1'), 43.5 (C-2'), 26.0 (C-3'), 22.5 (C-4', 5'), 100.7 (C-1''), 75.3 (C-2''), 76.1 (C-3''), 71.7 (C-4''), 78.1 (C-5''), 62.6 (C-6''), 20.7, 20.9, 21.1, 171.6, 172.0, 172.5 (3×Ac). *Viburnum rhytidophyllum* (Caprifoliaceae).¹⁷⁰

300. 10-*O*-Acetylpatrininose

$C_{23}H_{36}O_{12}$: 504.2206; powder; $[\alpha]_D^{20} -51.6^\circ$ ($c=0.8$, MeOH); 1H -NMR (500 MHz, CD_3OD): 5.89 (d, 5.2, H-1), 6.38 (br s, H-3), 3.03 (m, H-5), 1.83 (ddd, 13.0, 8.1, 4.7, H_a -6), 1.98–1.05 (m, H_b -6, H-3'), 4.21–4.30 (m, H-7, H_2 -10, H_b -11, H-1''), 2.15 (m, H-8, 9), 4.09 (d, 11.3, H_a -11), 2.21 (d, 7.8, H_2 -2'), 0.97 (d, 6.6, H_3 -4', 5'), 3.20 (dd, 9.0, 7.7, H-2''), 3.24–3.33 (m, H-3'', 4'', 5''), 3.66 (dd, 11.6, 5.3, H-6''), 3.86 (dd, 11.6, 2.0, H-6''), 2.04 (s, Ac); ^{13}C -NMR (125 MHz, CD_3OD): 93.4 (C-1), 140.1 (C-3), 116.4 (C-4), 34.1 (C-5), 40.8 (C-6), 72.4 (C-7), 46.4 (C-8), 43.3 (C-9), 64.8 (C-10), 69.6 (C-11), 173.0 (C-1'), 43.5 (C-2'), 26.0 (C-3'), 22.5 (C-4', 5'), 103.3 (C-1''), 75.1 (C-2''), 77.9 (C-3''), 71.7 (C-4''), 78.1 (C-5''), 62.2 (C-6''), 20.8, 172.9 (Ac). *Viburnum rhytidophyllum* (Caprifoliaceae).¹⁷⁰

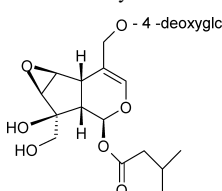
301. 3''-*O*-Acetylpatrininose

$C_{23}H_{36}O_{12}$: 504.2206; amorphous powder; $[\alpha]_D^{20} -35.9^\circ$ ($c=0.3$, MeOH); 1H -NMR (500 MHz, CD_3OD): 5.81 (d, 5.2, H-1), 6.28 (br s, H-3), 2.91 (m, H-5), 1.73 (ddd, 13.0, 7.3, 5.1, H_a -6), 1.97 (m, H_b -6, 3'), 4.22 (m, H-7), 1.86 (m, H-8), 2.08 (dt, 5.2, 1.3, H-9), 3.63 (dd, 11.0, 6.5, H_a -10), 3.72 (dd, 11.0, 7.5, H_b -10), 4.00, 4.16 (each d, 11.6, H_2 -11), 2.15 (d, 7.8, H-2'), 0.97 (d, 6.6, H_3 -4', 5'), 4.28 (d, 7.8, H-1''), 3.22–3.28 (m, H-2''), 4.84 (t, 9.0, H-3''), 3.36 (t, 9.0, H-4''), 3.58 (dd, 12.0, 5.3, H_a -6''), 3.79 (dd, 12.0, 2.0, H_b -6''), 2.01 (s, Ac); ^{13}C -NMR (125 MHz, CD_3OD): 93.6 (C-1), 140.6 (C-3), 116.4 (C-4), 34.1 (C-5), 40.9 (C-6), 73.4 (C-7), 48.7 (C-8), 42.7 (C-9), 62.2 (C-10), 69.8 (C-11), 173.3 (C-1'), 44.1 (C-2'), 26.8 (C-3'), 22.6 (C-4', 5'), 103.2 (C-1''), 73.4 (C-2''), 79.1 (C-3''), 69.4 (C-4''), 77.7 (C-5''), 62.4 (C-6''), 21.1, 172.6 (Ac). *Viburnum lantana* var. *discolor* (Caprifoliaceae).¹⁷²

302. 2''-*trans*-*p*-Coumaroyldihydropenstemide

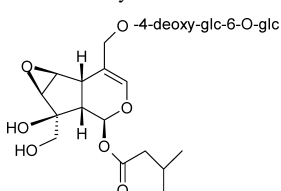
$C_{30}H_{40}O_{12}$: 592.2519; amorphous powder; $[\alpha]_D^{20} -59.7^\circ$ ($c=0.3$, MeOH); UV (EtOH): 226 (3.0), 299 sh (3.9), 311 (4.1); 1H -NMR (500 MHz, CD_3OD): 5.90 (d, 4.4, H-1), 6.30 (br s, H-3), 2.62 (q-shaped m, H-5), 1.57 (br dq, 12.4, 6.2, H_a -6), 1.65–1.75 (2m, H_b -6, H_b -7), 1.26 (br dq, 12.7, 6.8, H_a -7), 1.90 (m, H-8, 9), 3.40 (m, H_2 -10, H-4''), 4.04 and 4.22 (each d, 11.6, H_2 -11), 2.19 (d, 2.7, H_2 -2'), 2.03 (m, H-3'), 0.93 (d, 6.6, H_3 -4', 5'), 4.55 (d, 7.8, H-1''), 4.81 (dd, 8.6, 7.8, H-2''), 3.62 (dd, 9.4, 8.6, H-3''), 3.34 (ddd, 9.4, 5.5, 2.2, H-5''), 3.70 (dd, 12.0, 5.5, H_a -6''), 3.91 (dd, 12.0, 2.2, H_b -6''), 7.46 (d, 8.4, H-2'''), 6.81 (d, 8.4, H-3'''), 5.77, 7.64 (d, 15.8, H-7'''), 6.35 (d, 15.8, H-8'''); ^{13}C -NMR (125 MHz, CD_3OD): 93.1 (C-1), 140.7 (C-3), 115.4 (C-4), 36.8 (C-5), 30.9 (C-6), 28.3 (C-7), 43.8 (C-8), 45.0 (C-9), 66.5 (C-10), 69.0 (C-11), 173.6 (C-1'), 44.3 (C-2'), 26.9 (C-3'), 22.8 (C-4', 5'), 101.7 (C-1''), 75.4 (C-2''), 76.2 (C-3''), 71.9 (C-4''), 78.1 (C-5''), 62.8 (C-6''), 127.3 (C-1'''), 131.3 (C-2'''), 117.0 (C-3'''), 161.4 (C-4'''), 146.9 (C-7'''), 114.9 (C-8'''), 168.4 (C-9'''). *Viburnum prunifolium* (Caprifoliaceae).¹⁷¹

303. 4''-Deoxykanokoside A



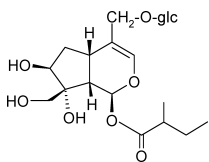
$C_{21}H_{32}O_{11}$: 460.1944; amorphous; $[\alpha]_D^{20} -122^\circ$ ($c=0.1$, MeOH); IR (KBr): 3409, 2958, 2929, 2873, 1734, 1675, 1631; 1H -NMR (500 MHz, CD_3OD): 6.39 (br s, H-1), 6.40 (br s, H-3), 3.07 (dd, 8.5, 1.5, H-5), 4.03 (d, 2.5, H-6), 3.35 (d, 2.5, H-7), 2.01 (d, 8.5, H-9), 3.68 (d, 4.0, H_2 -10), 4.22 and 4.33 (each d, 11.5, H_2 -11), 2.16 (d, 1.5, H-2'), 2.18 (d, 2.0, H-2''), 2.03 (m, H-3'), 0.93 (d, 7.0, H_3 -4', 5'), 4.32 (d, 8.0, H-1''), 3.10 (dd, 9.0, 8.0, H-2''), 3.60 (m, H-3''), 1.35 (dt, 12.5, 11.0, H_a -4''), 1.91 (ddd, 12.5, 5.5, 2.0, H_b -4''), 3.53 (m, H-5''), 3.56 (br s, H_2 -6''); ^{13}C -NMR (125 MHz, CD_3OD): 90.5 (C-1), 142.5 (C-3), 109.3 (C-4), 35.4 (C-5), 59.7 (C-6), 60.1 (C-7), 80.1 (C-8), 43.4 (C-9), 67.0 (C-10), 69.5 (C-11), 173.0 (C-1'), 44.1 (C-2'), 26.8 (C-3'), 22.6 (C-4', 5'), 102.5 (C-1''), 76.9 (C-2''), 72.3 (C-3''), 36.5 (C-4''), 73.9 (C-5''), 65.6 (C-6''). *Centranthus longiflorus* (Valerianaceae).¹⁷³

304. 4''-Deoxykanokoside C

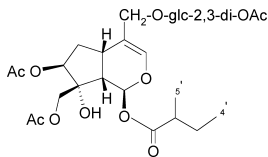


$C_{27}H_{42}O_{16}$: 622.2472; amorphous; $[\alpha]_D^{20} -107.0^\circ$ ($c=0.1$, MeOH); IR (KBr): 3409, 2958, 2929, 2873, 1734, 1675, 1631; 1H -NMR (500 MHz, CD_3OD): 6.39 (br s, H-1), 6.43 (d, 2.0, H-3), 3.07 (dd, 8.5, 1.5, H-5), 4.05 (d, 2.5, H-6), 3.35 (d, 2.5, H-7), 2.01 (d, 7.5, H-9), 3.68 (d, 4.0, H_2 -10), 4.22 and 4.33 (each d, 11.5, H_2 -11), 2.16 (d, 1.0, H-2'), 2.18 (d, 1.5, H-2''), 2.03 (m, H-3'), 0.94 (d, 7.5, H_3 -4', 5'), 4.34 (d, 8.0, H-1''), 3.11 (dd, 9.0, 7.5, H-2''), 3.59 (m, H-3''), 1.38 (dt, 12.5, 11.5, H-4''), 1.94 (ddd, 12.5, 5.5, 1.5, H-4''), 3.75 (m, H-5''), 3.68 (m, H_a -6''), 3.82 (m, H_b -6''), 4.37 (d, 8.0, H-1'''), 3.19 (dd, 9.0, 7.5, H-2'''), 3.34 (m, H-3'''), 3.27 (m, H-4'''), 3.66 (dd, 12.0, 5.5, H_a -6'''), 3.86 (dd, 12.0, 1.5, H_b -6'''); ^{13}C -NMR (125 MHz, CD_3OD): 90.6 (C-1), 142.7 (C-3), 109.2 (C-4), 35.5 (C-5), 59.7 (C-6), 60.2 (C-7), 80.1 (C-8), 43.4 (C-9), 67.0 (C-10), 69.6 (C-11), 173.0 (C-1'), 44.1 (C-2'), 26.8 (C-3'), 22.6 (C-4', 5'), 102.5 (C-1''), 76.9 (C-2''), 72.3 (C-3''), 36.7 (C-4''), 72.8 (C-5''), 72.6 (C-6''), 104.9 (C-1'''), 75.1 (C-2'''), 78.1 (C-3'''), 71.6 (C-4'''), 78.0 (C-5'''), 62.8 (C-6'''). *Centranthus longiflorus* (Valerianaceae).¹⁷³

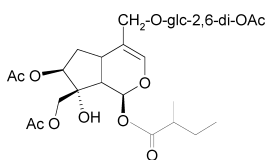
305. Isosuspensolid F



$C_{21}H_{34}O_{12}$: 478.2050; amorphous powder; $[\alpha]_D^{20} -19.6^\circ$ ($c=1.0$, MeOH); 1H -NMR (500 MHz, CD_3OD): 6.13 (d, 4.5, H-1), 6.36 (br s, H-3), 3.04 (q-shaped m, H-5), 2.00 (m, H₂-6), 2.34 (dd, 9.6, 4.5, H-9), 3.69 (m, H₂-10), 4.11 (d, 11.3, H_a-11), 4.27—4.32 (m, H_b-11, 1''), 2.38 (m, H-2'), 1.48 and 1.62 (each m, H₂-3'), 0.89 (t, 7.2, H₃-4'), 1.12 (d, 6.6, H₃-5'), 3.21 (dd, 9.0, 7.8, H-2''), 3.24—3.37 (m, H-3'', 4'', 5''), 3.66 (dd, 11.6, 5.3, H_a-6''), 3.86 (dd, 11.6, 2.0, H_b-6''); ^{13}C -NMR (125 MHz, CD_3OD): 91.9 (C-1), 140.1 (C-3), 116.6 (C-4), 33.1 (C-5), 38.2 (C-6), 79.5 (C-7), 83.9 (C-8), 44.9 (C-9), 66.4 (C-10), 69.8 (C-11), 176.6 (C-1'), 42.2 (C-2'), 27.7 (C-3'), 11.7 (C-4'), 16.6 (C-5'), 103.4 (C-1''), 75.1 (C-2''), 77.9 (C-3''), 71.7 (C-4''), 78.1 (C-5''), 62.8 (C-6''). *Viburnum ayavacense* (Caprifoliaceae).¹⁶⁸

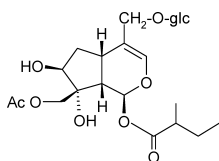
306. 7,10,2'',3''-Tetra-*O*-acetylisosuspensolid F

$C_{29}H_{42}O_{16}$: 646.2472; amorphous powder; $[\alpha]_D^{20} -38.9^\circ$ ($c=5.0$, MeOH); 1H -NMR (500 MHz, CD_3OD): (for all values, except those of the 2-methyl butyryl moiety, see 7,10,2'',3''-tetraacetyl suspensolid F) 2.40 (m, H-2'), 1.50 and 1.67 (each 1H m, H₂-3'), 0.92 (t, H₃-4'), 1.14 (d, 6.6, H₃-5''); ^{13}C -NMR (125 MHz, CD_3OD): (for all values, except those of the 2-methyl butyryl, see 7,10,2'',3''-tetraacetylisosuspensolid F) 176.1 (C-1'), 41.9 (C-2'), 27.4 (C-3'), 11.6 (C-4'), 16.6 (C-5'). *Viburnum ayavacense* (Caprifoliaceae).¹⁶⁸

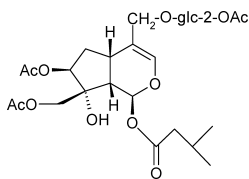
307. 7,10,2'',6''-Tetra-*O*-acetylisosuspensolid F

$C_{29}H_{42}O_{16}$: 646.2472; amorphous powder; $[\alpha]_D^{20} -24.1^\circ$ ($c=2.2$, MeOH); 1H -NMR (500 MHz, CD_3OD): 6.12 (d, 5.2, H-1), 6.43 (br s, H-3), 2.90 (q-shaped m, H-5), 1.96—2.12 (m, H₂-6), 5.02 (m, H-7), 2.38 (m, H-9, H-2'), 4.18 (br s, H₂-10), 4.08 (d, 11.6, H_a-11), 4.26 (m, H_b-11, H_a-6''), 1.50 and 1.67 (each 1H m, H-3'), 0.90 (t, 7.2, H₃-4'), 1.12 (d, 6.6, H₃-5') 4.49 (d, 7.8, H-10'), 4.72 (dd, 9.0, 7.8, H-2''), 3.53 (t, 9.0, H-3''), 3.38 (t, 9.0, H-4''), 3.48 (m, H-5''), 4.41 (dd, 12.0, 1.2, H_b-6''), 2.00, 2.04, and 2.05, (each s, 3×OAc); ^{13}C -NMR (125 MHz, CD_3OD): 91.1 (C-1), 140.7 (C-3), 114.9 (C-4), 33.8 (C-5), 36.2 (C-6), 80.6 (C-7), 81.9 (C-8), 45.5 (C-9), 67.7 (C-10), 69.3 (C-11), 176.3 (C-1'), 41.9 (C-2'), 27.4 (C-3'), 11.7 (C-4'), 16.6 (C-5'), 100.1 (C-1''), 74.8 (C-2''), 75.6 (C-3''), 71.2 (C-4''), 75.0 (C-5''), 64.3 (C-6''), 20.7, 20.8, 21.0, 21.1, 171.4×2, 172.3, 172.4 (4×Ac). *Viburnum ayavacense* (Caprifoliaceae).¹⁶⁸

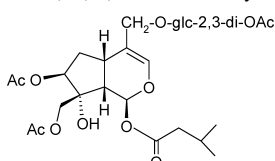
308. Isosuspensolid E



$C_{23}H_{36}O_{13}$: 520.2155; amorphous powder; $[\alpha]_D^{20} -26.6^\circ$ ($c=1.0$, MeOH); 1H -NMR (500 MHz, CD_3OD): 6.18 (d, 4.5, H-1), 6.40 (br s, H-3), 3.08 (q-shaped m, H-5), 2.04 (m, H₂-6), 3.98 (br s, H-7), 2.34 (dd, 9.6, 4.5, H-9), 4.21—4.31 (m, H₂-10, H_b-11, H-1''), 4.11 (d, 11.3, H_a-11), 2.38 (m, H-2'), 1.49 and 1.64 (each m, H₂-3'), 0.89 (t, 7.2, H₃-4'), 1.11 (d, 6.6, H₃-5'), 3.21 (dd, 9.0, 7.8, H-2''), 3.24—3.37 (m, H-3'', 4'', 5''), 3.67 (dd, 11.6, 5.3, H_a-6''), 3.86 (dd, 11.6, 2.0, H_b-6''), 2.07 (s, Ac); ^{13}C -NMR (125 MHz, CD_3OD): 91.7 (C-1), 140.0 (C-3), 116.4 (C-4), 32.9 (C-5), 36.1 (C-6), 78.5 (C-7), 82.8 (C-8), 45.4 (C-9), 68.7 (C-10), 69.5 (C-11), 176.5 (C-1'), 42.0 (C-2'), 27.6 (C-3'), 11.7 (C-4'), 16.6 (C-5'), 103.2 (C-1''), 74.9 (C-2''), 77.6 (C-3''), 71.4 (C-4''), 77.8 (C-5''), 62.6 (C-6''), 20.8, 173.1, (Ac). *Viburnum ayavacense* (Caprifoliaceae).¹⁶⁸

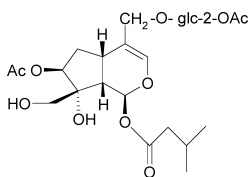
309. 7,10,2''-Tri-*O*-acetylsuspensolid F

$C_{27}H_{40}O_{15}$: 604.2367; amorphous powder; $[\alpha]_D^{20} -35.3^\circ$ ($c=1.3$, MeOH); 1H -NMR (500 MHz, CD_3OD): 6.14 (d, 5.3, H-1), 6.38 (br s, H-3), 2.90 (q-shaped m, H-5), 1.98 (m, H-6), 2.10 (m, H-6, 3'), 5.02 (t, 2.9, H-7), 2.39 (dd, 9.9, 5.3, H-9), 4.27, 4.20 (each d, 11.5, H₂-10), 4.25, 4.11 (each d, 11.5, H₂-11), 2.22 (d, 6.9, H₂-2'), 0.95 (d, 6.6, H₃-4', 5'), 4.50 (d, 8.0, H-1''), 4.71 (dd, 9.4, 8.0, H-2''), 3.51 (t, 9.4, H-3''), 3.34 and 3.27 (partially masked by the solvent signal, H-4'', 5''), 3.88 (dd, 12.0, 1.7, H-6''), 3.68 (dd, 12.0, 5.6, H-6''), 2.03, 2.05 and 2.09 (each s, 3×Ac); ^{13}C -NMR (125 MHz, CD_3OD): 91.3 (C-1), 140.9 (C-3), 115.4 (C-4), 33.9 (C-5), 36.5 (C-6), 80.8 (C-7), 82.2 (C-8), 45.8 (C-9), 67.9 (C-10), 69.3 (C-11), 172.9 (C-1'), 42.2 (C-2'), 26.8 (C-3'), 22.6 and 22.7 (C-4', 5'), 100.4 (C-1''), 75.3 (C-2''), 76.1 (C-3''), 71.7 (C-4''), 78.0 (C-5''), 62.6 (C-6''), 20.7, 21.0, 21.1, 171.6, 171.7 and 172.6 (3×Ac). *Viburnum sargentii* (Caprifoliaceae).¹⁷⁴

310. 7,10,2'',3''-Tetra-*O*-acetylsuspensolid F

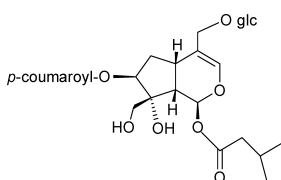
$C_{29}H_{42}O_{16}$: 646.2472; amorphous powder; $[\alpha]_D^{20} -47.3^\circ$ ($c=5.0$, MeOH); 1H -NMR (500 MHz, CD_3OD): 6.13 (d, 5.2, H-1), 6.40 (br s, H-3), 2.92 (q shaped m, H-5), 1.96—2.12 (m, H₂-6), 5.02 (m, H-7), 2.38 (dd, 6.0, 5.2, H-9), 4.22 (br s, H₂-10), 4.14, 4.28 (each d, 11.6, H₂-11), 2.25 (d, 7.8, H₂-2'), 2.15 (m, H-3'), 0.96 (d, 6.6, H₃-4', 5'), 4.64 (d, 7.8, H-1''), 4.79 (dd, 9.0, 7.8, H-2''), 5.07 (t, 9.0, H-3''), 3.57 (t, 9.0, H-4''), 3.43 (ddd, 9.0, 5.6, 2.2, H-5''), 3.71 (dd, 12.0, 5.6, H_a-6''), 3.88 (dd, 12.0, 2.2, H_b-6''), 2.00, 2.02, 2.03, 2.06 (each s, 4×OAc); ^{13}C -NMR (125 MHz, CD_3OD): 91.1 (C-1), 140.8 (C-3), 115.0 (C-4), 33.8 (C-5), 36.3 (C-6), 80.5 (C-7), 82.0 (C-8), 45.5 (C-9), 67.6 (C-10), 69.3 (C-11), 172.6 (C-1'), 44.0 (C-2'), 27.5 (C-3'), 22.5 (C-4', 5'), 99.7 (C-1''), 73.1 (C-2''), 76.8 (C-3''), 69.3 (C-4''), 77.3 (C-5''), 62.1 (C-6''), 20.6, 20.7×2, 20.9, 171.0, 171.4, 171.9, 172.3 (4×Ac). *Viburnum ayavacense* (Caprifoliaceae).¹⁶⁸

311. Viburtinoside V



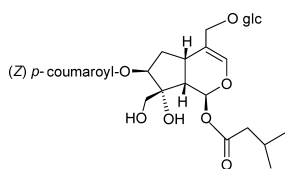
$C_{25}H_{38}O_{14}$: 562.2261; amorphous powder; $[\alpha]_D^{20} -45.7^\circ$ ($c=0.7$, MeOH); IR (KBr): 3400, 1730, 1650, 1100; 1H -NMR (500 MHz, CD_3OD): 6.13 (d, 4.9, H-1), 6.35 (br s, H-3), 2.86 (br q, H-5), 1.98 (m, H₂-6), 4.94 (dt, 3.3, H-7), 2.33 (dd, 9.7, 4.9, H-9), 3.69 (br s, H₂-10), 4.12 and 4.25 (each d, 11.6, H₂-11), 2.22 (d, 6.9, H₂-2'), 2.10 (m, H-3'), 0.95 (d, 6.6, H₃-4', 5'), 4.50 (d, 8.0, H-1''), 4.71 (dd, 9.3, 8.0, H-2''), 3.51 (t, 9.3, H-3''), 3.34 (partially masked by solvent peak, H-4''), 3.27 (partially masked by solvent peak, H-5''), 3.67 (dd, 12.0, 5.1, H-6''), 3.86 (dd, 12.0, 1.9, H-6''), 2.05, 2.08 (each s, 2×Ac); ^{13}C -NMR (125 MHz, CD_3OD): 91.7 (C-1), 140.6 (C-3), 115.3 (C-4), 33.1 (C-5), 36.0 (C-6), 81.4 (C-7), 79.3 (C-8), 45.3 (C-9), 65.6 (C-10), 69.4 (C-11), 173.0 (C-1'), 44.0 (C-2'), 26.5 (C-3'), 22.5 (C-4', 5'), 100.5 (C-1''), 75.2 (C-2''), 76.1 (C-3''), 68.8 (C-4''), 77.9 (C-5''), 62.6 (C-6''), — (Ac). *Viburnum tinus* (Caprifoliaceae).¹⁶⁹

312. Luzonoside A



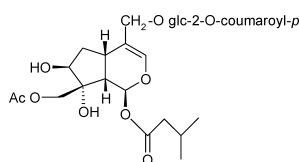
$C_{30}H_{40}O_{14}$: 624.2412; yellow paste; $[\alpha]_D^{21} -18.6^\circ$ ($c=0.60$, MeOH); UV (EtOH): 226 (4.04), 315 (4.25); IR (film): 3364, 1720, 1684, 1589, 1515; 1H -NMR (600 MHz, CD_3OD): δ 6.21 (d, 4.4, H-1), 6.41 (s, H-3), 3.09 (ddd, 7.4, 7.4, 9.9, H-5), 2.24 (ddd, 4.4, 7.4, 11.8, H-6), 2.17 (ddd, 4.4, 7.4, 11.8, H-6), 5.10 (dd, 4.4, 4.4, H-7), 2.45 (dd, 4.4, 9.9, H-9), 3.67 (d, 11.5, H-10), 3.73 (d, 11.5, H-10), 4.13 (d, 11.5, H-11), 4.29 (d, 11.5, H-11), 2.22 (d, 6.6, H₂-2'), 2.09 (tq, 6.6, 6.6, H-3'), 0.97 (d, 6.6, H-4', H-5'), 4.30 (d, 8.0, H-1''), 3.19 (dd, 8.0, 9.3, H-2''), 3.34 (t, 9.3, H-3''), 3.26 (m, H-4'', H-5''), 3.75 (dd, 1.4, 11.5, H-6''), 3.86 (dd, 1.4, 11.5, H-6''), 6.34 (d, 15.9, H-8''), 7.61 (d, 15.9, H-7''), 7.47 (d, 8.8, H-2''), H-6''), 6.80 (d, 8.8, H-3''), H-5''); ^{13}C -NMR (150 MHz, CD_3OD): δ 91.5 (C-1), 140.7 (C-3), 115.9 (C-4), 33.0 (C-5), 35.9 (C-6), 81.6 (C-7), 83.4 (C-8), 45.3 (C-9), 66.0 (C-10), 69.8 (C-11), 173.1 (C-1'), 44.2 (C-2'), 26.8 (C-3'), 22.7 (C-4', C-5'), 103.4 (C-1''), 75.2 (C-2''), 78.1 (C-3''), 71.7 (C-4''), 78.0 (C-5''), 62.8 (C-6''), 167.7 (C-9''), 115.2 (C-8''), 146.9 (C-7''), 127.8 (C-1''), 131.3 (C-2''), C-6''), 116.8 (C-3''), C-5''), 161.4 (C-4''). *Viburnum luzonicum* (Caprifoliaceae).¹⁶⁴

313. Luzonoside B



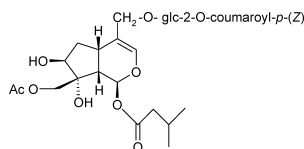
$C_{30}H_{40}O_{14}$; 624.2412; yellow paste; $[\alpha]_D^{21} -41.1^\circ$ ($c=0.45$, MeOH); UV (EtOH): 225 (4.12), 315 (4.33); IR (film): 3370, 1732, 1687, 1589, 1515; 1H -NMR (600 MHz, CD_3OD): δ 6.17 (d, 4.4, H-1), 6.34 (s, H-3), 2.92 (ddd, 8.0, 8.0, 9.9, H-5), 2.10 (ddd, 4.1, 8.0, 11.3, H-6), 2.17 (ddd, 4.1, 8.0, 11.3, H-6), 5.04 (dd, 4.1, 4.1, H-7), 2.27 (dd, 4.4, 9.9, H-9), 3.56 (d, 11.3, H-10), 3.59 (d, 11.3, H-10), 4.11 (d, 11.7, H-11), 4.28 (d, 11.7, H-11), 2.22 (d, 7.1, H₂-2'), 2.08 (tq, 5.2, 7.1, H-3'), 0.96 (d, 5.2, H-4', H-5'), 4.31 (d, 7.7, H-1''), 3.20 (dd, 7.7, 9.1, H-2''), 3.34 (t, 9.1, H-3''), 3.27 (m, H-4'', H-5''), 3.65 (dd, 1.6, 11.8, H-6''), 3.87 (dd, 1.6, 11.8, H-6''), 5.79 (d, 12.6, H-8''), 6.91 (d, 12.6, H-7'''), 7.54 (d, 8.5, H-2''', H-6'''), 6.76 (d, 8.5, H-3''', H-5'''); ^{13}C -NMR (150 MHz, CD_3OD): 91.4 (C-1), 140.5 (C-3), 115.9 (C-4), 33.0 (C-5), 36.0 (C-6), 81.3 (C-7), 83.4 (C-8), 45.3 (C-9), 65.8 (C-10), 69.8 (C-11), 173.1 (C-1'), 44.2 (C-2'), 26.8 (C-3'), 22.7 (C-4', C-5'), 103.4 (C-1''), 75.1 (C-2''), 78.1 (C-3''), 71.8 (C-4''), 78.0 (C-5''), 62.8 (C-6''), 168.7 (C-9''), 116.9 (C-8''), 145.4 (C-7''), 128.0 (C-1'''), 133.4 (C-2'''), C-6'''), 115.9 (C-3'''), C-5'''), 161.4 (C-4'''). *Viburnum luzonicum* (Caprifoliaceae).¹⁶⁴

314. Viburtinoside II



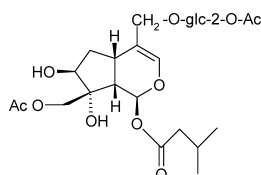
$C_{32}H_{42}O_{15}$; 666.2523; amorphous powder; $[\alpha]_D^{20} -39.7^\circ$ ($c=2.7$, MeOH); UV (?): 226 (3.80), 299 (3.90), 311 (4.10); IR (KBr): 3400, 1740, 1700, 1630, 1600, 1510, 1240, 830; 1H -NMR (500 MHz, CD_3OD): 6.18 (d, 4.0, H-1), 6.30 (brs, H-3), 2.90 (br q, H-5), 1.89 (m, H₂-6), 3.92 (br s, H-7), 2.26 (dd, 9.6, 4.5, H-9), 4.18 (brs, H₂-10), 4.05—4.25 (m, H₂-11), 2.15 (d, 8.0, H₂-2'), 2.04 (m, H-3'), 0.93 (d, 6.6, H₃-4', 5'), 4.55 (d, 8.2, H-1''), 4.81 (dd, 9.0, 8.0, H-2''), 3.58 (t, 9.0, H-3''), 3.39 (t, 9.0, H-4''), 3.27 (partially masked by solvent signal, H-5''), 3.70 (dd, 12.0, 5.4, H-6''), 3.88 (dd, 12.0, 1.8, H-6''), 7.47 (d, 8.0, H-2'''), 6.80 (d, 8.0, H-3'''), 5.79 (d, 12.0, H-7'''), 6.40 (d, 12.0, H-8'''), 2.01 (s, Ac); ^{13}C -NMR (125 MHz, CD_3OD): 91.5 (C-1), 140.1 (C-3), 115.5 (C-4), 32.4 (C-5), 38.4 (C-6), 78.9 (C-7), 82.5 (C-7), 82.5 (C-7), 82.5 (C-7), 68.9 (C-10), 69.7 (C-11), 173.0 (C-1'), 44.0 (C-2'), 26.5 (C-3'), 22.5 (C-4', 5'), 101.1 (C-1''), 75.2 (C-2''), 76.0 (C-3''), 71.7 (C-4''), 77.9 (C-5''), 62.6 (C-6''), 127.2 (C-1'''), 131.2 (C-2'''), 116.8 (C-3'''), 161.1 (C-4'''), 146.8 (C-7'''), 115.8 (C-8'''), 167.6 (C-9'''), — (Ac). *Viburnum tinus* (Caprifoliaceae).¹⁶⁹

315. Viburtinoside III



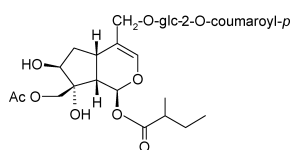
$C_{32}H_{42}O_{15}$; 666.2523; amorphous powder; $[\alpha]_D^{20} -40.1^\circ$ ($c=2.3$, MeOH); UV (?): 226 (3.80), 299 (3.90), 312 (4.10); IR (KBr): 3400, 1740, 1705, 1625, 1600, 1515, 1240, 835; 1H -NMR (500 MHz, CD_3OD): 6.13 (d, 4.0, H-1), 6.32 (brs, H-3), 2.84 (br q, H-5), 1.85 (m, H₂-6), 3.88 (br s, H-7), 2.33 (dd, 9.6, 4.0, H-9), 4.17 (brs, H₂-10), 4.05—4.25 (m, H₂-11), 2.15 (d, 8.0, H₂-2'), 2.05 (m, H-3'), 0.92 (d, 6.6, H₃-4', 5'), 4.50 (d, 8.0, H-1''), 4.81 (dd, 9.0, 8.0, H-2''), 3.57 (t, 9.0, H-3''), 3.42 (t, 9.0, H-4''), 3.32 (partially masked by solvent signal, H-5''), 3.68 (dd, 12.0, 5.1, H₂-6''), 3.88 (dd, 12.0, 1.8, H₂-6''), 7.68 (d, 8.0, H-2'''), 6.74 (d, 8.0, H-3'''), 6.87 (d, 12.0, H-7'''), 5.84 (d, 12.0, H-8'''), 2.03 (s, Ac); ^{13}C -NMR (125 MHz, CD_3OD): 91.7 (C-1), 140.6 (C-3), 116.0 (C-4), 32.2 (C-5), 37.2 (C-6), 79.1 (C-7), 81.8 (C-8), 45.2 (C-9), 69.0 (C-10), 69.8 (C-11), 173.0 (C-1'), 44.0 (C-2'), 26.5 (C-3'), 22.5 (C-4', 5'), 101.3 (C-1''), 74.6 (C-2''), 76.1 (C-3''), 71.9 (C-4''), 78.1 (C-5''), 62.7 (C-6''), 127.4 (C-1'''), 133.9 (C-2'''), 115.9 (C-3'''), 160.2 (C-4'''), 145.5 (C-7'''), 115.3 (C-8'''), 168.2 (C-9'''), — (Ac). *Viburnum tinus* (Caprifoliaceae).¹⁶⁹

316. Viburtinoside IV



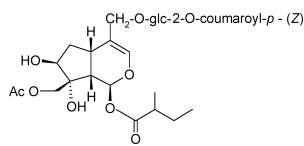
$C_{25}H_{38}O_{14}$; 562.2261; amorphous powder; $[\alpha]_D^{20} -68.9^\circ$ ($c=2.0$, MeOH); IR (KBr): 3400, 1730, 1660, 1100; 1H -NMR (500 MHz, CD_3OD): 6.17 (d, 4.5, H-1), 6.32 (brs, H-3), 2.93 (br q, H-5), 1.93 (m, H₂-6), 3.94 (br t, 3.4, H-7), 2.32 (dd, 10.0, 4.5, H-9), 4.22 (brs, H₂-10), 4.07 and 4.23 (each d, 11.2, H₂-11), 2.20 (d, 7.2, H₂-2'), 2.06 (m, H-3'), 0.94 (d, 6.6, H₃-4', 5'), 4.49 (d, 8.0, H-1''), 4.70 (dd, 9.3, 8.0, H-2''), 3.53 (t, 9.3, H-3''), 3.36 (t, 9.3, H-4''), 3.29 (partially masked by solvent signal, H-5''), 3.69 (dd, 12.0, 5.4, H-6''), 3.88 (dd, 12.0, 2.4, H-6''), 2.05, 2.08 (each s, 2×Ac); ^{13}C -NMR (125 MHz, CD_3OD): 91.6 (C-1), 140.1 (C-3), 116.0 (C-4), 33.0 (C-5), 38.4 (C-6), 79.2 (C-7), 82.7 (C-8), 45.4 (C-9), 68.8 (C-10), 69.6 (C-11), 173.0 (C-1'), 44.0 (C-2'), 26.5 (C-3'), 22.5 (C-4', 5'), 100.7 (C-1''), 75.2 (C-2''), 76.0 (C-3''), 71.5 (C-4''), 77.8 (C-5''), 62.5 (C-6''), — (Ac). *Viburnum tinus* (Caprifoliaceae).¹⁶⁹

317. Isoviburtinoside II



$C_{32}H_{42}O_{15}$; 666.2523; amorphous powder; $[\alpha]_D^{20} -23.8^\circ$ ($c=0.4$, MeOH); UV (MeOH): 226 (3.0), 299 sh (3.9), 314 (4.1); 1H -NMR (500 MHz, CD_3OD): 6.12 (d, 4.5, H-1), 6.30 (brs, H-3), 2.90 (q-shaped m, H-5), 1.89—2.10 (m, H₂-6), 3.90 (brs, H-7), 2.27 (dd, 7.5, 4.5, H-9), 4.18 (brs, H₂-10), 4.14 and 4.28 (each 1H d, 11.6, H₂-11), 2.34 (m, H-2'), 1.46 and 1.67 (each 1H m, H₂-3'), 0.88 (t, 7.2, H₃-4'), 1.09 (d, 6.6, H₃-5') 4.55 (d, 7.8, H-1''), 4.81 (dd, 9.0, 7.8, H-2''), 3.58 (t, 9.0, H-3''), 3.39 (t, 9.0, H-4''), 3.32 (m, H-5''), 3.70 (dd, 12.0, 5.4, H₂-6''), 3.88 (dd, 12.0, 1.8, H₂-6''), 2.02 (s, OAc), 7.47 (d, 8.0, H-2'''), 6.80 (d, 8.0, H-3'''), 7.64 (d, 12.0, H-7'''), 6.40 (d, 12.0, H-8'''); ^{13}C -NMR (125 MHz, CD_3OD): 91.6 (C-1), 140.0 (C-3), 116.0 (C-4), 32.5 (C-5), 38.4 (C-6), 78.9 (C-7), 82.7 (C-8), 45.5 (C-9), 68.9 (C-10), 69.7 (C-11), 176.6 (C-1'), 42.1 (C-2'), 27.7 (C-3'), 11.7 (C-4'), 16.6 (C-5'), 101.1 (C-1''), 75.2 (C-2''), 76.2 (C-3''), 71.7 (C-4''), 78.0 (C-5''), 62.7 (C-6''), 127.2 (C-1'''), 131.0 (C-2'''), 116.8 (C-3'''), 160.9 (C-4'''), 146.7 (C-7'''), 115.3 (C-8'''), 168.2 (C-9'''), 20.8, 173.0 (Ac). *Viburnum ayavacense* (Caprifoliaceae).¹⁶⁸

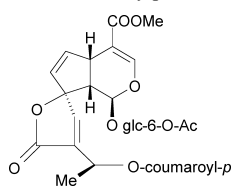
318. Isoviburtinoside III



$C_{32}H_{42}O_{15}$; 666.2523; amorphous powder; $[\alpha]_D^{20} -25.4^\circ$ ($c=0.4$, MeOH); UV (MeOH): 226 (3.0), 299 sh (3.9), 312 (4.1); 1H -NMR (500 MHz, CD_3OD): 6.13 (d, 4.5, H-1), 6.32 (brs, H-3), 2.84 (q-shaped m, H-5), 1.89—2.10 (m, H₂-6), 3.90 (brs, H-7), 2.33 (m, H-9, H-2'), 4.18 (brs, H₂-10), 4.07 and 4.22 (each d, H₂-11), 1.46 and 1.60 (each m, H₂-3'), 0.88 (t, 7.2, H₃-4'), 1.09 (d, 6.6, H₃-5') 4.50 (d, 7.8, H-1''), 4.81 (dd, 9.0, 7.8, H-2''), 3.58 (t, 9.0, H-3''), 3.39 (t, 9.0, H-4''), 3.32 (m, partially masked by solvent signal, H-5''), 3.70 (dd, 12.0, 5.4, H₂-6''), 3.88 (dd, 12.0, 1.8, H₂-6''), 7.68 (d, 8.0, H-2'''), 6.74 (d, 8.0, H-3'''), 6.87 (d, 12.0, H-7'''), 5.84 (d, 12.0, H-8'''), 2.08 (s, Ac); ^{13}C -NMR (125 MHz, CD_3OD): 91.5 (C-1), 140.0 (C-3), 115.8 (C-4), 32.5 (C-5), 38.4 (C-6), 78.9 (C-7), 82.7 (C-8), 45.5 (C-9), 68.9 (C-10), 69.7 (C-11), 176.6 (C-1'), 42.1 (C-2'), 27.7 (C-3'), 11.7 (C-4'), 16.6 (C-5'), 101.2 (C-1''), 75.2 (C-2''), 76.2 (C-3''), 71.7 (C-4''), 78.0 (C-5''), 62.7 (C-6''), 127.4 (C-1'''), 133.9 (C-2'''), 115.5 (C-3'''), 160.9 (C-4'''), 145.6 (C-7'''), 115.9 (C-8'''), 168.2 (C-9'''), 20.8, 173.0 (Ac). *Viburnum ayavacense* (Caprifoliaceae).¹⁶⁸

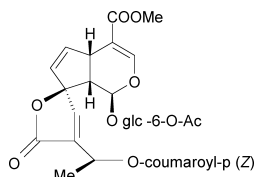
Group-3d (10-Carbon skeleton, plumeria type)

319. 6'-O-Acetylplumeride-p-E-coumarate



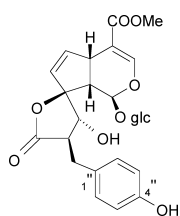
$C_{32}H_{34}O_{15}$; 658.1897; prismatic rods; mp 202—203 °C; $[\alpha]_D^{24} -56.0^\circ$ ($c=0.0132$, MeOH); UV (MeOH): 193 (3.61), 207 (3.88), 284.8 (3.69); IR (CHCl₃): 3500 br, 1750—1670, 1640—1560; ¹H-NMR (300 MHz, CD₃OD): 5.07 (d, 5.7, H-1), 7.52 (s, H-3), 3.94 (ddd, 7.4, 2.4, 2.3, H-5), 6.47 (dd, 5.6, 2.4, H-6), 5.54 (dd, 5.6, 2.3, H-7), 2.88 (dd, 7.4, 5.7, H-9), 7.49 (d, 1.2, H-10), 5.70 (dq, 6.6, 1.2, H-13), 1.56 (d, 6.6, H₂-14), 3.75 (s, MeO-15), 4.70 (d, 7.9, H-1'), 3.23 (dd, 9.1, 7.9, H-2'), 3.42 (dd, 9.1, 8.0, H-3'), 3.38 (dd, 9.1, 8.0, H-4'), 3.50 (ddd, 9.1, 5.3, 2.8, H-5'), 4.35 (dd, 11.9, 2.8, H-6'), 4.31 (dd, 11.9, 5.3, H-6''), 7.47 (d, 8.7, H-2'', 6''), 6.81 (d, 8.7, H-3'', 5''), 7.66 (d, 15.9, H-7''), 6.35 (d, 15.9, H-8''), 2.00 (AcO-6'); ¹³C-NMR (75.5 MHz, CD₃OD): 94.5 (C-1), 152.9 (C-3), 110.8 (C-4), 40.9 (C-5), 142.6 (C-6), 129.3 (C-7), 98.0 (C-8), 51.0 (C-9), 152.1 (C-10), 134.7 (C-11), 171.8 (C-12), 66.0 (C-13), 19.6 (C-14), 168.1 (C-15), 52.0 (OMe), 100.4 (C-1'), 74.6 (C-2'), 77.7 (C-3'), 71.7 (C-4'), 75.9 (C-5'), 64.6 (C-6'), 20.8, 172.6 (Ac), 128.9 (C-1''), 131.3 (C-2'', 6''), 116.9 (C-3'', 5''), 161.4 (C-4''), 147.3 (C-7''), 114.8 (C-8''), 168.4 (C-9''). *Plumeria obtusa* (Apocynaceae).¹⁷⁵

320. 6'-O-Acetylplumeride-p-Z-coumarate



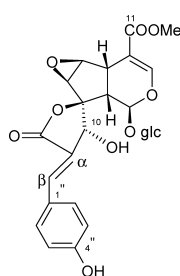
$C_{32}H_{34}O_{15}$; 658.1897; rods; mp 196—197 °C; UV (MeOH): 193 (3.59), 207 (3.87), 311 (3.67); IR (CHCl₃): 3450 br, 1750—1670, 1640—1560; ¹H-NMR (300 MHz, CD₃OD): 5.07 (d, 6.0, H-1), 7.52 (s, H-3), 3.94 (ddd, 7.4, 2.3, 2.2, H-5), 6.47 (dd, 5.9, 2.3, H-6), 5.50 (dd, 5.9, 2.2, H-7), 2.88 (dd, 7.4, 5.7, H-9), 7.48 (d, 0.7, H-10), 5.64 (dd, 6.5, 0.7, H-13), 1.53 (d, 6.5, H₂-14), 3.78 (MeO-15), 4.66 (d, H-1'), 3.12 (m, H-11), 2.83 (dd, 12.0, 4.0, H_B-13), 2.75 (dd, 12.0, 6.0, H_B-13), 3.00 (t, 8.0, H-2'), 3.16—3.25 (m, H-3', 4', 5'), 3.72 (dd, 11.6, 2.0, H-6'), 3.47 (dd, 11.6, 6.4, H-6'), 7.01 (d, 8.4, H-2'', 6''), 6.65 (d, 8.4, H-3'', 5''), 9.25 (brs, HO-4''), 3.65 (s, MeO-15); ¹³C-NMR (100 MHz, DMSO-*d*₆): 93.3 (C-1), 151.7 (C-3), 107.9 (C-4), 39.0 (C-5), 139.6 (C-6), 129.2 (C-7), 96.7 (C-8), 47.0 (C-9), 69.5 (C-10), 47.6 (C-11), 173.9 (C-12), 30.6 (C-13), 166.4 (C-15), 99.1 (C-1'), 72.9 (C-2'), 76.3 (C-3'), 70.0 (C-4'), 76.9 (C-5'), 60.8 (C-6'), 127.5 (C-1''), 131.0 (C-2'', 6''), 115.0 (C-3'', 5''), 155.9 (C-4''), 51.3 (OMe). *Dunnia sinensis* (Rubiaceae).¹⁷⁶

321. Dunnisinoides



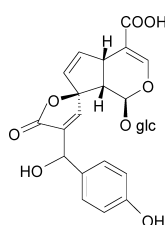
$C_{26}H_{30}O_{13}$; 550.1686; colorless prism; mp 221—223 °C; $[\alpha]_D^{25} +28.4^\circ$ ($c=0.25$, MeOH); UV (MeOH): 206 (4.82), 228 (4.19), 279 (3.17); IR (KBr): 3406, 1774, 1712, 1637, 1614, 1516, 1433, 1286, 1209, 1114, 1076, 1027, 977, 927, 837; ¹H-NMR (400 MHz, DMSO-*d*₆): 5.13 (d, 6.5, H-1), 7.43 (d, 1.2, H-3), 3.66 (m, H-5), 6.23 (dd, 5.6, 2.4, H-6), 6.07 (dd, 5.6, 2.4, H-7), 2.47 (t, 8.4, H-9), 4.58 (d, 8.0, H-10, 1'), 3.12 (m, H-11), 2.83 (dd, 12.0, 4.0, H_B-13), 2.75 (dd, 12.0, 6.0, H_B-13), 3.00 (t, 8.0, H-2'), 3.16—3.25 (m, H-3', 4', 5'), 3.72 (dd, 11.6, 2.0, H-6'), 3.47 (dd, 11.6, 6.4, H-6'), 7.01 (d, 8.4, H-2'', 6''), 6.65 (d, 8.4, H-3'', 5''), 9.25 (brs, HO-4''), 3.65 (s, MeO-15); ¹³C-NMR (100 MHz, DMSO-*d*₆): 93.3 (C-1), 151.7 (C-3), 107.9 (C-4), 39.0 (C-5), 139.6 (C-6), 129.2 (C-7), 96.7 (C-8), 47.0 (C-9), 69.5 (C-10), 47.6 (C-11), 173.9 (C-12), 30.6 (C-13), 166.4 (C-15), 99.1 (C-1'), 72.9 (C-2'), 76.3 (C-3'), 70.0 (C-4'), 76.9 (C-5'), 60.8 (C-6'), 127.5 (C-1''), 131.0 (C-2'', 6''), 115.0 (C-3'', 5''), 155.9 (C-4''), 51.3 (OMe). *Dunnia sinensis* (Rubiaceae).¹⁷⁶

322. Citrifolinoside A



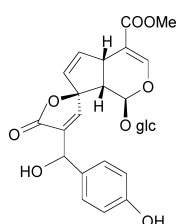
$C_{26}H_{26}O_{14}$; 564.1478; amorphous solid; $[\alpha]_D^{24} +65.2^\circ$ ($c=0.25$, MeOH); UV (MeOH): 201 (3.75), 233 (4.03), 327 (4.14); IR (KBr): 3410, 1750, 1710, 1640, 1600, 1515, 1435, 1276, 1100—1000, 817; ¹H-NMR (600 MHz, CD₃OD): 5.35 (brs, H-1), 7.43 (d, 2.0, H-3), 3.39 (dd, 8.8, 2.0, H-5), 4.04 (d, 2.5, H-6), 3.83 (d, 2.5, H-7), 2.44 (d, 8.8, H-9), 5.12 (s, H-10), 3.73 (s, MeO-11), 4.41 (d, 8.0, H-1'), 3.09 (m, H-2'), 3.26 (m, H-3', 4'), 3.21 (m, H-5'), 3.62 (m, H-6'), 3.80 (m, H-6'), 7.58 (s, H-β), 7.62 (d, 8.4, H-2'', 6''), 6.84 (d, 8.4, H-3'', 5''); ¹³C-NMR (150 MHz, CD₃OD): 92.6 (C-1), 153.3 (C-3), 108.1 (C-4), 33.3 (C-5), 58.2 (C-6, 7), 92.8 (C-8), 45.2 (C-9), 69.1 (C-10), 168.1 (C-11), 51.9 (MeO-11), 99.3 (C-1'), 74.4 (C-2'), 78.1 (C-3'), 71.2 (C-4'), 77.6 (C-5'), 62.3 (C-6'), 172.9 (C=O), 124.0 (C-α), 144.0 (C-β), 126.3 (C-1''), 134.8 (C-2''), 117.0 (C-3'', 5''), 162.2 (C-4''). *Morinda citrifolia* (Rubiaceae).¹⁷⁷

323. Gaertneric acid



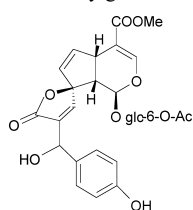
$C_{25}H_{26}O_{13}$; 534.1373; yellowish powder; $[\alpha]_D^{25} +48.8^\circ$ ($c=0.21$, MeOH); UV (MeOH): 234, 288; ¹H-NMR (400 MHz, CD₃OD): 5.04 (d, 4.9, H-1), 7.49 (d, 1.0, H-3), 3.90 (m, H-5), 6.56 (dd, 5.6, 2.4, H-6), 5.47 (dd, 5.6, 2.1, H-7), 2.83 (dd, 7.5, 4.9, H-9), 7.25 (brs, H-10), 5.35 (brs, H-13), 4.67 (d, 7.9, H-1'), 3.20—3.40 (m, H-2', 3', 4', 5'), 3.77 (dd, 12.1, 2.0, H-6'), 3.69 (dd, 12.1, 4.3, H-6''), 6.78 (d, 8.5, H-2'', 6''), 7.28 (d, 8.5, H-3'', 5''); ¹³C-NMR (100 MHz, CD₃OD): 94.0 (C-1), 148.1 (C-3), 116.3 (C-4), 51.3 (C-5), 143.4 (C-6), 128.7 (C-7), 98.7 (C-8), 41.8 (C-9), 151.1 (C-10), 137.4 (C-11), 172.8 (C-12), 69.9 (C-13), 180.6 (C-15), 100.5 (C-1'), 74.6 (C-2'), 77.9 (C-3'), 71.0 (C-4'), 78.3 (C-5'), 62.3 (C-6'), 133.4 (C-1''), 116.3 (C-2'', 6''), 129.7 (C-3'', 5''), 158.6 (C-4''). *Morinda morindoides* syn. *Gaertner morindoides* (Rubiaceae).¹⁷⁸

324. Gaertneroside



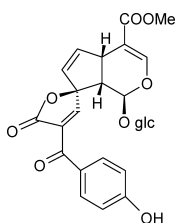
$C_{26}H_{28}O_{13}$; 548.1529; white powder; $[\alpha]_D^{25} +24.8^\circ$ ($c=0.75$, MeOH); UV (MeOH): 238, 298, 316; ¹H-NMR (400 MHz, CD₃OD): 5.14 (d, 4.9, H-1), 7.51 (d, 1.6, H-3), 3.90 (m, H-5), 6.46 (dd, 5.6, 2.5, H-6), 5.56 (dd, 5.6, 2.2, H-7), 2.90 (dd, 7.6, 4.9, H-9), 7.45 (d, 1.3, H-10), 5.36 (d, 1.3, H-13), 3.75 (s, MeO-15), 4.67 (d, 7.9, H-1'), 3.21 (m, H-2'), 3.38 (m, H-3', 4'), 3.25 (m, H-5'), 3.79 (dd, 12.2, 2.2, H-6'), 3.68 (dd, 12.2, 4.9, H-6''), 6.78 (d, 8.6, H-2'', 6''), 7.28 (d, 8.6, H-3'', 5''); ¹³C-NMR (100 MHz, CD₃OD): 94.5 (C-1), 152.6 (C-3), 110.9 (C-4), 40.4 (C-5), 141.6 (C-6), 130.0 (C-7), 98.1 (C-8), 50.8 (C-9), 150.2 (C-10), 137.9 (C-11), 172.4 (C-12), 69.9 (C-13), 168.5 (C-15), 52.0 (OMe), 100.6 (C-1'), 74.5 (C-2'), 77.9 (C-3'), 70.9 (C-4'), 78.4 (C-5'), 62.2 (C-6'), 133.3 (C-1''), 116.3 (C-2'', 6''), 129.7 (C-3'', 5''), 158.6 (C-4''). *Morinda morindoides* syn. *Gaertner morindoides* (Rubiaceae).¹⁷⁸

325. Acetylgaertneroside



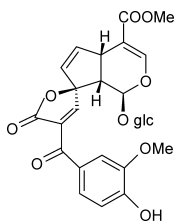
$C_{28}H_{30}O_{14}$; 590.1635; $[\alpha]_D^{25} +23.4^\circ$ ($c=0.28$, MeOH); UV (MeOH): 234, 292, 314; ¹H-NMR (400 MHz, CD₃OD): 4.99 (d, 4.3, H-1), 7.52 (d, 1.5, H-3), 3.88 (m, H-5), 6.48 (dd, 5.6, 2.5, H-6), 5.59 (dd, 5.6, 2.0, H-7), 2.93 (dd, 7.6, 4.3, H-9), 7.35 (d, 1.3, H-10), 5.36 (d, 1.1, H-13), 3.76 (s, MeO-15), 4.63 (d, 8.0, H-1'), 3.18 (dd, 9.1, 8.0, H-2'), 3.39 (m, H-3'), 3.30 (m, H-4'), 3.47 (m, H-5'), 4.24 (m, H₂-6'), 1.87 (s, AcO-6'), 6.80 (d, 8.6, H-2'', 6''), 7.28 (d, 8.6, H-3'', 5''); ¹³C-NMR (100 MHz, CD₃OD): 94.4 (C-1), 152.5 (C-3), 111.1 (C-4), 39.9 (C-5), 141.4 (C-6), 130.1 (C-7), 98.0 (C-8), 51.0 (C-9), 150.1 (C-10), 138.3 (C-11), 172.5 (C-12), 69.8 (C-13), 168.4 (C-15), 52.0 (OMe), 100.6 (C-1'), 74.3 (C-2'), 77.7 (C-3'), 71.5 (C-4'), 75.7 (C-5'), 64.7 (C-6'), 20.7, 173.0 (AcO-6'), 133.4 (C-1''), 116.4 (C-2'', 6''), 129.6 (C-3'', 5''), 158.6 (C-4''). *Morinda morindoides* (Rubiaceae).¹⁷⁸

326. Dehydrogaertneroside



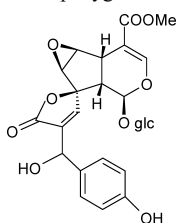
$C_{26}H_{26}O_{13}$: 546.1373; yellowish powder; $[\alpha]_D^{25} -19.5^\circ$ ($c=0.31$, MeOH); UV (MeOH): 232, 291; 1H -NMR (400 MHz, CD_3OD): 5.40 (d, 5.5, H-1), 7.50 (br s, H-3), 3.98 (m, H-5), 6.54 (dd, 5.6, 2.5, H-6), 5.69 (dd, 5.6, 2.1, H-7), 3.05 (m, H-9), 7.85 (br s, H-10), 3.74 (s, MeO-15), 4.68 (d, 7.9, H-1'), 3.15 (m, H-2'), 3.32 (m, H-3'), 3.30 (m, H-4'), 3.25 (m, H-5'), 3.79 (dd, 12.2, 2.2, H-6'), 3.68 (dd, 12.2, 4.9, H-6''); ^{13}C -NMR (100 MHz, CD_3OD): 94.3 (C-1), 152.7 (C-3), 110.9 (C-4), 40.9 (C-5), 142.7 (C-6), 129.0 (C-7), 97.8 (C-8), 51.5 (C-9), 159.3 (C-10), 131.7 (C-11), 170.0 (C-12), 188.3 (C-13), 168.4 (C-15), 52.0 (OMe), 100.2 (C-1'), 74.6 (C-2'), 77.9 (C-3'), 71.7 (C-4'), 78.7 (C-5'), 62.9 (C-6'), — (C-1''), 116.4 (C-2''), 133.6 (C-3''), 165.5 (C-4''). *Morinda morindoides* (Rubiaceae).¹⁷⁸⁾

327. Methoxygaertneroside



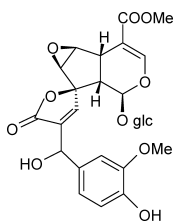
$C_{27}H_{30}O_{14}$: 578.1635; white powder; $[\alpha]_D^{25} +27.0^\circ$ ($c=0.58$, MeOH); UV (MeOH): 222, 280; 1H -NMR (400 MHz, CD_3OD): 5.13 (d, 3.7, H-1), 7.50 (d, 1.5, H-3), 3.88 (m, H-5), 6.47 (dd, 5.6, 2.6, H-6), 5.56 (dd, 5.6, 1.9, H-7), 2.97 (dd, 7.9, 3.7, H-9), 7.33 (br s, H-10), 5.37 (d, 2.1, H-13), 3.78 (s, MeO-15), 4.51 (d, 7.9, H-1'), 3.11 (dd, 8.0, 7.9, H-2'), 3.30 (m, H-3'), 3.25 (m, H-5'), 3.65–3.70 (m, H-6'), 7.01 (d, 1.9, H-2''), 6.79 (d, 8.1, H-5''), 6.90 (dd, 8.1, 1.9, H-6''), 3.89 (s, MeO-3''); ^{13}C -NMR (100 MHz, CD_3OD): 93.8 (C-1), 152.1 (C-3), 111.4 (C-4), 39.7 (C-5), 140.9 (C-6), 130.2 (C-7), 97.9 (C-8), 50.8 (C-9), 149.8 (C-10), 138.2 (C-11), 172.4 (C-12), 70.0 (C-13), 168.4 (C-15), 51.9 (MeO-15), 100.1 (C-1'), 74.4 (C-2'), 77.9 (C-3'), 70.8 (C-4'), 78.3 (C-5'), 62.1 (C-6'), 133.9 (C-1''), 111.7 (C-2''), 149.1 (C-3''), 147.6 (C-4''), 116.1 (C-5''), 121.2 (C-6''), 56.5 (MeO-3''). *Morinda morindoides* (Rubiaceae).¹⁷⁸⁾

328. Epoxygaertneroside



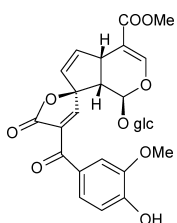
$C_{27}H_{28}O_{14}$: 564.1478; white powder; $[\alpha]_D^{25} +1.0^\circ$ ($c=0.1$, MeOH); UV (MeOH): 224, 286; 1H -NMR (400 MHz, CD_3OD): 5.05 (br s, H-1), 7.60 (br s, H-3), 3.45 (br d, 8.3, H-5), 3.42 (br d, 2.5, H-6), 4.05 (br d, 2.5, H-7), 2.74 (br d, 8.3, H-9), 7.15 (d, 1.4, H-10), 5.37 (d, 1.4, H-13), 3.78 (s, MeO-15), 4.51 (d, 7.9, H-1'), 3.11 (dd, 8.0, 7.9, H-2'), 3.30 (m, H-3'), 3.35 (m, H-4'), 3.21 (m, H-6'), 3.70 (m, H-6'), 6.76 (d, 8.5, H-2''), 7.23 (d, 8.5, H-3''), 5.9''); ^{13}C -NMR (100 MHz, CD_3OD): 92.5 (C-1), 153.9 (C-3), 108.0 (C-4), 32.9 (C-5), 58.9 (C-6), 57.9 (C-7), 92.7 (C-8), 43.9 (C-9), 146.9 (C-10), 140.7 (C-11), 171.6 (C-12), 70.0 (C-13), 168.0 (C-15), 52.0 (MeO-15), 99.6 (C-1'), 74.3 (C-2'), 77.8 (C-3'), 70.8 (C-4'), 78.1 (C-5'), 61.8 (C-6'), 133.0 (C-1''), 116.2 (C-2''), 129.6 (C-3''), 158.6 (C-4''); *Morinda morindoides* (Rubiaceae).¹⁷⁸⁾

329. Epoxymethoxygaertneroside



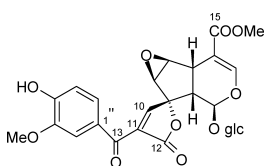
$C_{27}H_{30}O_{15}$: 594.1584; 1H -NMR (400 MHz, CD_3OD): 5.04 (br s, H-1), 7.61 (br s, H-3), 3.45 (br d, 8.3, H-5), 3.42 (d, 2.5, H-6), 4.05 (d, 2.5, H-7), 2.74 (br d, 8.3, H-9), 7.19 (d, 1.3, H-10), 5.37 (d, 1.4, H-13), 3.78 (s, MeO-15), 4.45 (d, 7.9, H-1'), 3.11 (dd, 7.9, 8.0, H-2'), 3.30 (m, H-3'), 3.35 (m, H-4'), 3.21 (m, H-5'), 3.70 (m, H-6'), 6.97 (d, 1.9, H-2''), 6.76 (d, 8.1, H-5''), 6.88 (dd, 8.1, 1.9, H-6''); ^{13}C -NMR (100 MHz, CD_3OD): 92.3 (C-1), 153.2 (C-3), 108.1 (C-4), 32.9 (C-5), 58.9 (C-6), 57.9 (C-7), 92.7 (C-8), 43.9 (C-9), 146.7 (C-10), 140.8 (C-11), 171.6 (C-12), 70.2 (C-13), 167.9 (C-15), 52.0 (MeO-15), 99.5 (C-1'), 74.3 (C-2'), 77.8 (C-3'), 70.7 (C-4'), 78.1 (C-5'), 61.7 (C-6'), 133.6 (C-1''), 111.3 (C-2''), 149.1 (C-3''), 147.7 (C-4''), 45.8 (C-5''), 121.4 (C-6''), 56.4 (MeO-3''). *Morinda morindoides* (Rubiaceae).¹⁷⁸⁾

330. Dehydromethoxygaertneroside



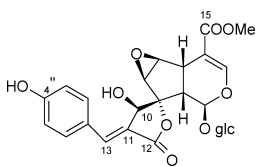
$C_{27}H_{28}O_{14}$: 576.1478; yellowish powder; $[\alpha]_D^{25} -15.0^\circ$ ($c=0.2$, MeOH); UV (MeOH): 284; 1H -NMR (400 MHz, CD_3OD): 5.48 (d, 4.9, H-1), 7.50 (br s, H-3), 3.98 (m, H-5), 6.54 (dd, 5.6, 2.5, H-6), 5.67 (dd, 5.6, 2.1, H-7), 3.05 (m, H-9), 7.85 (br s, H-10), 3.74 (s, MeO-15), 4.65 (d, 7.9, H-1'), 3.15 (m, H-2'), 3.32 (m, H-3'), 3.30 (m, H-4'), 3.25 (m, H-5'), 3.79 (dd, 12.2, 2.2, H-6'), 3.68 (dd, 12.2, 4.9, H-6'), 7.50 (m, H-2''), 6.88 (d, 8.4, H-5''), 3.92 (s, MeO-3''); ^{13}C -NMR (100 MHz, CD_3OD): 94.1 (C-1), 152.5 (C-3), 111.1 (C-4), 40.6 (C-5), 142.4 (C-6), 129.1 (C-7), 97.8 (C-8), 51.4 (C-9), 159.0 (C-10), 131.6 (C-11), 170.0 (C-12), 188.1 (C-13), 168.3 (C-15), 52.0 (MeO-15), 100.0 (C-1'), 74.6 (C-2'), 77.8 (C-3'), 71.7 (C-4'), 78.7 (C-5'), 62.9 (C-6'), 128.7 (C-1''), 112.6 (C-2''), 149.8 (C-3''), 155.5 (C-4''), 116.9 (C-5''), 127.3 (C-6''), 56.5 (MeO-3''). *Morinda morindoides* (Rubiaceae).¹⁷⁸⁾

331. Yopaaside A



$C_{27}H_{28}O_{15}$: 592.1428; yellow amorphous powder; $[\alpha]_D^{19} -19.3^\circ$ ($c=2.1$, MeOH); 1H -NMR (400 MHz, CD_3OD): 5.60 (br s, H-1), 7.51 (d, 1.5, H-3), 3.46 (br d, 8.3, H-5), 4.02 (d, 2.5, H-6), 3.50 (d, 2.5, H-7), 2.85 (dd, 8.3, 1.2, H-9), 7.56 (s, H-10), 3.70 (s, MeO-15), 4.51 (d, 7.8, H-1'), 3.11 (dd, 8.8, 7.8, H-2'), 3.30 (dd, 9.5, 8.8, H-3'), 3.19 (dd, 9.5, 8.6, H-4'), 3.26 (m, H-5'), 3.83 (dd, 12.0, 2.0, H-6'), 3.57 (dd, 12.0, 6.1, H-6''), 7.42 (d, 2.0, H-2''), 6.84 (d, 8.3, H-5''), 7.45 (dd, 8.3, 2.0, H-6''), 3.88 (s, MeO-3''); ^{13}C -NMR (100 MHz, CD_3OD): 92.7 (C-1), 153.6 (C-3), 108.5 (C-4), 33.1 (C-5), 58.0 (C-6), 59.2 (C-7), 92.7 (C-8), 44.2 (C-9), 156.2 (C-10), 133.9 (C-11), 169.3 (C-12), 187.7 (C-13), 167.8 (C-15), 52.1 (MeO-15), 99.6 (C-1'), 74.4 (C-2'), 77.8 (C-3'), 71.5 (C-4'), 78.5 (C-5'), 62.7 (C-6'), 129.1 (C-1''), 113.0 (C-2''), 149.2 (C-3''), 154.8 (C-4''), 116.2 (C-5''), 126.8 (C-6''), 56.5 (MeO-3''). *Morinda coreia* (Rubiaceae).¹¹³⁾

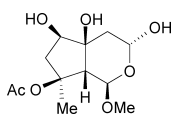
332. Yopaaside B



$C_{26}H_{28}O_{14}$: 564.1478; yellow amorphous powder; $[\alpha]_D^{19} -66.1^\circ$ ($c=1.6$, MeOH); 1H -NMR (400 MHz, CD_3OD): 5.35 (br s, H-1), 7.43 (d, 1.7, H-3), 3.37 (dd, 8.5, 1.7, H-5), 4.04 (d, 2.4, H-6), 3.83 (d, 2.4, H-7), 2.45 (d, 8.5, H-9), 5.13 (d, 1.0, H-10), 7.57 (d, 1.0, H-13), 3.71 (s, MeO-15), 4.42 (d, 7.8, H-1'), 3.05 (dd, 9.3, 7.8, H-2'), 3.23 (H-3', 4'), 3.16 (m, H-5'), 3.74 (dd, 12.2, 2.2, H-6'), 3.58 (dd, 12.2, 5.4, H-6''), 7.61 (d, 8.8, H-2''), 6.84 (d, 8.8, H-3''), 5.9''); ^{13}C -NMR (100 MHz, CD_3OD): 92.8 (C-1), 153.3 (C-3), 108.0 (C-4), 33.2 (C-5), 58.1 (C-6), 58.2 (C-7), 92.6 (C-8), 45.1 (C-9), 69.1 (C-10), 123.9 (C-11), 172.7 (C-12), 144.0 (C-13), 168.0 (C-15), 52.0 (MeO-15), 99.3 (C-1'), 74.3 (C-2'), 77.6 (C-3'), 71.4 (C-4'), 77.9 (C-5'), 62.3 (C-6'), 126.2 (C-1''), 134.8 (C-2''), 117.0 (C-3''), 162.1 (C-4''). *Morinda coreia* (Rubiaceae).¹¹³⁾

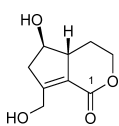
Group-4 (iridoid aglycones)

333. Clandonensine



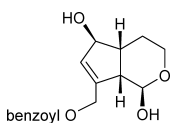
$C_{12}H_{20}O_7$; 276.1209; white amorphous powder; UV 203; 1H -NMR (D_2O): 5.38 (s, H-1), 5.30 (dd, 9.9, 2.3, H-3), 1.40 (dd, 14.0, 10.0, $H_{\alpha-4}$), 1.85 (d, 13.9, $H_{\beta-4}$), 3.69 (d, 4.5, H-6), 2.17 (dd, 16.2, 4.5, $H_{\alpha-7}$), 2.26 (d, 16.2, $H_{\beta-7}$), 2.35 (s, H-9), 1.49 (s, H_3 -10), 2.01 (s, AcO), 3.41 (s, OMe); ^{13}C -NMR (D_2O): 103.0 (C-1), 89.2 (C-3), 40.4 (C-4), 82.4 (C-5), 77.1 (C-6), 47.5 (C-7), 89.9 (C-8), 55.8 (C-9), 24.2 (C-10), 24.4, 176.3 (Ac), 57.5 (OMe). *Caryopteris clandonensis* (Lamiaceae/Verbenaceae).³⁰

334. Viteoid II



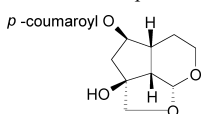
$C_9H_{12}O_4$; 184.0735; may be artifact; colorless oil; $[\alpha]_D^{28} - 68.1^\circ$ ($c=0.4$, MeOH); 1H -NMR (500 MHz, CD_3OD): 4.43 (ddd, 11.6, 4.9, 2.4, $H_{\alpha-3}$), 4.31 (ddd, 11.6, 11.6, 3.1, $H_{\beta-3}$), 1.65 (dddd, 13.4, 11.6, 11.6, 4.9, $H_{\alpha-4}$), 2.23 (dddd, 13.4, 4.8, 3.1, 2.4, $H_{\beta-4}$), 2.86 (m, H-5), 4.09 (ddd, 7.6, 7.3, 7.3, H-6), 2.95 (m, H-7), 2.49 (m, H-7), 4.54 (ddd, 16.5, 2.4, 1.2, H-10), 4.64 (ddd, 16.5, 2.4, 1.2, H-10); ^{13}C -NMR (125 MHz, CD_3OD): 165.9 (C-1), 70.9 (C-3), 29.1 (C-4), 51.1 (C-5), 79.2 (C-6), 42.2 (C-7), 161.7 (C-8), 123.6 (C-9), 60.4 (C-10). *Vitex rotundifolia* (Verbenaceae).¹⁷⁹

335. 10-O-Benzoylglobularigenin



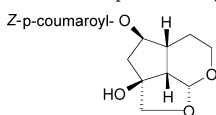
$C_{16}H_{18}O_5$; 290.1154; amorphous powder; $[\alpha]_D^{20} - 41.0^\circ$ ($c=0.1$, MeOH); UV (MeOH): 207 sh, 229, 275; IR (KBr): 3346, 1722, 1457; 1H -NMR (300 MHz, CD_3OD): 4.43 (d, 7.9, H-1), 3.63 (m, $H_{\alpha-3}$), 3.93 (m, $H_{\beta-3}$), 1.83 (m, $H_{\alpha-4}$), 1.76 (m, $H_{\beta-4}$), 2.37 (m, H-5), 4.69 (br d, 7.9, H-6), 5.86 (br s, H-7), 2.58 (t, 7.5, H-9), 5.01 and 4.91 (each d, 14.8, H_2 -10), 8.06 (dd, 7.4, 1.3, H-2', 6'), 7.50 (t, 7.4, H-3', 5'), 7.63 (m, H-4'); ^{13}C -NMR (75.5 MHz, CD_3OD): 100.0 (C-1), 63.0 (C-3), 25.0 (C-4), 48.3 (C-5), 78.2 (C-6), 132.5 (C-7), 144.0 (C-8), 50.9 (C-9), 64.2 (C-10), 131.3 (C-1'), 130.6 (C-2', 6'), 129.7 (C-3', 5'), 134.4 (C-4'), 167.2 (C-7'). *Globularia dumulosa* (Globulariaceae).³⁷

336. 6-O-trans-p-Coumaroyl-7-deoxyrehmaglutin A



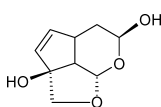
$C_{18}H_{20}O_6$; 332.1260; amorphous powder; $[\alpha]_D^{26} - 17.7^\circ$ ($c=0.2$, MeOH); UV (MeOH): 210 (3.93), 227 (3.94), 313 (4.25); 1H -NMR (400 MHz, CD_3OD): 5.28 (d, 5.4, H-1), 3.95 (m, H-3 α), 3.54 (ddd, 11.7, 5.1, 2.0, H-3 β), 1.54 (br dd, 14.1, 2.5, H-4 α), 1.81 (m, H-4 β), 2.53 (m, H-5), 5.23 (ddd, 10.3, 10.3, 6.1, H-6), 2.46 (dd, 12.0, 6.1, H-7 α), 2.01 (ddd, 12.0, 10.3, 2.0, H-7 β), 2.30 (dd, 10.2, 5.4, H-9), 3.95 (d, 9.8, H-10 α), 3.63 (dd, 9.8, 2.0, H-10 β), 7.46 (d, 8.5, H-2', 6'), 6.80 (d, 8.5, H-3', 5'), 7.62 (d, 16.1, H-7'), 6.32 (d, 16.1, H-8'); ^{13}C -NMR (100 MHz, CD_3OD): 100.6 (C-1), 57.1 (C-3), 22.9 (C-4), 39.4 (C-5), 74.5 (C-6), 46.3 (C-7), 84.4 (C-8), 47.7 (C-9), 78.5 (C-10), 127.1 (C-1'), 131.3 (C-2', 6'), 116.9 (C-3', 5'), 161.6 (C-4'), 146.9 (C-7'), 114.9 (C-8'), 169.2 (C-9'). *Catalpa ovata* (Bignoniaceae).¹⁸⁰

337. 6-O-cis-p-Coumaroyl-7-deoxyrehmaglutin A

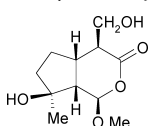


$C_{18}H_{20}O_6$; 332.1260; amorphous powder; $[\alpha]_D^{26} - 15.4^\circ$ ($c=0.2$, MeOH); UV (MeOH): 209 (3.95), 225 (3.95), 310 (4.06); 1H -NMR (400 MHz, CD_3OD): 5.26 (d, 5.6, H-1), 3.94 (m, H-3 α), 3.54 (ddd, 11.7, 5.4, 1.7, H-3 β), 1.48 (br dd, 14.4, 1.7, H-4 α), 1.76 (m, H-4 β), 2.43 (m, H-5), 5.15 (ddd, 10.5, 10.5, 6.1, H-6), 2.43 (m, H-7 α), 1.94 (ddd, 12.0, 10.5, 2.0, H-7 β), 2.25 (dd, 10.2, 5.6, H-9), 3.94 (d, 9.8, H-10 α), 3.63 (dd, 9.8, 2.0, H-10 β), 7.59 (d, 8.6, H-2', 6'), 6.75 (d, 8.6, H-3', 5'), 6.88 (d, 12.7, H-7'), 5.77 (d, 12.7, H-8'); ^{13}C -NMR (100 MHz, CD_3OD): 101.6 (C-1), 57.0 (C-3), 22.8 (C-4), 39.2 (C-5), 74.3 (C-6), 46.2 (C-7), 84.3 (C-8), 47.5 (C-9), 78.5 (C-10), 127.7 (C-1'), 133.6 (C-2', 6'), 115.9 (C-3', 5'), 160.3 (C-4'), 145.2 (C-7'), 116.7 (C-8'), 168.3 (C-9'). *Catalpa ovata* (Bignoniaceae).¹⁸⁰

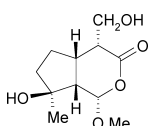
338. Artselaenin C



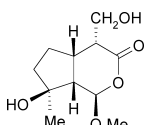
$C_9H_{12}O_4$; 184.0735; amorphous powder; $[\alpha]_D^{25} + 128.2^\circ$ ($c=0.12$, $CHCl_3$); UV ($CHCl_3$): 241; IR (KBr): 1725, 1598, 1493, 1373, 1082, 1031; 1H -NMR (400 MHz, $DMSO-d_6$): 5.40 (d, 6.6, H-1), 4.82 (dd, 9.2, 2.6, H-3), 1.73 (ddd, 13.5, 2.8, 2.6, $H_{\alpha-4}$), 1.53 (ddd, 13.5, 9.2, 6.8, $H_{\beta-4}$), 3.21 (m, H-5), 5.60 (dd, 6.4, 2.6, H-6), 5.73 (dd, 6.4, 2.0, H-7), 2.21 (dd, 8.4, 6.6, H-9), 3.67, 3.44 (each d, 9.0, H_2 -10); ^{13}C -NMR (100 MHz, $DMSO-d_6$): 87.6 (C-1), 101.1 (C-3), 32.0 (C-4), 46.1 (C-5), 137.6 (C-6), 135.0 (C-7), 91.9 (C-8), 39.7 (C-9), 72.4 (C-10). *Pedicularis artselaeri* (Scrophulariaceae).³⁸

339. 1 β -Methoxymussaenin A

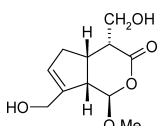
$C_{11}H_{18}O_5$; 230.1154; white amorphous powder; $[\alpha]_D^{25} + 33.5^\circ$ ($c=0.35$, $CHCl_3$); IR (KBr): 3368, 1735; 1H -NMR (400 MHz, $CDCl_3$): 5.07 (d, 8.8, H-1), 2.00 (ddd, 11.4, 8.5, 5.7, H-4), 3.10 (m, H-5), 1.75 (m, $H_{\alpha-6}$), 1.97 (m, $H_{\beta-6}$), 1.70 (m, $H_{\alpha-7}$), 1.97 (m, $H_{\beta-7}$), 2.69 (dd, 10.8, 8.8, H-9), 1.23 (s, H_2 -10), 3.24 (dd, 11.4, 8.5, $H_{\alpha-11}$), 3.85 (dd, 11.4, 5.7, $H_{\beta-11}$), 3.70 (s, MeO-1); ^{13}C -NMR (100 MHz, $CDCl_3$): 92.7 (C-1), 173.0 (C-3), 49.3 (C-4), 38.3 (C-5), 23.2 (C-6), 37.9 (C-7), 80.1 (C-8), 48.2 (C-9), 24.1 (C-10), 63.7 (C-11), 51.7 (OMe). *Cymbaria mongolica* (Scrophulariaceae).¹⁸¹

340. 1 α -Methoxy-4-*epi*-mussaenin A

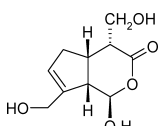
$C_{11}H_{18}O_5$; 230.1154; colorless gum; $[\alpha]_D^{25} + 23.7^\circ$ ($c=0.25$, $CHCl_3$); IR (KBr): 3399, 1733; 1H -NMR (400 MHz, $CDCl_3$): 5.16 (d, 3.0, H-1), 2.10 (ddd, 7.5, 5.7, 3.0, H-4), 3.09 (m, H-5), 1.60 (m, $H_{\alpha-6}$), 2.14 (m, $H_{\beta-6}$), 1.79 (m, $H_{\alpha-7}$), 1.83 (m, $H_{\beta-7}$), 2.63 (dd, 10.1, 3.0, H-9), 1.28 (s, H_2 -10), 3.48 (dd, 12.0, 7.5, $H_{\alpha-11}$), 4.06 (dd, 12.0, 5.7, $H_{\beta-11}$), 3.75 (s, MeO-1); ^{13}C -NMR (100 MHz, $CDCl_3$): 91.7 (C-1), 172.9 (C-3), 46.5 (C-4), 34.8 (C-5), 27.1 (C-6), 38.9 (C-7), 80.1 (C-8), 46.8 (C-9), 25.0 (C-10), 61.4 (C-11), 51.9 (OMe-1). *Cymbaria mongolica* (Scrophulariaceae).¹⁸¹

341. 1 β -Methoxy-4-*epi*-mussaenin A

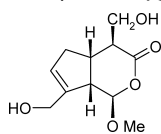
$C_{11}H_{18}O_5$; 230.1154; colorless gum; $[\alpha]_D^{25} + 23.9^\circ$ ($c=0.45$, $CHCl_3$); IR (KBr): 3399, 1733; 1H -NMR (400 MHz, $CDCl_3$): 5.00 (d, 7.2, H-1), 2.06 (ddd, 7.2, 5.8, 2.2, H-4), 2.61 (m, H-5), 1.61 (m, $H_{\alpha-6}$), 1.98 (m, $H_{\beta-6}$), 1.75 (m, $H_{\alpha-7}$), 1.80 (m, $H_{\beta-7}$), 2.39 (dd, 8.0, 7.2, H-9), 1.35 (s, H_2 -10), 3.73 (dd, 12.1, 7.2, $H_{\alpha-11}$), 3.95 (dd, 12.1, 5.8, $H_{\beta-11}$), 3.72 (s, MeO-1); ^{13}C -NMR (100 MHz, $CDCl_3$): 94.6 (C-1), 173.6 (C-3), 47.7 (C-4), 38.3 (C-5), 27.3 (C-6), 40.2 (C-7), 79.7 (C-8), 49.9 (C-9), 25.5 (C-10), 61.0 (C-11), 51.0 (MeO-1). *Cymbaria mongolica* (Scrophulariaceae).¹⁸¹

342. 1 β -Methoxy-4-*epi*-gardendiol

$C_{11}H_{16}O_5$; 228.0998; colorless gum; $[\alpha]_D^{25} + 27.8^\circ$ ($c=0.20$, $CHCl_3$); IR (KBr): 3390, 1732; 1H -NMR (400 MHz, $CDCl_3$): 4.81 (d, 8.3, H-1), 2.33 (ddd, 5.8, 5.2, 4.0, H-4), 2.59 (m, H-5), 2.01 (m, $H_{\alpha-6}$), 2.70 (m, $H_{\beta-6}$), 5.70 (s, H-7), 2.36 (t, 8.3, H-9), 4.20 (s, H_2 -10), 3.49 (dd, 12.0, 5.2, $H_{\alpha-11}$), 3.95 (dd, 12.0, 5.8, $H_{\beta-11}$), 3.71 (s, MeO-1); ^{13}C -NMR (100 MHz, $CDCl_3$): 95.2 (C-1), 173.9 (C-3), 43.6 (C-4), 39.6 (C-5), 35.9 (C-6), 128.4 (C-7), 143.1 (C-8), 50.9 (C-9), 60.1 (C-10), 63.6 (C-11), 51.9 (MeO-1). *Cymbaria mongolica* (Scrophulariaceae).¹⁸¹

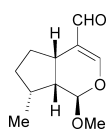
343. 1 β -Hydroxy-4-*epi*-gardendiol

$C_{10}H_{14}O_5$; 214.0841; colorless gum; $[\alpha]_D^{25} + 32.0^\circ$ ($c=0.30$, $CHCl_3$); IR (KBr): 3390, 1733; 1H -NMR (400 MHz, $CDCl_3$): 4.19 (d, 8.7, H-1), 2.37 (ddd, 5.9, 5.6, 5.2, H-4), 2.80 (m, H-5), 2.18 (m, $H_{\alpha-6}$), 2.22 (m, $H_{\beta-6}$), 5.73 (s, H-7), 2.38 (dd, 8.7, 8.3, H-9), 4.25 (s, H_2 -10), 3.46 (dd, 12.0, 5.9, $H_{\alpha-11}$), 4.00 (dd, 12.0, 5.2, $H_{\beta-11}$); ^{13}C -NMR (100 MHz, $CDCl_3$): 92.9 (C-1), 173.7 (C-3), 39.5 (C-4), 38.3 (C-5), 29.7 (C-6), 127.2 (C-7), 143.2 (C-8), 50.9 (C-9), 60.3 (C-10), 63.7 (C-11). *Cymbaria mongolica* (Scrophulariaceae).¹⁸¹

344. 1 β -Methoxygardendiol

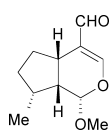
$C_{11}H_{16}O_5$; 228.0998; colorless gum; $[\alpha]_D^{25} -8.5^\circ$ ($c=0.10$, $CHCl_3$); IR (KBr): 3393, 1730, 1060; 1H -NMR (400 MHz, $CDCl_3$): 4.46 (d, 8.3, H-1), 2.99 (ddd, 11.6, 4.8, 4.7, H-4), 2.91 (m, H-5), 2.19 (m, $H_{\alpha-6}$), 2.27 (m, $H_{\beta-6}$), 5.81 (s, H-7), 2.41 (dd, 8.4, 8.3, H-9), 4.23 (s, H_2 -10), 3.71 (dd, 12.0, 4.7, H_3 -11), 4.10 (dd, 12.0, 4.8, H_5 -11), 3.68 (s, MeO-1); ^{13}C -NMR (100 MHz, $CDCl_3$): 98.7 (C-1), 172.4 (C-3), 40.9 (C-4), 40.5 (C-5), 30.9 (C-6), 128.7 (C-7), 144.8 (C-8), 50.7 (C-9), 61.4 (C-10), 62.3 (C-11), 51.6 (MeO-1). *Cymbaria mongolica* (Scrophulariaceae).¹⁸¹

345. Artselaenin A



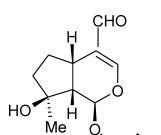
$C_{11}H_{16}O_3$; 196.1099; amorphous powder; $[\alpha]_D^{25} +40.0^\circ$ ($c=0.10$, $CHCl_3$); UV ($CHCl_3$): 243; IR (KBr): 2928, 2854, 1728, 1633, 1460, 1286, 1181, 1129; 1H -NMR (400 MHz, $CDCl_3$): 5.10 (d, 3.6, H-1), 7.14 (s, H-3), 2.74 (m, H-5), 2.17–2.35 (m, H_2 -6, 7), 1.96 (m, H-8), 2.08 (dd, 7.3, 3.6, H-9), 1.08 (d, 6.8, H_3 -10), 9.30 (s, H-11), 3.54 (s, MeO-1); ^{13}C -NMR (100 MHz, $CDCl_3$): 102.5 (C-1), 161.2 (C-3), 125.0 (C-4), 36.1 (C-5), 30.4 (C-6), 42.2 (C-7), 32.0 (C-8), 42.9 (C-9), 16.3 (C-10), 190.5 (C-11), 56.4 (OMe). *Pedicularis artselaeni* (Scrophulariaceae).³⁸

346. Artselaenin B



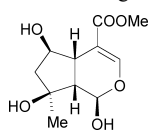
$C_{11}H_{16}O_3$; 196.1099; amorphous powder; $[\alpha]_D^{25} +65.0^\circ$ ($c=0.10$, $CHCl_3$); UV ($CHCl_3$): 242; IR (KBr): 2923, 2825, 1722, 1631, 1460, 1285, 1168, 1075; 1H -NMR (400 MHz, $CDCl_3$): 4.82 (d, 6.1, H-1), 7.18 (s, H-3), 2.92 (m, H-5), 2.11–2.29 (m, H_2 -6, 7), 1.92 (m, H-8), 1.47 (m, H-9), 1.04 (d, 6.8, H_3 -10), 9.24 (s, H-11), 3.54 (s, MeO-1); ^{13}C -NMR (100 MHz, $CDCl_3$): 102.5 (C-1), 160.2 (C-3), 125.3 (C-4), 36.4 (C-5), 30.9 (C-6), 32.4 (C-7), 32.2 (C-8), 42.9 (C-9), 14.9 (C-10), 191.0 (C-11), 56.3 (MeO). *Pedicularis artselaeni* (Scrophulariaceae).³⁸

347. Kansuening

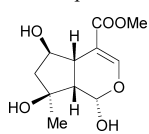


$C_{14}H_{22}O_4$; 254.1518; colorless needles; $[\alpha]_D^{23} -62^\circ$ ($c=0.23$, MeOH); 1H -NMR (400 MHz, $CDCl_3$): 4.95 (d, 4.4, H-1), 7.15 (s, H-3), 3.55 (m, H-5), 1.72 (m, H-6), 2.34 (m, H-6), 1.58 (m, H-7), 2.21 (m, H-9), 3.20 (m, H-9), 1.34 (s, H_3 -10), 9.25 (s, H-11), 3.87 (m, H_2 -1'), 1.45 (m, H_2 -2'), 1.38 (m, H_2 -3'), 0.93 (t, 7.2, H_3 -4'); ^{13}C -NMR (100 MHz, $CDCl_3$): 100.2 (C-1), 160.7 (C-3), 124.1 (C-4), 29.7 (C-5), 28.8 (C-6), 40.5 (C-7), 79.9 (C-8), 51.3 (C-9), 24.8 (C-10), 190.4 (C-11), 69.3 (C-1'), 31.5 (C-2'), 19.2 (C-3'), 13.8 (C-4'). *Pedicularis kansuensis* f. *albiflora* (Scrophulariaceae).^{55,76}

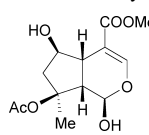
348. Shanzhigenin methyl ester



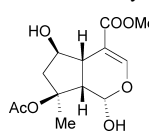
$C_{11}H_{16}O_6$; 244.0947; isolated as a mixture with C-1-epimer; colorless needles; mp 153–155 °C (C_6H_6 - Me_2CO); $[\alpha]_D^{20} +4.1^\circ$ ($c=0.67$, MeOH); UV (MeOH): 249 (4.01); IR (KBr): 3435, 3352, 1674, 1636; 1H -NMR (400 MHz, CD_3OD): 5.42 (d, 2.5, H-1), 7.42 (s, H-3), 3.07 (m, H-5), 4.22 (m, H-6), 1.67 (br d, 14.0, H-7), 2.29 (dd, 14.0, 9.0, H-7), 2.14 (dd, 5.8, 2.5, H-9), 1.31 (s, H_3 -10), 3.72 (s, MeO); ^{13}C -NMR (100 MHz, CD_3OD): 92.4 (C-1), 153.0 (C-3), 110.0 (C-4), 43.3 (C-5), 80.3 (C-6), 49.2 (C-7), 81.0 (C-8), 51.9 (C-9), 25.0 (C-10), 170.2 (C-11), 53.2 (OMe). *Phlomis umbrosa* (Lamiaceae).¹⁸²

349. 1-*epi*-Shanzhigenin methyl ester

$C_{11}H_{16}O_6$; 244.0947; isolated as a mixture with shanzhigenin methyl ester; mp, $[\alpha]_D$, UV and IR same as that of shanzhigenin methyl ester; 1H -NMR (400 MHz, CD_3OD): 5.18 (d, 6.1, H-1), 7.42 (s, H-3), 3.03 (m, H-5), 3.99 (ddd, 9.2, 6.0, 3.1, H-6), 1.79 (dd, 13.2, 5.0, $H_{\alpha-7}$), 2.00 (dd, 13.2, 6.9, $H_{\beta-7}$), 2.37 (dd, 9.1, 6.1, H-9), 1.36 (s, H_3 -10), 3.74 (s, MeO); ^{13}C -NMR (100 MHz, CD_3OD): 94.2 (C-1), 153.8 (C-3), 110.0 (C-4), 42.6 (C-5), 78.2 (C-6), 48.7 (C-7), 79.5 (C-8), 51.9 (C-9), 24.0 (C-10), 170.2 (C-11), 53.0 (OMe). *Phlomis umbrosa* (Lamiaceae).¹⁸²

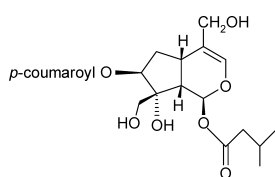
350. 8-*O*-Acetylshanzhigenin methyl ester

$C_{13}H_{18}O_7$; 286.1052; isolated as a mixture with C-1-epimer; colorless needles; mp 69–71 °C (C_6H_6 - Me_2CO); $[\alpha]_D +3.6^\circ$ ($c=0.25$, Me_2CO); UV ($CHCl_3$): 258 (3.76); IR (KBr): 3479, 3333, 1732, 1682, 1638; 1H -NMR (400 MHz, $CDCl_3$): 5.51 (d, 3.0, H-1), 7.38 (s, H-3), 2.90 (dd, 8.2, 6.0, H-5), 4.27 (ddd, 6.6, 6.3, 6.2, H-6), 2.20 (dd, 15.2, 3.2, $H_{\alpha-7}$), 2.32 (dd, 15.2, 9.1, $H_{\beta-7}$), 2.86 (dd, 8.2, 3.1, H-9), 1.64 (s, H_3 -10), 3.73 (s, MeO), 1.99 (s, Ac); ^{13}C -NMR (100 MHz, $CDCl_3$): 90.4 (C-1), 151.3 (C-3), 108.7 (C-4), 42.2 (C-5), 77.8 (C-6), 46.8 (C-7), 90.7 (C-8), 48.0 (C-9), 19.3 (C-10), 169.7 (C-11), 51.6 (MeO), 171.1, 22.5 (Ac). *Phlomis umbrosa* (Lamiaceae).¹⁸²

351. 8-*O*-Acetyl-1-*epi*-shanzhigenin methyl ester

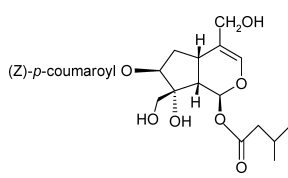
$C_{13}H_{18}O_7$; 286.1052; isolated as a mixture with 8-acetylshanzhigenin methyl ester; mp, $[\alpha]_D$, UV and IR same as 8-acetylshanzhigenin methyl ester; 1H -NMR (400 MHz, $CDCl_3$): 5.12 (d, 6.0, H-1), 7.43 (s, H-3), 2.95 (dd, 9.0, 6.4, H-5), 3.98 (ddd, 8.4, 6.1, 3.2, H-6), 2.17 (dd, 13.3, 6.1, $H_{\alpha-7}$), 2.34 (dd, 13.3, 6.6, $H_{\beta-7}$), 2.77 (dd, 9.0, 6.0, H-9), 1.55 (s, H_3 -10), 3.73 (s, MeO), 2.01 (s, Ac); ^{13}C -NMR (100 MHz, $CDCl_3$): 93.3 (C-1), 152.8 (C-3), 108.3 (C-4), 41.7 (C-5), 76.3 (C-6), 46.2 (C-7), 87.2 (C-8), 49.4 (C-9), 21.5 (C-10), 169.2 (C-11), 51.6 (MeO), 171.1, 22.2 (Ac). *Phlomis umbrosa* (Lamiaceae).¹⁸²

352. Luzonoid A



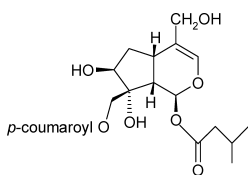
$C_{24}H_{30}O_9$; 462.1889; yellow oil; $[\alpha]_D^{21} +41.0^\circ$ ($c=0.64$, MeOH); UV (EtOH): 229 (4.04), 300 (4.26), 316 (4.35); IR (film): 3429, 1734, 1694, 1587, 1516; 1H -NMR (CD_3OD): 6.18 (d, 4.9, H-1), 6.34 (s, H-3), 3.02 (ddd, 8.2, 8.2, 9.8, H-5), 2.12 (ddd, 4.1, 8.2, 11.0, H-6), 2.15 (ddd, 4.1, 8.2, 11.0, H-6), 5.09 (dd, 4.1, 4.1, H-7), 2.43 (dd, 4.9, 9.8, H-9), 3.68 (d, 11.3, H-10), 3.76 (d, 11.3, H-10), 3.94 (d, 12.4, H-11), 4.09 (d, 12.4, H-11), 2.22 (d, 7.1, H_2 -2'), 2.09 (tq, 6.9, 7.1, H-3'), 0.97 (d, 6.9, H_3 -4', 5'), 6.34 (d, 15.8, H-8''), 7.61 (d, 15.8, H-7''), 7.46 (d, 8.5, H-2'', 6''), 6.80 (d, 8.5, H-3'', 5''); ^{13}C -NMR (150 MHz, CD_3OD): 91.6 (C-1), 138.9 (C-3), 119.0 (C-4), 32.5 (C-5), 36.0 (C-6), 81.3 (C-7), 83.5 (C-8), 45.3 (C-9), 65.8 (C-10), 62.1 (C-11), 173.1 (C-1'), 44.2 (C-2'), 26.7 (C-3'), 22.7 (C-4', 5'), 168.6 (C-9''), 115.1 (C-8''), 146.8 (C-7''), 127.1 (C-1''), 131.2 (C-2'', 6''), 116.8 (C-3'', 5''), 161.3 (C-4''). *Viburnum luzonicum* (Caprifoliaceae).¹⁶⁴

353. Luzonoid B



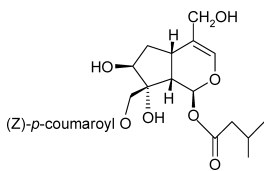
$C_{24}H_{30}O_9$; 462.1889; yellow oil; $[\alpha]_D^{21} -53.7^\circ$ ($c=2.11$, MeOH); UV (EtOH): 230 (3.99), 300 (4.15), 314 (4.22); IR (film): 3443, 1736, 1697, 1590, 1514; 1H -NMR (600 MHz, CD_3OD): 6.14 (d, 4.7, H-1), 6.31 (s, H-3), 2.92 (ddd, 8.2, 8.2, 9.9, H-5), 2.09 (ddd, 4.0, 8.2, 11.3, H-6), 2.11 (ddd, 4.0, 8.2, 11.3, H-6), 5.02 (dd, 4.0, 4.0, H-7), 2.26 (dd, 4.7, 9.9, H-9), 2.22 (d, 7.1, H_2 -2'), 2.09 (tq, 7.1, 6.6, H-3'), 0.96 (d, 6.6, H_3 -4', 5'), 5.78 (d, 12.6, H-8''), 6.90 (d, 12.6, H-7''), 7.58 (d, 8.7, H-2'', 6''), 6.75 (d, 8.7, H-3'', 5''); ^{13}C -NMR (125 MHz, CD_3OD): 91.5 (C-1), 138.7 (C-3), 119.1 (C-4), 32.4 (C-5), 35.9 (C-6), 81.1 (C-7), 83.5 (C-8), 45.3 (C-9), 65.7 (C-10), 62.2 (C-11), 173.1 (C-1'), 44.2 (C-2'), 26.7 (C-3'), 22.7 (C-4', 5'), 167.5 (C-9''), 117.1 (C-8''), 145.5 (C-7''), 127.8 (C-1''), 133.4 (C-2'', 6''), 115.9 (C-3'', 5''), 160.0 (C-4''). *Viburnum luzonicum* (Caprifoliaceae).¹⁶⁴

354. Luzonoid C



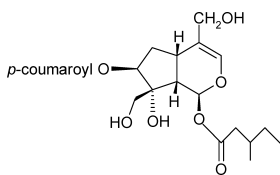
$C_{24}H_{30}O_9$; 462.1889; yellow oil; $[\alpha]_D^{21} -54.1^\circ$ ($c=0.35$, MeOH); UV (EtOH): 228 (3.81), 300 (4.03), 314 (4.10); IR (film): 3379, 1739, 1691, 1587, 1515; 1H -NMR (600 MHz, CD_3OD): 6.31 (d, 4.4, H-1), 6.30 (s, H-3), 3.05 (ddd, 10.2, 8.4, 8.4, H-5), 2.01 (ddd, 10.3, 8.4, 4.0, H-6), 2.03 (ddd, 10.3, 8.4, 4.0, H-6), 4.02 (dd, 4.0, 4.0, H-7), 2.44 (dd, 10.2, 4.4, H-9), 4.38 (s, H_2 -10), 3.93 (d, 12.6, H-11), 4.08 (d, 12.6, H-11), 2.21 (m, H_2 -2'), 2.07 (tq, 7.4, 6.9, H-3'), 0.93 (d, 6.9, H_3 -4', 5'), 6.38 (d, 16.1, H-8''), 7.68 (d, 16.1, H-7''), 7.48 (d, 8.5, H-2'', 6''), 6.80 (d, 8.5, H-3'', 5''); ^{13}C -NMR (150 MHz, CD_3OD): 91.8 (C-1), 138.4 (C-3), 119.7 (C-4), 32.1 (C-5), 38.4 (C-6), 79.1 (C-7), 83.0 (C-8), 45.8 (C-9), 69.1 (C-10), 62.3 (C-11), 173.2 (C-1'), 44.3 (C-2'), 26.9 (C-3'), 22.7 (C-4', 5'), 169.5 (C-9''), 115.1 (C-8''), 146.8 (C-7''), 127.2 (C-1''), 131.2 (C-2'', 6''), 116.8 (C-3'', 5''), 161.4 (C-4''). *Viburnum luzonicum* (Caprifoliaceae).¹⁶⁴

355. Luzonoid D



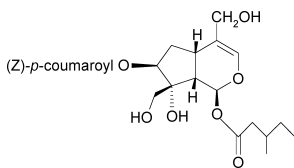
$C_{24}H_{30}O_9$; 462.1889; yellow oil; $[\alpha]_D^{21} -43.3^\circ$ ($c=1.03$, MeOH); UV (EtOH): 225 (4.04), 300 (4.03), 313 (4.09); IR (film): 3409, 1733, 1696, 1586, 1513; 1H -NMR (600 MHz, CD_3OD): 6.20 (d, 4.4, H-1), 6.29 (s, H-3), 3.02 (ddd, 10.2, 8.4, 8.4, H-5), 1.98 (ddd, 11.5, 8.4, 3.8, H-6), 2.02 (ddd, 11.5, 8.4, 3.8, H-6), 3.97 (dd, 3.8, 3.8, H-7), 2.38 (dd, 10.2, 4.4, H-9), 4.31 (d, 11.5, H-10), 4.35 (d, 11.5, H-10), 3.92 (d, 12.5, H-11), 4.06 (d, 12.5, H-11), 2.20 (m, H_2 -2'), 2.07 (tq, 7.7, 6.9, H-3'), 0.94 (d, 6.9, H_3 -4', 5'), 5.86 (d, 12.8, H-8''), 6.87 (d, 12.8, H-7''), 7.67 (d, 8.8, H-2'', 6''), 6.74 (d, 8.8, H-3'', 5''); ^{13}C -NMR (150 MHz, CD_3OD): 91.8 (C-1), 138.4 (C-3), 119.8 (C-4), 32.3 (C-5), 38.4 (C-6), 78.9 (C-7), 83.0 (C-8), 45.7 (C-9), 68.5 (C-10), 62.3 (C-11), 173.1 (C-1'), 44.3 (C-2'), 26.8 (C-3'), 22.7 (C-4', 5'), 168.4 (C-9''), 116.5 (C-8''), 145.4 (C-7''), 127.6 (C-1''), 133.8 (C-2'', 6''), 115.8 (C-3'', 5''), 160.2 (C-4''). *Viburnum luzonicum* (Caprifoliaceae).¹⁶⁴

356. Luzonoid E



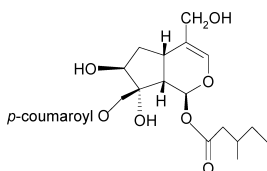
$C_{25}H_{32}O_9$; 476.2046; yellow oil; $[\alpha]_D^{21} +54.1^\circ$ ($c=0.21$, MeOH); UV (EtOH): 229 (4.03), 300 (4.23), 315 (4.31); IR (film): 3422, 1732, 1687, 1587, 1515; 1H -NMR (600 MHz, CD_3OD): 6.17 (d, 4.9, H-1), 6.34 (s, H-3), 3.02 (ddd, 9.9, 8.1, 8.1, H-5), 2.12 (ddd, 11.5, 8.1, 4.1, H-6), 2.15 (ddd, 11.5, 8.1, 4.1, H-6), 5.08 (dd, 4.1, 4.1, H-7), 2.43 (dd, 9.9, 4.9, H-9), 3.68 (d, 11.5, H-10), 3.75 (d, 11.5, H-10), 3.94 (d, 12.5, H-11), 4.09 (d, 12.5, H-11), 2.14 (dd, 14.8, 8.2, H-2'), 1.87 (m, H-3'), 1.25 (ddq, 14.8, 7.4, 7.4, H-4'), 1.40 (ddq, 14.8, 7.6, 7.4, H-4'), 0.91 (dd, 7.4, 7.4, H-5'), 0.95 (d, 6.6, H_3 -6'), 6.34 (d, 15.8, H-8''), 7.61 (d, 15.8, H-7''), 7.47 (d, 8.7, H-2'', 6''), 6.80 (d, 8.7, H-3'', 5''); ^{13}C -NMR (150 MHz, CD_3OD): 91.6 (C-1), 139.0 (C-3), 119.1 (C-4), 32.6 (C-5), 36.0 (C-6), 81.3 (C-7), 83.6 (C-8), 45.4 (C-9), 65.9 (C-10), 62.1 (C-11), 173.3 (C-1'), 42.3 (C-2'), 33.1 (C-3'), 30.3 (C-4'), 11.6 (C-5'), 19.6 (C-6'), 168.6 (C-9''), 115.2 (C-8''), 146.8 (C-7''), 127.1 (C-1''), 131.3 (C-2'', 6''), 116.8 (C-3'', 5''), 161.4 (C-4''). *Viburnum luzonicum* (Caprifoliaceae).¹⁶⁴

357. Luzonoid F



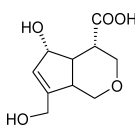
$C_{25}H_{32}O_9$; 476.2046; colourless oil; $[\alpha]_D^{21} -32.1^\circ$ ($c=2.10$, MeOH); UV (EtOH): 225 (4.26), 300 (4.26), 315 (4.33); IR (film): 3428, 1734, 1688, 1590, 1514; 1H -NMR (600 MHz, CD_3OD): 6.14 (d, 4.7, H-1), 6.31 (s, H-3), 2.92 (ddd, 9.9, 8.5, 8.5, H-5), 2.09 (ddd, 11.0, 8.5, 4.0, H-6), 2.11 (ddd, 11.0, 8.5, 4.0, H-6), 5.02 (dd, 4.0, 4.0, H-7), 2.26 (dd, 10.0, 4.7, H-9), 3.57 (d, 11.5, H-10), 3.61 (d, 11.5, H-10), 3.93 (d, 12.4, H-11), 4.08 (d, 12.4, H-11), 2.14 (dd, 15.1, 8.1, H-2'), 2.35 (dd, 15.1, 6.0, H-2'), 1.86 (m, H-3'), 1.24 (ddq, 14.8, 7.4, 7.4, H-4'), 1.39 (ddq, 14.8, 7.6, 7.4, H-4'), 0.91 (dd, 7.4, 7.4, H_3 -5'), 0.94 (d, 6.6, H_3 -6'), 5.78 (d, 12.6, H-8''), 6.91 (d, 12.6, H-7''), 7.58 (d, 8.7, H-2'', 6''), 6.75 (d, 8.7, H-3'', 5''); ^{13}C -NMR (150 MHz, CD_3OD): 91.5 (C-1), 138.7 (C-3), 119.2 (C-4), 32.4 (C-5), 35.9 (C-6), 81.2 (C-7), 83.5 (C-8), 45.4 (C-9), 65.7 (C-10), 62.2 (C-11), 173.3 (C-1'), 42.2 (C-2'), 33.1 (C-3'), 30.3 (C-4'), 11.6 (C-5'), 19.6 (C-6'), 127.8 (C-1''), 133.4 (C-2'', 6''), 115.9 (C-3'', 5''), 160.0 (C-4''), 167.5 (C-9''), 117.1 (C-8''), 145.5 (C-7''). *Viburnum luzonicum* (Caprifoliaceae).¹⁶⁴

358. Luzonoid G



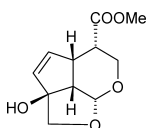
$C_{25}H_{32}O_9$; 476.2046; colourless oil; $[\alpha]_D^{21} -36.1^\circ$ ($c=0.80$, MeOH); UV (EtOH): 226 (3.87), 300 (4.04), 314 (4.11); IR (film): 3380, 1738, 1689, 1588, 1515; 1H -NMR (600 MHz, CD_3OD): 6.31 (d, 4.4, H-1), 6.30 (s, H-3), 3.04 (ddd, 9.9, 8.8, 8.8, H-5), 2.01 (ddd, 11.9, 8.8, 4.0, H-6), 2.03 (ddd, 11.9, 8.8, 4.0, H-6), 4.02 (dd, 4.0, 4.0, H-7), 2.44 (dd, 9.9, 4.1, H-9), 4.36 (d, 11.5, H-10), 4.38 (d, 11.5, H-10), 3.93 (d, 12.5, H-11), 4.08 (d, 12.5, H-11), 2.13 (dd, 14.9, 8.2, H-2'), 1.87 (m, H-3'), 1.20 (ddq, 14.1, 7.4, 6.0, H-4'), 1.35 (ddq, 14.1, 7.4, 6.0, H-4'), 0.86 (dd, 7.4, 7.4, H_3 -5'), 0.91 (d, 6.9, H_3 -6'), 6.39 (d, 15.8, H-8''), 7.68 (d, 15.8, H-7''), 7.48 (d, 8.5, H-2'', 6''), 6.80 (d, 8.5, H-3'', 5''); ^{13}C -NMR (150 MHz, CD_3OD): 91.8 (C-1), 138.5 (C-3), 119.7 (C-4), 32.1 (C-5), 38.4 (C-6), 79.1 (C-7), 83.0 (C-8), 45.8 (C-9), 69.2 (C-10), 62.3 (C-11), 173.4 (C-1'), 42.4 (C-2'), 33.2 (C-3'), 30.3 (C-4'), 11.6 (C-5'), 19.5 (C-6'), 169.5 (C-9''), 115.1 (C-8''), 146.8 (C-7''), 127.2 (C-1''), 131.2 (C-2'', 6''), 116.8 (C-3'', 5''), 161.3 (C-4''). *Viburnum luzonicum* (Caprifoliaceae).¹⁶⁴

359. Macedonine



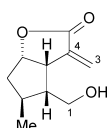
$C_{10}H_{14}O_5$; 214.0841; amorphous powder; 1H -NMR (250 MHz, D_2O): 3.88 (dd, 11.3, 4.2, H_a -1), 3.98 (dd, 11.3, 4.2, H_b -1), 3.77 (m, H_2 -3), 3.16 (m, 7.8, H-4), 3.29 (td, 7.4, 4.3, H-5), 5.53 (dd, 7.4, 1.7, H-6), 5.94 (d, 1.7, H-7), 3.00 (q, 4.1, H-9), 4.27 (ABq, 15.4, H_2 -10), ^{13}C -NMR (62.5 MHz, D_2O): 61.5 (C-1), 61.9 (C-3), 45.1 (C-4), 48.3 (C-5), 91.5 (C-6), 126.4 (C-7), 155.3 (C-8), 50.7 (C-9), 64.5 (C-10), 185.0 (C-11). *Galium macedonicum* (Rubiaceae).¹⁸³

360. Dunnisinin

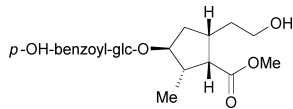


$C_{11}H_{14}O_5$; 226.0841; colorless needles; mp 178—179 °C; $[\alpha]_D^{25} +213.5^\circ$ ($c=0.20$, MeOH); IR (KBr): 3446, 1734, 1607, 1416, 1284, 1200, 1105; 1H -NMR (400 MHz, $CDCl_3$): 5.38 (d, 7.2, H-1), 3.77 (ddd, 11.6, 4.0, 1.2, H_{β} -3), 3.69 (t, 11.6, H_{α} -3), 2.90 (ddd, 11.6, 6.0, 4.0, H-4), 3.65 (m, H-5), 5.80 (dd, 5.6, 2.4, H-6), 5.70 (dd, 5.6, 1.6, H-7), 2.44 (dd, 8.0, 7.2, H-9), 3.55 (d, 9.2, H_{β} -10), 3.88 (d, 9.2, H_{α} -10), 3.70 (s, OMe); ^{13}C -NMR (100 MHz, $CDCl_3$): 99.8 (C-1), 56.3 (C-3), 40.8 (C-4), 42.0 (C-5), 136.4 (C-6), 135.7 (C-7), 92.5 (C-8), 45.7 (C-9), 70.6 (C-10), 172.2 (C-11), 51.8 (OMe). *Dunnia sinensis* (Rubiaceae).¹⁷⁶

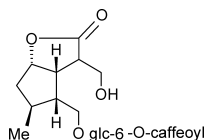
361. GSIR-1



$C_{10}H_{16}O_3$; 184.1099; amorphous; UV (MeOH): 215.5; IR ($CHCl_3$): 1750; 1H -NMR (500 MHz, $CDCl_3$): 3.58 (dd, 10.6, 10.0, H-1), 3.82 (dd, 10.6, 4.2, H-1), 6.43 and 5.93 (each br d, 2.2, H_2 -3), 3.70 (m, H-5), 4.96 (dd, 5.8, 5.5, H-6), 2.24 (dd, 14.0, 5.8, H-7), 1.47 (ddd, 14.0, 12.5, 5.5, H-7), 1.65 (m, H-8), 1.87 (m, H-9), 1.03 (d, 6.4, H_3 -10); ^{13}C -NMR (125 MHz, $CDCl_3$): 60.8 (C-1), 125.7 (C-3), 135.0 (C-4), 45.4 (C-5), 81.9 (C-6), 41.9 (C-7), 32.7 (C-8), 52.6 (C-9), 17.4 (C-10), 171.2 (C-11). *Gelsemium sempervirens* (Loganiaceae).¹⁸⁴

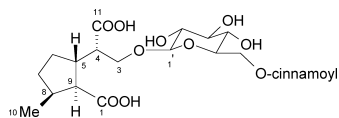
362. Ovatic acid methyl ester-7-*O*-(6'-*O*-*p*-hydroxybenzoyl)- β -D-glucopyranoside

$C_{23}H_{32}O_{11}$: 484.1944; may be artifact formed from its acid during extraction and isolation process; amorphous powder; $[\alpha]_D^{25}$ 0.0° ($c=0.3$, MeOH); UV (MeOH): 256 (3.86), 309 (3.12); 1H -NMR (400 MHz, CD_3OD): 3.43 (m, H_{2-3}), 1.31 (H_{a-4}), 1.46 (m, H_b-4), 2.36 (brdd, 10.0, 6.8, H-5), 1.88 (ddd, 13.7, 10.0, 9.0, $H_{\alpha-6}$), 1.97 (ddd, 13.7, 10.0, 3.4, $H_{\beta-6}$), 4.06 (m, H-7), 2.22 (br q, 6.8, H-8), 2.85 (brt, 6.8, H-9), 1.05 (d, 6.8, H_3-10), 4.32 (d, 7.8, H-1'), 3.19 (dd, 8.8, 7.8, H-2'), 3.35 (m, H-3', 4'), 3.59 (m, H-5'), 4.38 (dd, 11.7, 7.4, H_a-6'), 4.60 (dd, 11.7, 2.4, H_b-6'), 7.91 (d, 9.0, H-2'', 6''), 6.83 (d, 9.0, H-3'', 5''), 3.60 (s, OMe); ^{13}C -NMR (100 MHz, CD_3OD): 175.6 (C-1), 61.5 (C-3), 39.5 (C-4), 38.4 (C-5), 36.0 (C-6), 39.0 (C-7), 45.7 (C-8), 54.3 (C-9), 14.5 (C-10), 105.5 (C-1'), 75.4 (C-2'), 78.1 (C-3'), 72.3 (C-4'), 75.4 (C-5'), 65.1 (C-6'), 122.4 (C-1''), 133.0 (C-2'', 6''), 116.3 (C-3'', 5''), 163.6 (C-4''), 168.0 (C-7''), 51.4 (OMe). *Catalpa ovata* (Bignoniaceae).⁶²

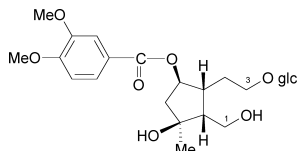
363. Gelsemiol-6'-*trans*-caffeoyl-1-glucoside

$C_{25}H_{32}O_{12}$: 524.1893; colorless needles (MeOH); mp 122–124 °C; $[\alpha]_D^{27}$ +3.4° ($c=0.23$, MeOH); UV (MeOH): 217 (4.44), 244 (3.5), 329 (4.8); IR (neat): 3600–3300, 1745, 1700, 1635, 1600, 1520, 1450; 1H -NMR (500 MHz, CD_3OD): 3.52 (dd, 10.0, 4.0, H-1), 4.05 (dd, 10.0, 4.0, H-1), 3.81 and 3.86 (each dd, 10.5, 4.0, H_{2-3}), 2.87 (dt, 8.0, 4.0, H-4), 3.14 (m, H-5), 4.91 (dd, 7.0, 6.0, H-6), 2.04 (dd, 14.0, 6.0, $H_{\alpha-7}$), 1.44 (ddd, 14.0, 12.0, 6.0, $H_{\beta-7}$), 1.76 (m, H-8), 1.91 (m, H-9), 0.96 (d, 6.5, H_3-10), 4.27 (d, 8.0, H-1'), 3.19 (t, 8.0, H-2'), 3.51 (dd, 9.5, 8.0, H-3'), 3.34 (t, 9.5, H-4'), 3.52 (ddd, 9.5, 6.0, 2.5, H-5'), 4.38 (dd, 12.0, 6.0, H_b-6'), 4.47 (dd, 12.0, 2.5, H_b-6'), 7.04 (d, H-2''), 6.77 (d, 8.0, H-5''), 6.94 (dd, 8.0, 2.0, H-6''), 7.57 (d, 16.0, H-7''), 6.28 (d, 16.0, H-8''); ^{13}C -NMR (125 MHz, CD_3OD): 69.4 (C-1), 63.1 (C-3), 45.6 (C-4), 45.5 (C-5), 85.4 (C-6), 42.7 (C-7), 34.1 (C-8), 50.3 (C-9), 17.6 (C-10), 181.7 (C-11), 104.6 (C-1'), 75.0 (C-2'), 78.0 (C-3'), 71.8 (C-4'), 75.5 (C-5'), 64.6 (C-6'), 127.7 (C-1''), 115.2 (C-2''), 146.9 (C-3''), 149.7 (C-4''), 116.5 (C-5''), 123.1 (C-6''), 147.3 (C-7''), 114.9 (C-8''), 169.1 (C-9''). *Verbena littoralis* (Verbenaceae).¹⁸⁵

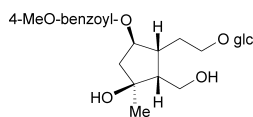
364. Syringafghanoside



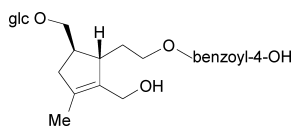
$C_{25}H_{32}O_{11}$: 508.1944; colorless amorphous powder; $[\alpha]_D^{28}$ -21.0° ($c=1.01$, MeOH); UV (MeOH): 216 (4.10), 222sh (4.03), 276 (4.17); IR (KBr): 3393, 1712, 1637, 1570, 1082; 1H -NMR (500 MHz, CD_3OD): 3.70 (dd, 10.0, 7.0, H-3), 4.12 (dd, 10.0, 4.0, H-3), 2.84 (m, H-4), 2.51 (m, H-5, 9), 1.53 (m, H-6), 1.85 (m, H-6), 1.14 (m, H-7), 1.93 (m, H-7), 2.25 (m, H-8), 1.02 (d, 7.0, H_3-10), 4.25 (d, 8.0, H-1'), 3.35 (t, 8.0, H-3'), 4.36 (dd, 12.0, 6.0, H-6'), 4.50 (dd, 12.0, 2.0, H-6'), 7.55–7.62 (m, H-2'', 6''), 7.35–7.44 (m, H-3'', 4'', 5''), 7.72 (d, 16.0, H-7''), 6.57 (d, 16.0, H-8''); ^{13}C -NMR (125 MHz, CD_3OD): 179.2 (C-1), 71.3 (C-3), 49.2 (C-4), 41.9 (C-5), 30.8 (C-6), 34.5 (C-7), 40.1 (C-8), 55.3 (C-9), 22.0 (C-10), 178.1 (C-11), 105.0 (C-1'), 74.9 (C-2'), 71.9 (C-3'), 77.8 (C-4'), 75.4 (C-5'), 64.9 (C-6'), 135.8 (C-1''), 129.3 (C-2'', 6''), 130.0 (C-3'', 5''), 131.6 (C-4''), 146.5 (C-7''), 118.8 (C-8''), 168.5 (C-9''). *Syringia afghanica* (Oleaceae).¹⁸⁶

365. 6-*O*-(3,4-Dimethoxybenzoyl) crescentin IV 3-*O*- β -D-glucopyranoside

$C_{24}H_{36}O_{12}$: 516.2206; amorphous powder; $[\alpha]_D^{23}$ -44.7° ($c=1.42$, MeOH); UV (MeOH): 203 (4.29), 218 (4.27), 260 (4.00), 290 (3.71); 1H -NMR (CD_3OD): 3.73 (overlapping, H_{2-3}), 3.66 (m, H-3), 3.97 (dt, 10.0, 6.5, H-3), 1.84 (m, H-4), 1.96 (m, H-4), 3.00 (quint, 7.5, H-5), 5.21 (ddd, 8.5, 7.5, 3.5, H-6), 1.75 (ddd, 14.5, 3.5, 1.5, H-7), 2.46 (dd, 14.5, 8.5, H-7), 2.10 (m, H-9), 1.36 (s, H_3-10), 4.23 (d, 8.0, H-1'), 3.16 (t, 8.0, H-2'), 3.32 (t, 8.0, H-3'), 3.24 (t, 8.0, H-4'), 3.16 (m, H-5'), 3.59 (dd, 12.0, 5.5, H-6'), 3.78 (dd, 12.0, 2.0, H-6'), 7.58 (d, 2.0, H-2''), 7.02 (d, 8.5, H-5''), 7.72 (dd, 8.5, 2.0, H-6''), 3.88 (s, MeO-3''), 3.89 (s, MeO-4''); ^{13}C -NMR (CD_3OD): 59.2 (C-1), 69.8 (C-3), 30.1 (C-4), 44.0 (C-5), 82.1 (C-6), 48.7 (C-7), 80.5 (C-8), 55.0 (C-9), 25.2 (C-10), 104.4 (C-1'), 75.1 (C-2'), 78.0 (C-3''), 71.6 (C-4''), 77.8 (C-5''), 62.7 (C-6''), 124.3 (C-1''), 113.7 (C-2''), 150.2 (C-3''), 154.8 (C-4''), 112.0 (C-5''), 125.1 (C-6''), 168.2 (C-7''), 56.5, 56.6 (2 \times MeO). *Tabebuia impetiginosa* (Bignoniaceae).⁶⁸

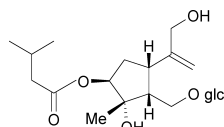
366. 6-*O*-(4-Methoxybenzoyl) crescentin IV (3-*O*- β -D-glucopyranoside)

$C_{23}H_{34}O_{11}$: 486.2101; amorphous powder; $[\alpha]_D^{22}$ -51.6° ($c=1.83$, MeOH); UV (MeOH): 204 (4.45), 256 (4.43); 1H -NMR (CD_3OD): 8.01 (d, 9.0, H-2'', 6''), 6.98 (d, 9.0, H-3'', 5''), 3.86 (s, MeO-4''), other signals were in good agreement with that of 6-*O*-(3,4-dimethoxybenzoyl) crescentin; ^{13}C -NMR (CD_3OD): 124.1 (C-1''), 132.7 (C-2'', 6''), 114.7 (C-3'', 5''), 165.1 (C-4''), 168.2 (C-7''), other signals were in very similar with that of 6-*O*-(3,4-dimethoxybenzoyl) crescentin. *Tabebuia impetiginosa* (Bignoniaceae).⁶⁸

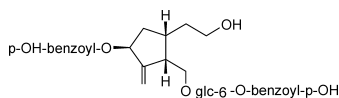
367. 3-*O*-(4-Hydroxybenzoyl)-10-deoxyeucommiol-6-*O*- β -D-glucopyranoside

$C_{22}H_{30}O_{10}$: 454.1839; amorphous powder; $[\alpha]_D^{24}$ -40.0° ($c=0.47$, MeOH); UV (MeOH): 202 (4.39), 256 (4.19); 1H -NMR (CD_3OD): 4.40 (br d, 12.5, H-1), 4.50 (br d, 12.5, H-1), 4.80 (ddd, 11.0, 8.5, 5.5, H-3), 4.60 (ddd, 11.0, 8.5, 7.0, H-3), 1.95 (m, H-4), 2.44 (m, H-4), 3.58 (brs, H-5), 4.71 (quint, 3.5, H-6), 2.62 (br d, 17.0, H-7), 2.73 (dd, 17.0, 6.5, H-7), 1.57 (brs, H_3-10), 4.93 (d, 8.0, H-1'), 3.97 (overlapping, H-2'', 5''), 4.24 (t, 8.0, H-3'), 4.20 (t, 8.0, H-4'), 4.35 (dd, 12.0, 5.5, H-6'), 4.55 (dd, 12.0, 2.0, H-6'), 8.20 (d, 8.5, H-2'', 6''), 7.15 (d, 8.5, H-3'', 5''); ^{13}C -NMR (C_3D_8N): 56.8 (C-1), 63.7 (C-3), 31.3 (C-4), 51.3 (C-5), 82.3 (C-6), 44.4 (C-7), 132.3 (C-8''), 136.8 (C-9''), 13.9 (C-10), 103.8 (C-1'), 75.1 (C-2'), 78.5 (C-3''), 71.8 (C-4''), 78.4 (C-5''), 63.1 (C-6'), 122.0 (C-1''), 132.4 (C-2'', 6''), 116.1 (C-3'', 5''), 163.4 (C-4''), 166.8 (C-7''). *Tabebuia impetiginosa* (Bignoniaceae).⁶⁸

368. Patrinoside



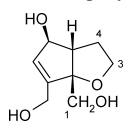
$C_{21}H_{36}O_{10}$: 448.2308; amorphous powder; $[\alpha]_D^{26}$ -4.8° ($c=0.5$, MeOH); IR (nujol): 3275, 2930, 1710; 1H -NMR (500 MHz, CD_3OD): 3.50 (dd, 10.0, 8.7, H-1), 4.02 (dd, 10.0, 4.1, H-1), 3.99 (br d, 14.7, H-3), 4.10 (br d, 14.7, H-3), 2.97 (br q, 9.0, H-5), 1.73 (ddd, 12.4, 9.0, 6.4, H-6), 2.11 (ddd, 12.4, 8.7, 3.7, H-6), 4.49 (dd, 6.4, 3.7, H-7), 2.57 (dt, 8.7, 4.1, H-9), 1.60 (s, H_3-10), 4.98 (brs, H-11), 5.27 (br d, 1.5, H-11), 4.12 (d, 7.5, H-1'), 3.12 (dd, 8.5, 7.5, H-2'), 3.33 (brt, 8.5, H-3'), 3.28 (m, H-5'), 3.65 (dd, 11.9, 5.5, H-6'), 3.85 (dd, 11.9, 2.3, H-6'), 2.15 (dd, 14.5, 7.0, H-2''), 2.18 (q, 14.5, H-2''), 2.07 (brddq, 14.5, 7.0, 6.4, H-3''), 0.96 (d, 6.4, H_3-4'' , 5''); ^{13}C -NMR (125 MHz, CD_3OD): 69.7 (C-1), 66.7 (C-3), 150.7 (C-4), 40.2 (C-5), 37.1 (C-6), 77.8 (C-7), 93.0 (C-8), 51.3 (C-9), 19.1 (C-10), 110.1 (C-11), 104.6 (C-1'), 75.2 (C-2'), 78.1 (C-3'), 76.6 (C-5'), 62.7 (C-6'), 174.3 (C-1''), 45.3 (C-2''), 26.9 (C-3''), 22.8 (C-4'', 5''), C-4' signal of sugar unit not reported. *Patrinia scabra* (Valerianaceae).¹⁸⁷

369. 7-*O*-*p*-Hydroxybenzoyl-1-*O*-(6'-*O*-*p*-hydroxybenzoyl)- β -D-glucopyranoside

$C_{29}H_{34}O_{12}$: 574.2050; amorphous powder; $[\alpha]_D^{25}$ +22.2° ($c=0.3$, MeOH); UV (MeOH): 204 (4.44), 256 (4.44), 309 (2.57); CD ($c=1.10 \times 10^{-4}$ M, MeOH), $\Delta\epsilon$: +1.81 (252.5), +2.86 (214.5); 1H -NMR (400 MHz, CD_3OD): 3.59 (m, H_a-1 , H_3-3 , H-5'), 3.91 (dd, 9.8, 5.1, H_b-1), 1.45 (m, H_a-4), 1.80 (m, H_b-4), 2.50 (br dt, 7.3, 6.8, H-5), 1.83 (m, $H_{\beta-6}$), 2.02 (ddd, 13.9, 8.5, 6.8, $H_{\alpha-6}$), 5.68 (m, H-7), 3.00 (m, H-9), 5.19 and 5.30 (each s, H_2-10), 4.30 (d, 7.8, H-1'), 3.22 (dd, 9.3, 7.8, H-2'), 3.31 (m, H-3', 4'), 4.43 (dd, 11.7, 6.6, H_a-6'),

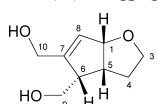
4.61 (dd, 11.7, 2.2, H_b-6'), 7.83, 7.90 (each 2H, d, 8.8, H-2'', 6'', 2''', 6'''), 6.80, 6.81 (each 2H, d, 8.8, H-3'', 5'', 3''', 5'''), ¹³C-NMR (100 MHz, CD₃OD): 71.4 (C-1), 61.8 (C-3), 33.3 (C-4), 37.3 (C-5), 38.2 (C-6), 77.2 (C-7), 153.4 (C-8), 47.1 (C-9), 113.9 (C-10), 104.8 (C-1'), 75.2 (C-2'), 78.1 (C-3'), 72.1 (C-4'), 75.5 (C-5'), 64.9 (C-6'), 122.3, 122.7 (C-1'', 1'''), 132.8, 132.9 (C-2'', 6'', 2''', 6'''), 116.2, 116.3 (C-3'', 5'', 3''', 5'''), 163.6, 163.7 (C-4'', 4'''), 168.1 (C-7'', 7'''). *Catalpa ovata* (Bignoniaceae).⁶²

370. Des-*p*-hydroxybenzoylkisasagenol B



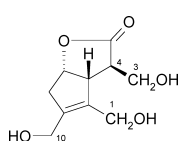
C₉H₁₄O₄; 186.0892; brown oil; [α]_D²⁶ -26.2° (c=0.4, MeOH); UV (MeOH): 203 (3.20); ¹H-NMR (270 MHz, CD₃OD): 3.63, 3.69 (each d, 11.4, H₂-1), 3.51 (ddd, 9.8, 8.5, 5.8, H_α-3), 3.89 (ddd, 8.5, 7.4, 3.0, H_β-3), 1.73 (dddd, 12.0, 9.8, 3.0, 2.9, H_α-4), 2.08 (dddd, 12.0, 9.3, 7.4, 5.8, H_β-4), 2.46 (ddd, 9.3, 2.9, 1.7, H-5), 4.40 (dd, 2.2, 1.7, H-6), 5.83 (d, 2.2, H-7), 4.14, 4.15 (each t, 1.7, H₂-10); ¹³C-NMR (67.8 MHz, CD₃OD): 66.2 (C-1), 68.1 (C-3), 33.2 (C-4), 55.1 (C-5), 81.2 (C-6), 131.8 (C-7), 148.8 (C-8), 98.3 (C-9), 59.2 (C-10). *Catalpa fructus* (Bignoniaceae).⁵⁹

371. (-) Ningpogenin (revision of 1-dehydroxy-3,4-dihydroaucupigenin)



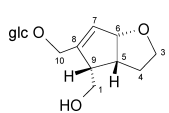
C₉H₁₄O₃; 170.0943; possibly isomer of (+) ningpogenin; colorless oil; [α]_D²² -6.0° (c=0.1, MeOH); UV (MeOH): 208, 224; IR (film): 3376, 2922, 1715, 1580, 1046; ¹H-NMR (600 MHz, CD₃OD): 5.01 (dd, 7.5, 1.5, H-1), 3.64 (ddd, 12.5, 9.0, 6.0, H-3), 3.72 (ddd, 12.5, 7.0, 6.0, H-3), 1.83 (dddd, 12.5, 9.0, 7.0, 6.0, H-4), 1.92 (td, 12.5, 6.0, H-4), 3.07 (dddd, 8.0, 7.5, 7.0, 6.0, H-5), 2.94 (qq-like, 11.0, 8.0, 6.0, 1.5, H-6), 5.60 (quint, 1.5, H-8), 3.77 (dd, 11.0, 6.0, H-9), 3.66 (q-like, 11.0, H-9), 4.14 (ABq, 14.5, 1.5, H-10), 4.11 (ABq, 14.5, 1.5, H-10); ¹³C-NMR (150 MHz, CD₃OD): 88.3 (C-1), 68.4 (C-3), 28.9 (C-4), 44.3 (C-5), 49.8 (C-6), 150.2 (C-7), 127.0 (C-8), 62.3 (C-9), 61.0 (C-10). *Scrophularia lepidota* (Scrophulariaceae).⁴⁴

372. Iridolactone



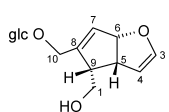
C₁₀H₁₄O₅; 214.0841; viscous syrup; [α]_D²⁸ -30.6° (c=0.72, MeOH); IR (film): 3332, 1747, 1362, 1192, 1061, 1192, 1061, 991; ¹H-NMR (400 MHz, CD₃OD): 4.19 (br s, H₂-1), 3.86 (dd, 10.6, 3.7, H-3), 3.93 (dd, 10.6, 4.1, H-3), 2.83 (ddd, 6.4, 4.1, 3.7, H-4), 3.67 (m, H-5), 5.11 (td, 6.6, 1.1, H-6), 2.71 (d, 18.1, H-7), 2.91 (ddd, 18.1, 6.6, 1.1, H-7), 4.15 (br d, 13.2, H-10), 4.29 (br d, 13.2, H-10). *Lasianthus wallichii* (Rubiaceae).¹⁸⁸

373. Crescentoside A



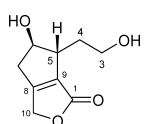
C₁₅H₂₄O₈; 332.1471; powder; [α]_D²⁵ -21.0° (c=0.7, MeOH), ¹H-NMR (400 MHz, D₂O): 3.66 (dd, 12.0, 1.8, H_a-1), 3.49 (dd, 12.0, 9.0, H_b-1), 3.60 (ddd, 12.8, 6.6, 4.4, H_a-3), 3.55 (m, H_b-3, H_b-6'), 1.74 (m, H_a-4), 1.72 (m, H_b-4), 3.08 (dddd, 7.8, 7.6, 7.2, 6.8, H-5), 4.96 (br d, 7.6, H-6), 5.50 (br s, H-7), 2.96 (ddd, 9.0, 7.8, 5.6, H-9), 4.01 and 3.96 (each d, 14.9, H₂-10), 4.28 (d, 7.8, H-1'), 3.14 (dd, 8.8, 7.8, H-2'), 3.39 (dd, 8.8, 8.8, H-3'), 3.24 (dd, 8.8, H-4'), 3.35 (ddd, 8.8, 5.7, 1.8, H-5'), 3.75 (dd, 12.0, 1.8, H_a-6'); ¹³C-NMR (100 MHz, D₂O): 66.9 (C-1), 58.8 (C-3), 27.1 (C-4), 42.0 (C-5), 86.5 (C-6), 124.8 (C-7), 146.9 (C-8), 46.0 (C-9), 68.7 (C-10), 100.1 (C-1'), 72.6 (C-2'), 75.5 (C-3'), 69.2 (C-4'), 75.3 (C-5'), 60.3 (C-6'). *Crescentia cujete* (Bignoniaceae).⁷³

374. Crescentoside B



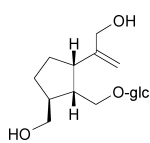
C₁₅H₂₂O₈; 330.1314; powder; [α]_D²⁵ -43° (c=0.5, MeOH); ¹H-NMR (400 MHz, D₂O): 3.66 (dd, 12.0, 5.6, H_a-1), 3.49 (dd, 12.0, 9.0, H_b-1), 6.21 (d, 6.6, H-3), 4.79 (dd, 6.6, 4.6, H-4), 2.70 (ddd, 7.8, 7.6, 4.6, H-5), 4.96 (br d, 7.6, H-6), 5.81 (br s, H-7), 3.04 (ddd, 9.0, 7.8, 5.6, H-9), 3.98 and 3.95 (each d, 14.0, H₂-10), 4.35 (d, 8.0, H-1'), 3.15 (dd, 9.0, 8.0, H-2'), 3.40 (dd, 9.0, 9.0, H-3'), 3.26 (dd, 9.0, 9.0, H-4'), 3.35 (ddd, 9.0, 4.9, 1.8, H-5'), 3.76 (dd, 12.0, 1.8, H_a-6'), 3.56 (dd, 12.0, 4.9, H_b-6'); ¹³C-NMR (100 MHz, D₂O): 67.1 (C-1), 141.8 (C-3), 105.3 (C-4), 39.8 (C-5), 87.1 (C-6), 124.7 (C-7), 147.0 (C-8), 46.1 (C-9), 68.7 (C-10), 99.9 (C-1'), 72.6 (C-2'), 75.5 (C-3'), 69.1 (C-4'), 75.3 (C-5'), 60.2 (C-6'). *Crescentia cujete* (Bignoniaceae).⁷³

375. Viteoid I



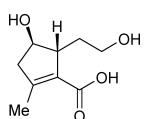
C₉H₁₂O₄; 184.0735; colorless oil; [α]_D²⁷ -30.4° (c=1.3, MeOH); IR (KBr): 3371, 1740; ¹H-NMR (500 MHz, CD₃OD): 3.73 (m, H₂-3), 1.82 (dddd, 14.0, 6.7, 6.7, 6.7, H-4), 1.75 (dddd, 14.0, 6.7, 6.7, 6.7, H-4), 2.76 (br s, H-5), 4.55 (ddd, 6.7, 3.7, 3.7, H-6), 3.05 (m, H-7), 2.52 (m, H-7), 4.88 (d like, 1.2, H₂-10); ¹³C-NMR (100 MHz, CD₃OD): 172.7 (C-1), 61.4 (C-3), 35.7 (C-4), 47.5 (C-5), 84.1 (C-6), 38.7 (C-7), 174.3 (C-8), 137.2 (C-9), 71.2 (C-10). *Vitex rotundifolia* (Verbenaceae).¹⁷⁹

376. Lantanoside



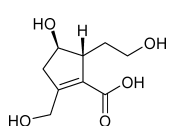
C₁₆H₂₈O₈; 348.1784; amorphous powder; [α]_D²⁰ -28.0° (c=0.41, MeOH); UV (MeOH): 205; IR (KBr): 3392, 2929, 1608, 1163, 1083, 1044; ¹H-NMR (500 MHz, CD₃OD): 3.69 and 3.37 (each m, H₂-1), 5.17 and 4.93 (each d, 1.0, H₂-3), 2.54 (m, H-5), 1.80 and 1.72 (each m, H₂-6), 1.94 and 1.30 (each m, H₂-7), 2.03 (m, H-8), 2.24 (m, H-9), 3.54 (m, H₂-10), 4.16 and 4.03 (each brd, 14.6, H₂-11), 4.18 (d, 7.8, H-1'), 3.18 (dd, 9.1, 7.8, H-2'), 3.38 (dd 't', 9.0, H-3'), 3.30 (dd 't', 9.0, H-4'), 3.27 (m, H-5'), 3.70 (dd, 12.0, 4.8, H_a-6'), 3.89 (dd, 12.0, 2.2, H_b-6'); ¹³C-NMR (125 MHz, CD₃OD): 71.9 (C-1), 108.1 (C-3), 150.4 (C-4), 45.2 (C-5), 29.7 (C-6), 28.7 (C-7), 46.4 (C-8), 43.9 (C-9), 67.2 (C-10), 66.2 (C-11), 104.2 (C-1'), 75.2 (C-2'), 78.0 (C-3'), 71.6 (C-4'), 77.9 (C-5'), 62.7 (C-6'). *Viburnum lantana* (Caprifoliaceae).¹⁹⁰

377. Crescentin I



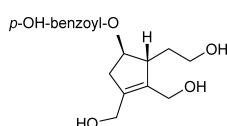
C₉H₁₄O₄; 186.0892; powder; [α]_D²⁵ -43.0° (c=1.0, MeOH); ¹H-NMR (400 MHz, D₂O): 3.45 (t, 6.8, H₂-3), 1.52 (dt, 13.9, 6.8, H-4), 1.39 (dt, 13.9, 6.8, H-4), 2.64 (m, H-5), 3.91 (dd, 4.6, 2.6, H-6), 2.67 (dd, 18.1, 4.6, H-7), 2.04 (d, 18.1, H-7), 1.69 (s, H₃-10); ¹³C-NMR (100 MHz, D₂O): 175.4 (C-1), 59.6 (C-3), 33.2 (C-4), 52.2 (C-5), 74.5 (C-6), 45.4 (C-7), 141.3 (C-8), 133.7 (C-9), 14.5 (C-10); *Crescentia cujete* (Bignoniaceae).⁷³

378. Crescentin II



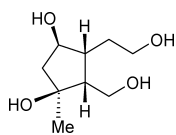
C₉H₁₄O₃; 202.0841; powder; [α]_D²⁵ -21.0° (c=1.0, MeOH); ¹H-NMR (400 MHz, D₂O): 3.42 (t, 6.7, H-3), 1.62 (dt, 12.8, 6.7, H-4), 1.44 (dt, 12.8, 6.7, H-4), 2.59 (m, H-5), 3.93 (dd, 4.5, 2.6, H-6), 2.64 (dd, 17.0, 4.6, H-7), 2.05 (d, 17.0, H-7), 4.21 (br d, 14.5, H-10), 4.07 (br d, 14.5, H-10); ¹³C-NMR (100 MHz, D₂O): 175.0 (C-1), 59.5 (C-3), 33.5 (C-4), 52.2 (C-5), 74.1 (C-6), 45.3 (C-7), 145.8 (C-8), 133.5 (C-9), 60.9 (C-10); *Crescentia cujete* (Bignoniaceae).⁷³

379. Crescentin III



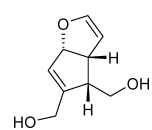
C₁₆H₂₀O₆; 308.1260; powder; [α]_D²⁵ -55.0° (c=0.6, MeOH); ¹H-NMR (400 MHz, C₅D₅N): 4.59 (br s, H₂-1), 4.14 (ddd, 12.7, 7.1, 6.3, H-3), 4.11 (ddd, 12.7, 7.1, 6.3, H-3), 2.49 (dddd, 12.4, 7.3, 7.1, 6.3, H-4), 2.45 (dddd, 12.4, 7.8, 7.1, 6.3, H-4), 3.68 (ddd, 7.8, 7.3, 6.6, H-5), 5.92 (ddd, 6.6, 6.3, 1.9, H-6), 3.16 (dd, 15.1, 6.3, H-7), 3.01 (dd, 15.1, 1.9, H-7), 4.77 (d, 12.4, H-10), 4.57 (d, 12.4, H-10), 8.20 (d, 8.8, H-2', 6'), 7.09 (d, 8.8, H-3', 5'); ¹³C-NMR (100 MHz, C₅D₅N): 56.9 (C-1), 61.1 (C-3), 31.3 (C-4), 47.1 (C-5), 75.8 (C-6), 41.0 (C-7), 136.9 (C-8), 139.2 (C-9), 58.4 (C-10), 122.1 (C-1'), 132.3 (C-2', 6'), 116.1 (C-3', 5'), 163.5 (C-4'), 166.5 (C-7'). *Crescentia cujete* (Bignoniaceae).⁷³

380. Crescentin IV



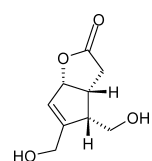
$C_9H_{18}O_4$; 190.1205; oil; $[\alpha]_D^{25} -39.0^\circ$ ($c=1.0$, MeOH); 1H -NMR (400 MHz, D_2O): 3.52 (t, H₂-1, 3), 1.62 (dt, 13.7, 6.7, H-4), 1.44 (ddd, 13.7, 6.6, 2.7, H-4), 2.23 (dddd, 9.1, 6.7, 3.8, 2.7, H-5), 3.96 (ddd, 8.1, 5.1, 3.8, H-6), 2.17 (dd, 14.2, 8.1, H-7), 1.66 (dd, 14.2, 5.1, H-7), 2.15 (ddd, 11.4, 9.1, 3.6, H-9), 1.20 (s, H₃-10); ^{13}C -NMR (100 MHz, D_2O): 57.8 (C-1), 60.5 (C-3), 30.4 (C-4), 44.2 (C-5), 75.8 (C-6), 47.9 (C-7), 78.8 (C-8), 52.4 (C-9), 23.5 (C-10); *Crescentia cujete* (Bignoniaceae).⁷³

381. Crescentin IV



$C_9H_{12}O_3$; 168.0786; powder; $[\alpha]_D^{25} -53.0^\circ$ ($c=0.5$, MeOH); 1H -NMR (400 MHz, D_2O): 3.66 (dd, 12.1, 5.6, H-1), 3.49 (dd, 12.1, 9.0, H-1), 6.21 (d, 6.6, H-3), 4.79 (dd, 6.6, 4.6, H-4), 3.08 (dddd, 7.8, 7.6, 7.2, 6.8, H-5), 4.96 (br d, 7.6, H-6), 5.81 (br s, H-7), 2.96 (ddd, 9.0, 7.8, 5.6, H-9), 3.98 (d, 14.0, H-10), 3.95 (d, 14.0, H-10); ^{13}C -NMR (100 MHz, D_2O): 67.3 (C-1), 142.0 (C-3), 105.6 (C-4), 39.8 (C-5), 86.9 (C-6), 124.7 (C-7), 147.8 (C-8), 47.0 (C-9), 60.3 (C-10). *Crescentia cujete* (Bignoniaceae).⁷³

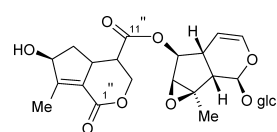
382. Pedicularis-lactone



$C_9H_{12}O_4$; 184.0735; white amorphous powder; $[\alpha]_D^{15} +45.5^\circ$ ($c=0.154$, MeOH); IR (MeOH): 3322, 2947, 1734, 1669, 1450, 1115, 1028, 660; 1H -NMR (400 MHz, $DMSO-d_6$): 3.52 (dd, 11.0, 4.1, H-1), 3.42 (dd, 11.0, 6.4, H-1), 2.55 (dddd, 12.5, 5.7, 12.5, 8.7, H₂-4), 3.15 (dddd, 7.3, 7.5, 8.7, 5.7, H-5), 5.31 (br d, 7.3, H-6), 5.69 (br s, H-7), 2.81 (m, H-9), 4.05 (dd, 15.5, 1.5, H-10), 3.95 (dd, 15.5, 1.5, H-10); ^{13}C -NMR (100 MHz, $DMSO-d_6$): 59.3 (C-1), 177.5 (C-3), 29.8 (C-4), 38.6 (C-5), 87.3 (C-6), 122.3 (C-7), 154.0 (C-8), 48.4 (C-9), 58.9 (C-10). *Pedicularis chinensis* (Scrophulariaceae).⁴¹

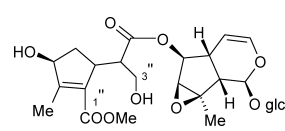
Group-6a (bis-iridoid)

383. Iridolarin A



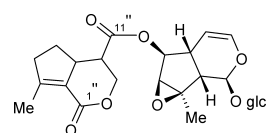
$C_{25}H_{32}O_{13}$; 540.1842; colorless amorphous powder; $[\alpha]_D^{22} -170.5^\circ$ ($c=0.78$, MeOH); UV (MeOH): 204 (4.04), 233 (3.96); IR (KBr): 3400, 2850, 1715, 1645, 1405, 1265, 1150, 1055, 1010, 920, 855, 825, 755; 1H -NMR (400 MHz, CD_3OD): 5.09 (d, 9.0, H-1), 6.34 (dd, 7.0, 1.3, H-3), 4.83 (dd, 7.0, 3.9, H-4), 2.07 (m, H-5), 4.87 (dd, 6.6, 1.1, H-6), 3.45 (d, 1.1, H-7), 2.36 (m, H-9), 1.52 (s, H₃-10), 4.76 (d, 7.9, H-1'), 3.23 (dd, 9.5, 7.9, H-2'), 3.38 (d, 9.5, H-3'), 3.21 (dd, 9.5, 8.8, H-4'), 3.30 (ddd, 8.8, 7.0, 2.0, H-5'), 3.60 (dd, 11.9, 7.0, H-6'), 3.91 (dd, 11.9, 2.0, H-6'), 4.51 (dd, 11.9, 3.5, H-3''), 4.57 (dd, 11.9, 2.0, H-3''), 3.14 (ddd, 5.5, 3.5, 2.0, H-4''), 3.60 (m, H-5''), 2.06 (m, H-6''), 2.37 (m, H-6''), 4.52 (m, H-7''), 2.18 (dd, 2.6, 0.6, H₃-10''); ^{13}C -NMR (100 MHz, CD_3OD): 95.3 (C-1), 142.6 (C-3), 102.4 (C-4), 36.9 (C-5), 82.8 (C-6), 62.7 (C-7), 64.3 (C-8), 45.8 (C-9), 18.1 (C-10), 99.7 (C-1'), 75.0 (C-2'), 78.0 (C-3'), 71.9 (C-4'), 78.6 (C-5'), 63.2 (C-6'), 165.9 (C-1''), 71.3 (C-3''), 44.0 (C-4''), 43.9 (C-5''), 37.0 (C-6''), 79.8 (C-7''), 158.9 (C-8''), 126.8 (C-9''), 14.4 (C-10''), 172.4 (C-11''). *Linaria japonica* (Scrophulariaceae).¹⁹¹

384. Iridolarin B



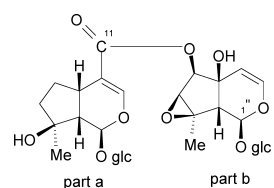
$C_{26}H_{36}O_{14}$; 572.2104; colorless amorphous powder; $[\alpha]_D^{22} -110.8^\circ$ ($c=0.69$, MeOH); UV (MeOH): 204 (3.99), 227 (3.93); IR (KBr): 3450, 2900, 1710, 1650, 1435, 1225, 1080—1000, 925, 860, 830, 730; 1H -NMR (400 MHz, CD_3OD): 5.12 (d, 9.3, H-1), 6.34 (dd, 6.0, 1.9, H-3), 4.92 (dd, 6.0, 4.4, H-4), 2.47 (ddt, 7.7, 4.4, 1.9, H-5), 4.94 (dd, 7.7, 1.3, H-6), 3.48 (br s, H-7), 2.41 (dd, 9.3, 7.7, H-9), 1.54 (s, H₃-10), 4.78 (d, 7.9, H-1'), 3.24 (dd, 9.0, 7.9, H-2'), 3.39 (t, 9.0, H-3'), 3.22 (dd, 9.7, 9.0, H-4'), 3.62 (dd, 11.9, 6.8, H-6'), 3.92 (dd, 11.9, 2.0, H-6'), 3.49 (dd, 10.9, 4.6, H-3''), 3.78 (dd, 10.9, 8.8, H-3''), 3.03 (dt, 8.8, 4.6, H-4''), 3.49 (m, H-5''), 1.78 (dd, 13.7, 9.3, 6.6, H-6''), 2.28 (ddd, 13.7, 7.5, 2.8, H-6''), 4.65 (br t, 6.8, H-7''), 2.08 (br s, H₃-10''); ^{13}C -NMR (100 MHz, CD_3OD): 95.3 (C-1), 142.3 (C-3), 103.0 (C-4), 37.5 (C-5), 82.2 (C-6), 62.7 (C-7), 64.1 (C-8), 46.0 (C-9), 18.2 (C-10), 99.7 (C-1'), 75.0 (C-2'), 78.6 (C-3'), 71.9 (C-4'), 78.0 (C-5'), 63.2 (C-6'), 167.6 (C-1''), 60.9 (C-3''), 51.9 (C-4''), 44.8 (C-5''), 37.0 (C-6''), 80.1 (C-7''), 158.8 (C-8''), 130.5 (C-9''), 13.6 (C-10''), 175.2 (C-11''), 51.8 (MeO-1''). *Linaria japonica* (Scrophulariaceae).¹⁹¹

385. Iridolarin C



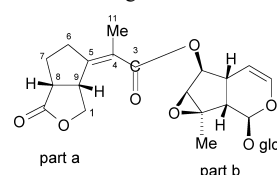
$C_{25}H_{32}O_{12}$; 524.1893; colorless amorphous powder; $[\alpha]_D^{18} -162.1^\circ$ ($c=0.85$, MeOH); UV (MeOH): 240 (3.86); IR (KBr): 3400, 2875, 1700, 1630, 1150, 1090—1000, 925, 830, 760; 1H -NMR (400 MHz, CD_3OD): 5.10 (d, 9.2, H-1), 6.34 (dd, 6.2, 1.5, H-3), 4.84 (dd, 6.2, 4.2, H-4), 2.40 (m, H-5), 4.89 (dd, 7.9, 1.3, H-6), 3.45 (d, 1.1, H-7), 2.40 (m, H-9), 1.52 (s, H₃-10), 4.76 (d, 7.9, H-1'), 3.23 (dd, 9.2, 7.9, H-2'), 3.38 (t, 9.2, H-3'), 3.21 (dd, 9.2, 8.8, H-4'), 3.30 (ddd, 8.8, 6.8, 2.0, H-5'), 3.60 (dd, 11.9, 6.8, H-6'), 3.92 (dd, 11.9, 2.0, H-6'), 4.46 (dd, 11.9, 3.5, H-3''), 4.53 (dd, 11.9, 2.6, H-3''), 3.12 (ddd, 5.9, 3.5, 2.6, H-4''), 3.42 (m, H-5''), 1.75 (ddd, 19.8, 12.6, 9.9, H-6''), 2.21 (dddd, 19.8, 11.0, 7.9, 1.6, H-6''), 2.40 (m, H-7''), 2.58 (br qm, 8.0, H-7''), 2.17 (t, 1.1, H-10''); ^{13}C -NMR (100 MHz, CD_3OD): 95.3 (C-1), 142.6 (C-3), 102.5 (C-4), 36.8 (C-5), 82.6 (C-6), 62.7 (C-7), 64.2 (C-8), 45.8 (C-9), 18.1 (C-10), 100.1 (C-11), 99.7 (C-1'), 75.0 (C-2'), 78.6 (C-3'), 71.9 (C-4'), 78.0 (C-5'), 62.8 (C-6'), 166.2 (C-1''), 70.8 (C-3''), 44.0 (C-4''), 46.0 (C-5''), 28.2 (C-6''), 39.2 (C-7''), 162.0 (C-8''), 124.0 (C-9''), 16.7 (C-10''), 172.7 (C-11''). *Linaria japonica* (Scrophulariaceae).¹⁹¹

386. Kickxin



$C_{31}H_{44}O_{19}$; 720.2476; amorphous powder; $[\alpha]_D^{20} -74.2^\circ$ ($c=0.57$, MeOH); 1H -NMR (250 MHz, CD_3OD) part a: 5.48 (d, 3.5, H-1), 7.57 (s, H-3), 3.15 (m, H-5), 2.30 (m, H-6), 1.65 (m, H-6), 1.68 (m, H-7), 1.28 (m, H-7), 2.26 (dd, 9.3, 3.9, H-9), 1.33 (s, H₃-10), 4.70 (d, 7.8, H-1'); part b: 5.50 (d, 6.9, H-1), 6.41 (d, 6.3, H-3), 4.93 (d, 6.3, H-4), 5.03 (d, 1.7, H-6), 3.53 (d, 1.7, H-7), 2.46 (d, 6.9, H-9), 1.51 (s, H₃-10), 4.68 (d, 7.8, H-1'); ^{13}C -NMR (62.5 MHz, CD_3OD) part a: 94.4 (C-1), 151.8 (C-3), 112.0 (C-4), 30.8 (C-5), 29.6 (C-6), 39.7 (C-7), 79.4 (C-8), 52.4 (C-9), 23.5 (C-10), 166.9 (C-11), 98.8 (C-1'), 73.6 (C-2'), 76.9 (C-3'), 70.7 (C-4'), 77.4 (C-5'), 61.8 (C-6'); part b: 93.9 (C-1), 142.1 (C-3), 106.1 (C-4), 73.6 (C-5), 78.2 (C-6), 63.3 (C-7), 63.3 (C-8), 51.2 (C-9), 16.4 (C-10), 98.6 (C-1'), 73.6 (C-2'), 76.6 (C-3'), 70.6 (C-4'), 77.2 (C-5'), 61.8 (C-6'). *Kickxia elatine*, *K. spuria*, *K. commutata* (Scrophulariaceae).²²

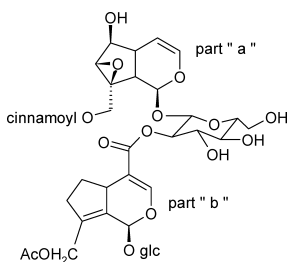
387. Arcusangeloside



$C_{25}H_{32}O_{11}$; 508.1944; amorphous powder; $[\alpha]_D^{20} -153.0^\circ$ ($c=0.2$, MeOH); UV (MeOH): 248 (2.32); IR (KBr): 3500, 3000, 1730, 1600, 1400, 1360, 1250; 1H -NMR (500 MHz, D_2O) part a: 4.57 (dd, 12.2, 2.0, H_a-1), 4.48 (dd, 12.2, 3.7, H_b-1), 2.56 (dddd, 17.0, 9.5, 8.0, 2.0, H_a-6), 2.40 (partially overlapped with H-5 of part b, H_b-6), 2.17 (m, H_a-7), 1.57 (m, H_b-7), 3.43 (partially overlapped with H-5' of part b, H-8), 3.15 (ddd, 5.3, 3.7, 2.0, H-9), 2.10 (br t, 2.0, H₃-11); part b: 5.08 (d, 10.0, H-1), 6.39 (dd, 6.2, 1.6, H-3), 4.89 (dd, 6.2, 4.3, H-4), 2.38 (partially overlapped with H_b-6 of part a, H-5), 4.96 (dd, 8.5, 1.5, H-6), 3.60 (br d, 1.5, H-7), 2.46 (dd, 10.0, 7.5, H-9), 1.50 (s, H₃-10), 4.82 (d, 9.2, H-1'), 3.32 (t, 9.2, H-2'), 3.45 (t, 9.2, H-3'), 3.37 (t, 9.2, H-4'), 3.40 (m, H-5'), 3.85 (dd, 13.2, 2.0, H_a-6), 3.67 (dd, 13.2, 4.3, H_b-6'); ^{13}C -NMR (125 MHz, D_2O) part a: 72.7 (C-1), 167.0 (C-3), 169.4 (C-4), 124.5 (C-5), 40.9 (C-6), 29.3 (C-7), 48.9 (C-8), 45.1 (C-9), 175.7 (C-10), 18.9 (C-11); part b: 97.3 (C-1), 143.7 (C-3), 104.7 (C-4), 38.3 (C-5),

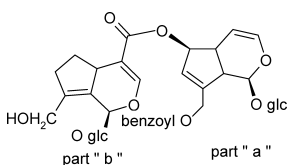
83.6 (C-6), 65.3 (C-7), 67.3 (C-8), 48.9 (C-9), 19.4 (C-10), 101.1 (C-1'), 75.5 (C-2'), 78.5 (C-3'), 72.2 (C-4'), 78.9 (C-5'), 63.4 (C-6'). *Linaria arcuangelii*, *L. flava* (Scrophulariaceae).¹⁸⁾

388. Globuloside A



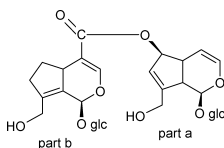
$C_{42}H_{50}O_{21}$; 890.2844; $[\alpha]_D^{20} -72.5^\circ$ ($c=0.1$, MeOH); UV (MeOH): 208 (sh), 216, 222 (sh), 238, 278; IR (KBr): 3400, 1708, 1627, 1508; 1H -NMR (500 MHz, CD_3OD) part a: 5.05 (d, 9.7, H-1), 6.35 (dd, 6.0, 1.8, H-3), 5.07 (dd, 6.0, 4.7, H-4), 2.28 (m, H-5), 3.90 (brs, H-6), 3.49 (brs, H-7), 2.57 (dd, 9.7, 7.6, H-9), 4.21 (d, 12.5, H-10), 4.97 (d, 12.5, H-10), 4.99 (d, 8.1, H-1'), 4.77 (dd, 9.5, 8.1, H-2'), 3.53 (t, 9.5, H-3'), 3.36 (overlapped with solvent peak, H-4'), 3.37 (overlapped with solvent peak, H-5'), 3.69 (dd, 12.0, 5.5, H-6'), 3.94 (br d, 12.0, H-6'), 7.70 (d, 16.0, H-8''), 6.58 (d, 16.0, H-7''), 7.65 (m, H-2'', 6''), 7.40 (m, H-3'', 4'', 5''); part b: 6.26 (s, H-1), 7.30 (d, 1.8, H-3), 3.57 (m, H-5), 1.49 (m, H-6), 2.51 (m, H-6), 2.42 (m, H₂-7), 4.68 (d, 12.9, H-10), 4.80 (d, 12.9, H-10), 2.07 (s, AcO-10), 4.67 (d, 7.9, H-1'), 3.16 (dd, 9.0, 7.9, H-2'), 3.36 (overlapped with solvent peak, H-3'), 3.29 (t, 9.5, H-4'), 3.37 (overlapped with solvent peak, H-5'), 3.69 (dd, 12.0, 5.5, H-6'), 3.90 (dd, 12.0, 2.0, H-6'); ^{13}C -NMR (75 MHz, CD_3OD) part a: 95.4 (C-1), 141.8 (C-3), 103.8 (C-4), 38.9 (C-5), 79.4 (C-6), 62.8 (C-7), 63.5 (C-8), 43.5 (C-9), 64.8 (C-10), 97.9 (C-1'), 74.6 (C-2'), 76.4 (C-3'), 71.7 (C-4'), 78.7 (C-5'), 62.9 (C-6'), 168.6 (C-9''), 119.0 (C-8''), 146.4 (C-7''), 136.0 (C-1''), 129.5 (C-2'', 6''), 129.9 (C-3'', 5''), 131.4 (C-4''); part b: 91.9 (C-1), 152.2 (C-3), 113.9 (C-4), 39.0 (C-5), 32.1 (C-6), 35.0 (C-7), 134.1 (C-8), 137.6 (C-9), 60.9 (C-10), 167.4 (C-11_b), 172.2, 20.7 (OAc), 99.9 (C-1'), 74.7 (C-2'), 78.0 (C-3'), 71.4 (C-4'), 78.3 (C-5'), 62.6 (C-6'). *Globularia trichosantha* (Globulariaceae).¹¹⁰⁾

389. Globuloside B



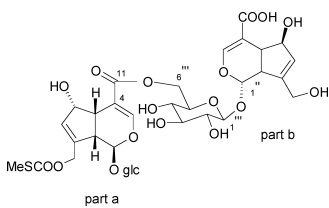
$C_{38}H_{46}O_{19}$; 806.2632; $[\alpha]_D^{20} -81.5^\circ$ ($c=0.1$, MeOH); UV (MeOH): 207, 230, 281; IR (KBr): 3392, 1704, 1625, 1541, 1508; 1H -NMR (500 MHz, CD_3OD) part a: 5.18 (d, 6.4, H-1), 6.35 (dd, 6.2, 2.0, H-3), 5.08 (dd, 6.2, 3.6, H-4), 2.98 (m, H-5), 5.32 (brs, H-6), 5.91 (t-like, 1.7, H-7), 3.15 (overlapped, H-9), 5.03 (br d, 13.5, H-10), 5.15 (br d, 13.5, H-10), 4.70 (d, 7.9, H-1'), 3.24 (dd, 8.0, 7.9, H-2'), 3.38 (overlapped, H-3'), 3.29 (overlapped, H-4'), 3.30 (overlapped, H-5'), 3.68, 3.86 (overlapped, H-6'), 8.06 (m, H-2'', 6''), 7.50 (t-like, 8.0, H-3'', 5''), 7.62 (m, H-4''); part b: 6.37 (s, H-1), 7.39 (d, 1.8, H-3), 3.60 (m, H-5), 1.45 (m, H-6), 2.55 (m, H-6), 2.50 (m, H₂-7), 4.19 (dd, 12.5, 1.0, H-10), 4.27 (br d, 12.5, H-10), 4.68 (d, 7.9, H-1'), 3.15 (dd, 9.0, 7.9, H-2'), 3.38 (overlapped, H-3'), 3.29 (overlapped, H-4'), 3.30 (overlapped, H-5'), 3.68, 3.86 (overlapped, H-6'), 13.5 (C-1), 142.1 (C-3), 104.8 (C-4), 42.6 (C-5), 84.6 (C-6), 128.6 (C-7), 146.0 (C-8), 49.0 (C-9), 63.7 (C-10), 100.0 (C-1'), 74.8 (C-2'), 77.9 (C-3'), 71.5 (C-4'), 78.3 (C-5'), 62.8 (C-6'), 167.6 (C-7''), 131.0 (C-1''), 130.7 (C-2'', 6''), 129.7 (C-3'', 5''), 134.5 (C-4''); part b: 92.3 (C-1), 152.4 (C-3), 114.2 (C-4), 39.0 (C-5), 32.4 (C-6), 34.8 (C-7), 134.5 (C-8), 142.7 (C-9), 59.1 (C-10), 168.5 (C-11), 100.1 (C-1'), 74.6 (C-2'), 77.9 (C-3'), 71.4 (C-4'), 78.3 (C-5'), 62.6 (C-6'). *Globularia trichosantha* (Globulariaceae).¹¹⁰⁾

390. Globuloside C



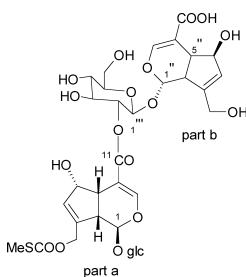
$C_{31}H_{42}O_{18}$; 702.2370; amorphous powder; $[\alpha]_D^{20} -80^\circ$ ($c=0.1$, MeOH); UV (MeOH): 224; IR (KBr): 3397, 1737, 1625; 1H -NMR (500 MHz, CD_3OD) part a: 5.14 (d, 6.5, H-1), 6.29 (dd, 6.2, 1.9, H-3), 5.03 (dd, 6.2, 3.6, H-4), 2.91 (m, H-5), 5.38 (dd, 3.7, 1.8, H-6), 5.81 (d, 1.8, H-7), 3.04 (t, 6.5, H-9), 4.37, 4.20 (each, d, 13.2, H₂-10), 4.66 (d, 7.9, H-1'), 3.22 (dd, 9.1, 7.9, H-2'), 3.38 (overlapped, H-3'), 3.29 (overlapped, H-4'), 3.30 (overlapped, H-5'), 3.88, 3.67 (each overlapped, H₂-6'); part b: 6.37 (s, H-1), 7.38 (d, 1.8, H-3), 3.60 (m, H-5), 2.56 (m, H-6), 1.45 (m, H-6), 2.50 (m, H₂-7), 4.27, 4.20 (each d, 13.9, H₂-10), 4.68 (d, 7.9, H-1'), 3.15 (dd, 9.1, 7.9, H-2'), 3.38 (overlapped, H-3'), 3.29 (overlapped, H-4'), 3.30 (overlapped, H-5'), 3.88, 3.67 (each overlapped, H₂-6'); ^{13}C -NMR (125 MHz, CD_3OD) part a: 96.5 (C-1), 141.8 (C-3), 105.0 (C-4), 42.4 (C-5), 84.7 (C-6), 126.0 (C-7), 151.6 (C-8), 48.3 (C-9), 61.1 (C-10), 99.8 (C-1'), 74.9 (C-2'), 78.0 (C-3'), 71.6 (C-4'), 78.3 (C-5'), 62.6 (C-6'); part b: 92.4 (C-1), 152.3 (C-3), 114.4 (C-4), 39.1 (C-5), 32.4 (C-6), 34.8 (C-7), 131.5 (C-8), 142.7 (C-9), 59.1 (C-10), 168.5 (C-11), 100.2 (C-1'), 74.7 (C-2'), 77.9 (C-3'), 71.4 (C-4'), 78.3 (C-5'), 62.5 (C-6'). *Globularia cordifolia* (Globulariaceae).⁴⁹⁾

391. Saprosmoside A



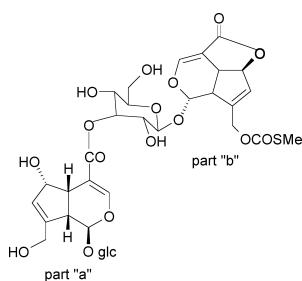
$C_{34}H_{44}O_{22}S$; 836.2044; yellow amorphous powder; $[\alpha]_D^{27} -16.4^\circ$ ($c=0.18$, MeOH); UV (MeOH): 233 (4.2); IR (dry film): 3338, 1710, 1699, 1631; 1H -NMR (500 MHz, CD_3OD) part a: 5.05 (d, 8.5, H-1), 7.67 (d, 1.5, H-3), 3.06 (ddd, 7.5, 6.0, 1.5, H-5), 4.82 (overlapping, H-6), 6.06 (d, 2.0, H-7), 2.64 (dd, 8.5, 7.5, H-9), 4.96 (d, 14.0, H-10), 5.10 (ddd, 14.0, 1.0, H-10), 2.35 (s, SMe), 4.76 (d, 8.0, H-1'), 3.23 (overlapping, H-2'), 3.38 (overlapping, H-3'), 3.25 (overlapping H-4'), 3.28 (m, H-5'), 3.64 (dd, 12.0, 6.0, H-6'), 3.86 (dd, 12.0, 2.0, H-6'); part b: 4.99 (d, 9.0, H-1), 7.57 (d, 1.0, H-3), 3.00 (ddd, 7.5, 6.0, 1.0, H-5), 4.82 (overlapping, H-6), 5.98 (d, 2.0, H-7), 2.57 (dd, 9.0, 7.5, H-9), 4.23 (d, 15.0, H-10), 4.42 (dd, 15.0, 1.5, H-10), 4.73 (d, 8.0, H-1'), 3.23 (overlapping, H-2'), 3.42 (overlapping, H-3'), 3.40 (overlapping, H-4'), 3.52 (m, H-5'), 4.29 (dd, 12.0, 2.0, H-6'), 4.46 (dd, 12.0, 5.0, H-6''); ^{13}C -NMR (125 MHz, CD_3OD) part a: 101.4 (C-1), 155.8 (C-3), 107.9 (C-4), 42.3 (C-5), 75.5 (C-6), 132.7 (C-7), 145.3 (C-8), 46.2 (C-9), 66.3 (C-10), 168.7 (C-11), 13.6 (SMe), 100.7 (C-1'), 75.0 (C-2'), 77.9 (C-3'), 71.6 (C-4'), 78.5 (C-5'), 63.0 (C-6'); part b: 101.6 (C-1), 154.1 (C-3), 110.1 (C-4), 43.1 (C-5), 75.5 (C-6), 130.4 (C-7), 151.1 (C-8'), 46.0 (C-9'), 61.6 (C-10), 172.4 (C-11), 100.6 (C-1'), 75.0 (C-2'), 77.6 (C-3'), 71.5 (C-4'), 75.6 (C-5'), 64.0 (C-6'). *Saprosmoside scorotechnii* (Rubiaceae).¹¹⁸⁾

392. Saprosmoside B



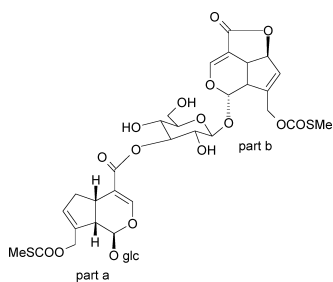
$C_{34}H_{44}O_{22}S$; 836.2044; yellow amorphous powder; $[\alpha]_D^{27} -14.0^\circ$ ($c=0.21$, MeOH); UV (MeOH): 232 (4.28); IR (dry film): 3326, 1715, 1698, 1642; 1H -NMR (500 MHz, CD_3OD) part a: 5.07 (d, 9.0, H-1), 7.75 (d, 1.5, H-3), 3.08 (ddd, 8.0, 4.5, 1.5, H-5), 4.86 (overlapping, H-6), 6.04 (s, H-7), 2.63 (dd, 9.0, 8.0, H-9), 4.94 (d, 16.0, H-10), 5.12 (d, 16.0, H-10), 2.34 (s, SMe), 4.73 (d, 9.0, H-1'), 3.12 (dd, 9.0, 8.0, H-2'), 3.39 (dd, 3.5, 8.0, H-3'), 3.28 (overlapping, H-4'), 3.64 (dd, 12.0, 6.0, H-6'), 3.84 (dd, 12.5, 1.5, H-6'); part b: 4.80 (d, 8.0, H-1), 7.50 (d, 1.5, H-3), 3.00 (ddd, 7.5, 6.0, 1.5, H-5), 4.84 (overlapping, H-6), 5.99 (d, 2.0, H-7), 2.43 (dd, 8.0, 7.5, H-9), 4.22 (d, 16.0, H-10), 4.45 (d, 16.0, H-10), 4.95 (d, 8.0, H-1'), 4.84 (overlapping, H-2'), 3.63 (dd, 9.5, 8.5, H-3'), 3.39 (overlapping, H-4'), 3.36 (m, H-5'), 3.68 (dd, 12.5, 6.0, H-6'), 3.88 (dd, 12.5, 2.5, H-6'); ^{13}C -NMR (125 MHz, CD_3OD) part a: 101.4 (C-1), 156.2 (C-3), 107.8 (C-4), 42.5 (C-5), 75.2 (C-6), 132.1 (C-7), 145.8 (C-8), 46.2 (C-9), 66.2 (C-10), 168.0 (C-11), 172.8 (COO-10), 13.5 (SMe), 100.7 (C-1'), 74.9 (C-2'), 77.8 (C-3'), 71.6 (C-4'), 78.5 (C-5'), 62.9 (C-6'); part b: 101.9 (C-1), 153.4 (C-3), 111.1 (C-4), 43.1 (C-5), 75.7 (C-6), 129.7 (C-7), 151.2 (C-8'), 46.3 (C-9'), 61.7 (C-10), 172.8 (C-11), 99.0 (C-1'), 74.8 (C-2'), 76.1 (C-3'), 71.5 (C-4'), 78.5 (C-5'), 62.6 (C-6'). *Saprosmoside scorotechnii* (Rubiaceae).¹¹⁸⁾

393. Saprososide C



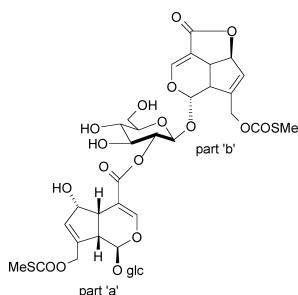
$C_{34}H_{42}O_{21}S$: 818.1938; yellow amorphous powder; $[\alpha]_D^{27} -92.3^\circ$ ($c=0.15$, MeOH); UV (MeOH): 234 (4.05); IR (dry film): 3343, 1740, 1702, 1655, 1630; 1H -NMR (500 MHz, CD_3OD): 5.06 (d, 9.0, H-1), 7.74 (d, 1.5, H-3), 3.08 (ddd, 8.0, 6.0, 1.5, H-5), 4.85 (overlapping, H-6), 6.02 (d, 2.5, H-7), 2.60 (dd, 9.0, 8.0, H-9), 4.21 (d, 16.0, H-10), 4.46 (d, 16.0, H-10), 4.72 (d, 8.0, H-1'), 3.24 (dd, 9.0, 8.0, H-2'), 3.25 (overlapping, H-3'), 3.26 (overlapping, H-4'), 3.38 (m, overlapping, H-5'), 3.73 (dd, 12.0, 5.5, H-6'), 3.92 (dd, 12.0, 2.0, H-6'); part b: 5.95 (H-1), 7.30 (d, 2.0, H-3), 3.67 (m, H-5), 5.56 (br d, 6.0, H-6), 5.74 (br s, H-7), 3.35 (overlapping, H-9), 4.85 (overlapping, H-10), 4.91 (dd, 14.5, 1.5, H-10), 2.35 (s, SMe), 4.81 (d, 8.0, H-1'), 3.40 (dd, 9.5, 8.0, H-2'), 5.06 (t, 9.5, H-3'), 3.57 (dd, 10.0, 9.5, H-4'), 3.47 (m, H-5'), 3.62 (dd, 12.0, 6.0, H-6'), 3.84 (dd, 12.0, 1.5, H-6'); ^{13}C -NMR (125 MHz, CD_3OD): 101.6 (C-1), 156.1 (C-3), 108.1 (C-4), 42.7 (C-5), 75.8 (C-6), 129.6 (C-7), 151.6 (C-8), 46.0 (C-9), 61.7 (C-10), 168.6 (C-11), 100.0 (C-1'), 74.9 (C-2'), 77.5 (C-3'), 71.6 (C-4'), 77.8 (C-5'), 62.4 (C-6'); part b: 93.3 (C-1), 150.2 (C-3), 106.1 (C-4), 37.4 (C-5), 86.1 (C-6), 129.5 (C-7), 143.7 (C-8'), 45.2 (C-9'), 64.3 (C-10), 172.4 (C-11), 172.6 (COO-10'), 13.6 (SMe), 100.5 (C-1'), 73.0 (C-2'), 78.7 (C-3'), 69.9 (C-4'), 78.0 (C-5'), 62.8 (C-6'). *Saprososide scortechinii* (Rubiaceae).¹¹⁸⁾

394. Saprososide D



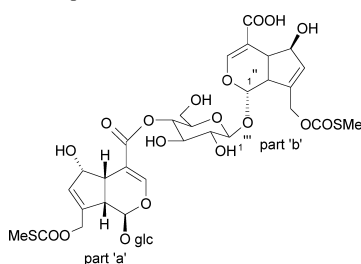
$C_{36}H_{44}O_{22}S_2$: 892.1765; yellow amorphous powder; $[\alpha]_D^{27} -88.9^\circ$ ($c=0.19$, MeOH); UV (MeOH): 233 (4.31); IR (dry film): 3276, 1747, 1714, 1655, 1632; 1H -NMR (500 MHz, CD_3OD) part a: 5.05 (d, 9.0, H-1), 7.74 (d, 1.5, H-3), 3.10 (ddd, 8.0, 6.2, 1.5, H-5), 4.85 (overlapping, H-6), 6.03 (d, 1.8, H-7), 2.66 (dd, 9.0, 8.0, H-9), 4.84 (d, 16.0, H-10), 4.90 (d, 16.0, H-10), 2.34 (s, SMe), 4.74 (d, 8.0, H-1'), 3.25 (dd, 9.0, 8.0, H-2'), 3.38 (t, 9.0, H-3'), 3.28 (overlapping, H-4', 5'), 3.64 (dd, 12.0, 6.0, H-6'), 3.86 (dd, 12.0, 2.0, H-6'); part b: 5.94 (d, 1.1, H-1), 7.30 (d, 2.0, H-3), 3.65 (m, H-5), 5.56 (br d, 5.5, H-6), 5.74 (br s, H-7), 3.35 (overlapping, H-9), 4.95 (d, 16.0, H-10), 5.11 (d, 16.0, H-10), 2.35 (s, SMe), 4.81 (overlapping, H-1'), 3.42 (dd, 9.5, 8.0, H-2'), 5.05 (dd, 9.5, 9.0, H-3'), 3.57 (dd, 10.0, 9.0, H-4'), 3.49 (m, H-5'), 3.75 (dd, 12.0, 6.0, H-6'), 3.94 (dd, 12.0, 2.0, H-6'); ^{13}C -NMR (125 MHz, CD_3OD) part a: 101.3 (C-1), 156.1 (C-3), 107.9 (C-4), 42.4 (C-5), 75.7 (C-6), 132.1 (C-7), 145.6 (C-8), 46.4 (C-9), 66.2 (C-10), 168.5 (C-11), 172.8 (COO-10), 13.5 (SMe), 100.6 (C-1'), 74.9 (C-2'), 77.8 (C-3'), 71.5 (C-4'), 78.5 (C-5'), 63.0 (C-6'); part b: 93.3 (C-1), 150.2 (C-3), 106.0 (C-4), 37.4 (C-5), 86.1 (C-6), 129.6 (C-7), 143.6 (C-8), 45.2 (C-9), 64.3 (C-10), 172.4 (C-11), 172.6 (COO-10'), 13.6 (SMe), 100.0 (C-1'), 72.9 (C-2'), 78.8 (C-3'), 69.9 (C-4'), 77.9 (C-5'), 62.4 (C-6'). *Saprososide scortechinii* (Rubiaceae).¹¹⁸⁾

395. Saprososide E



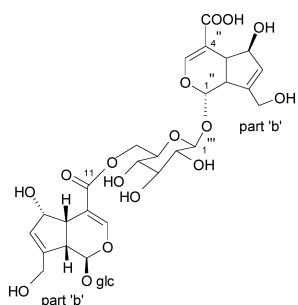
$C_{36}H_{44}O_{22}S_2$: 892.1765; yellow amorphous powder; $[\alpha]_D^{27} -103.4^\circ$ ($c=0.15$, MeOH); UV (MeOH): 235 (4.24); IR (dry film): 3359, 1747, 1708, 1657, 1635; 1H -NMR (500 MHz, CD_3OD) part a: 5.05 (d, 8.5, H-1), 7.70 (d, 1.5, H-3), 2.90 (ddd, 8.5, 5.5, 1.5, H-5), 4.80 (m, H-6), 6.00 (d, 1.8, H-7), 2.72 (t, 8.5, H-9), 5.16 (dd, 15.0, 2.0, H-10), 4.92 (d, 15.0, H-10), 2.34 (s, SMe), 4.72 (d, 7.5, H-1'), 3.28 (overlapping, H-2', 4', 5'), 3.39 (overlapping, H-3'), 3.65 (dd, 12.0, 6.0, H-6'), 3.84 (dd, 12.0, 2.0, H-6'); part b: 5.78 (d, 1.6, H-1), 7.16 (d, 2.1, H-3), 3.45 (ddd, 6.5, 6.5, 2.0, H-5), 5.52 (br d, 6.5, H-6), 5.71 (br s, H-7), 3.25 (m, H-9), 4.88 (dd, 14.0, 1.0, H-10), 4.79 (d, 14.0, H-10), 2.35 (s, SMe), 4.93 (d, 8.5, H-1'), 3.78 (dd, 9.5, 8.5, H-2'), 3.68 (dd, 9.5, 8.5, H-3'), 3.38 (dd, 10.0, 8.5, H-4'), 3.44 (m, H-5'), 3.72 (dd, 12.0, 6.0, H-6'), 3.94 (dd, 12.0, 2.0, H-6'); ^{13}C -NMR (125 MHz, CD_3OD) part a: 101.6 (C-1), 156.2 (C-3), 107.7 (C-4), 42.8 (C-5), 75.2 (C-6), 131.7 (C-7), 145.9 (C-8), 46.0 (C-9), 66.3 (C-10), 167.5 (C-11), 172.9 (COO-10), 13.6 (SMe), 100.9 (C-1'), 74.9 (C-2'), 77.7 (C-3'), 71.5 (C-4'), 78.6 (C-5'), 63.0 (C-6'); part b: 94.0 (C-1), 150.1 (C-3), 106.2 (C-4), 37.6 (C-5), 86.0 (C-6), 129.8 (C-7), 143.3 (C-8'), 45.0 (C-9'), 64.3 (C-10), 172.1 (C-11), 172.6 (COO-10'), 13.6 (SMe), 98.5 (C-1'), 74.4 (C-2'), 75.5 (C-3'), 71.6 (C-4'), 78.4 (C-5'), 62.6 (C-6'). *Saprososide scortechinii* (Rubiaceae).¹¹⁸⁾

396. Saprososide F



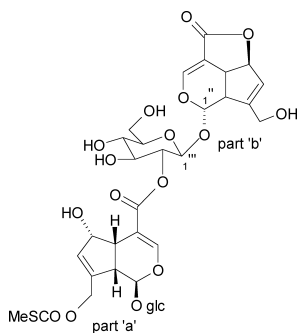
$C_{36}H_{46}O_{23}S_2$: 910.1859; yellow amorphous powder; $[\alpha]_D^{27} -10.0^\circ$ ($c=0.17$, MeOH); UV (MeOH): 232 (4.37); IR (dry film): 3309, 1712, 1632; 1H -NMR (500 MHz, CD_3OD) part a: 5.05 (d, 9.0, H-1), 7.72 (d, 2.0, H-3), 3.09 (ddd, 8.0, 6.0, 2.0, H-5), 4.86 (overlapping, H-6), 6.02 (d, 2.0, H-7), 2.63 (dd, 9.0, 8.0, H-9), 4.74 (d, 15.0, H-10), 5.10 (d, 15.0, H-10), 2.34 (SMe), 4.72 (d, 8.0, H-1'), 3.25 (dd, 9.5, 8.0, H-2'), 3.38 (dd, 9.5, 8.0, H-3'), 3.27 (overlapping, H-4', 5'), 3.63 (dd, 12.0, 6.0, H-6'), 3.86 (dd, 12.0, 2.0, H-6'); part b: 5.05 (d, 9.0, H-1), 7.64 (d, 1.0, H-3), 3.03 (ddd, 8.0, 6.0, 1.0, H-5), 4.82 (overlapping, H-6), 6.04 (d, 2.0, H-7), 2.68 (dd, 9.0, 8.0, H-9), 4.94 (d, 15.0, H-10), 5.10 (d, 15.0, H-10), 2.36 (s, SMe), 4.80 (d, 8.0, H-1'), 3.38 (dd, 9.5, 8.0, H-2'), 3.65 (dd, 9.5, 9.0, H-3'), 4.84 (overlapping, H-4'), 3.52 (m, H-5'), 3.56 (dd, 12.0, 6.0, H-6'), 3.63 (dd, 12.0, 2.0, H-6'); ^{13}C -NMR (125 MHz, CD_3OD) part a: 101.3 (C-1), 156.2 (C-3), 108.0 (C-4), 42.1 (C-5), 75.7 (C-6), 132.3 (C-7), 145.2 (C-8), 46.5 (C-9), 66.2 (C-10), 168.1 (C-11), 172.8 (COO-10), 13.5 (SMe), 100.7 (C-1'), 74.9 (C-2'), 77.8 (C-3'), 71.5 (C-4'), 78.6 (C-5'), 63.0 (C-6'); part b: 101.3 (C-1), 155.1 (C-3), 108.5 (C-4), 42.6 (C-5), 75.3 (C-6), 132.7 (C-7), 145.3 (C-8), 46.2 (C-9), 66.2 (C-10), 171.0 (C-11), 172.8 (COO-10), 13.5 (SMe), 100.6 (C-1'), 74.9 (C-2'), 75.7 (C-3'), 72.3 (C-4'), 76.6 (C-5'), 62.6 (C-6'). *Saprososide scortechinii* (Rubiaceae).¹¹⁸⁾

397. Saprososide G



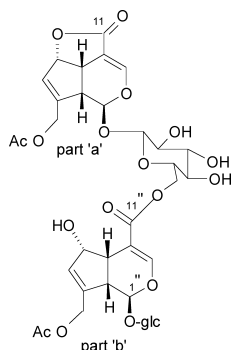
$C_{32}H_{42}O_{21}$: 762.2218; white amorphous powder; $[\alpha]_D^{19} -1.2^\circ$ ($c=0.25$, MeOH); UV (MeOH): 235 (4.31); IR (dry film): 3466, 1696, 1635; 1H -NMR (500 MHz, CD_3OD) part a: 5.04 (d, 8.5, H-1), 7.66 (d, 1.0, H-3), 3.03 (ddd, 6.5, 6.5, 1.5, H-5), 4.80 (overlapped, H-6), 6.04 (d, 2.0, H-7), 2.58 (overlapped, H-9), 4.21 (overlapped, H-10), 4.44 (dd, 12.5, 1.5, H-10), 4.72 (d, 7.5, H-1'), 3.24 (dd, 9.0, 7.5, H-2'), 3.40 (overlapped, H-3'), 3.28 (overlapped, H-4', 5'), 3.63 (dd, 12.0, 5.5, H-6'), 3.84 (dd, 12.0, 1.5, H-6'); part b: 5.02 (d, 9.0, H-1), 7.65 (d, 1.5, H-3), 2.98 (ddd, 6.0, 6.0, 1.5, H-5), 4.80 (overlapped, H-6), 6.00 (d, 2.0, H-7), 2.58 (m, H-9), 4.21 (overlapped, H-10), 4.41 (dd, 12.5, 1.5, H-10), 4.77 (d, 7.5, H-1'), 3.24 (dd, 9.0, 7.5, H-2'), 3.40 (overlapped, H-3'), 3.38 (overlapped, H-4'), 3.53 (overlapped, H-5'), 4.24 (dd, 12.0, 5.5, H-6'), 4.47 (dd, 12.0, 2.0, H-6'); ^{13}C -NMR (125 MHz, CD_3OD) part a: 101.7 (C-1), 155.8 (C-3), 108.1 (C-4), 42.7 (C-5), 75.6 (C-6), 130.2 (C-7), 151.2 (C-8), 45.8 (C-9), 61.7 (C-10), 168.9 (C-11), 100.5 (C-1'), 75.0 (C-2'), 77.8 (C-3'), 71.6 (C-4'), 78.4 (C-5'), 62.8 (C-6'); part b: 101.6 (C-1), 155.4 (C-3), 108.4 (C-4), 42.7 (C-5), 75.2 (C-6), 130.6 (C-7), 151.0 (C-8'), 45.8 (C-9'), 61.7 (C-10), 170.8 (C-11), 100.5 (C-1'), 75.0 (C-2'), 77.6 (C-3'), 71.6 (C-4'), 75.7 (C-5'), 64.1 (C-6'). *Saprososide scortechinii* (Rubiaceae).¹¹²⁾

398. Saprososide H



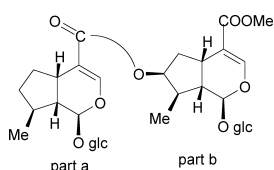
$C_{34}H_{42}O_{21}S$: 818.1938; yellow amorphous powder; $[\alpha]_D^{19} -46.4^\circ$ ($c=0.11$, MeOH); UV (MeOH): 233 (4.03); IR (dry film): 3390, 1704, 1656; 1H -NMR (500 MHz, CD_3OD) part a: 5.06 (d, 9.0, H-1), 7.70 (d, 1.5, H-3), 2.90 (ddd, 8.0, 6.0, 1.5, H-5), 4.80 (overlapped, H-6), 6.01 (d, 2.0, H-7), 2.71 (dd, 9.0, 8.0, H-9), 4.91 (d, 15.0, H-10), 5.14 (dd, 15.0, 2.0, H-10), 2.35 (s, SMe), 4.72 (d, 7.5, H-1'), 3.25 (dd, 9.0, 7.5, H-2'), 3.28 (overlapped, H-3', 4'), 3.38 (overlapped, H-5'), 3.64 (dd, 11.0, 5.5, H-6'), 3.85 (dd, 11.0, 1.5, H-6'), part b: 5.86 (d, 2.0, H-1), 7.15 (d, 2.0, H-3), 3.45 (m, H-5), 5.51 (m, H-6), 5.60 (dd, 2.0, 1.0, H-7), 3.20 (overlapped, H-9), 4.16 (s, H_2 -10), 4.92 (d, 8.0, H-1'), 4.79 (dd, 9.0, 8.0, H-2'), 3.67 (dd, 10.0, 9.0, H-3'), 3.38 (overlapped, H-4'), 3.40 (overlapped, H-5'), 3.70 (dd, 12.0, 6.0, H-6'), 3.94 (dd, 12.0, 2.0, H-6'); ^{13}C -NMR (125 MHz, CD_3OD) part a: 101.6 (C-1), 156.2 (C-3), 107.7 (C-4), 42.8 (C-5), 75.1 (C-6), 132.9 (C-7), 146.1 (C-8), 46.0 (C-9), 66.2 (C-10), 167.5 (C-11), 172.9 (COO-10), 13.6 (SMe), 101.0 (C-1'), 74.8 (C-2'), 78.6 (C-3'), 71.6 (C-4'), 77.7 (C-5'), 62.9 (C-6'); part b: 94.1 (C-1), 150.0 (C-3), 106.6 (C-4), 37.6 (C-5), 86.4 (C-6), 128.6 (C-7), 149.5 (C-8'), 44.7 (C-9'), 60.1 (C-10), 172.0 (C-11), 98.4 (C-1'), 74.3 (C-2'), 75.5 (C-3'), 71.4 (C-4'), 78.4 (C-5'), 62.6 (C-6'). *Saprososide scorotechnii* (Rubiaceae).¹¹²⁾

399. Iridoid dimer of asperuloside and asperulosidic acid



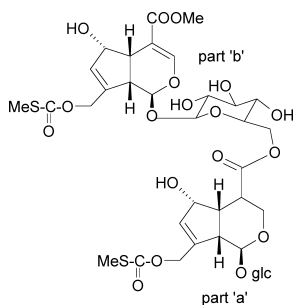
$C_{36}H_{44}O_{22}$: 828.2323; amorphous powder; $[\alpha]_D^{27} -58.4^\circ$ ($c=0.66$, MeOH); UV (MeOH): 228 (4.15); IR (film): 3382, 1732, 1658, 1633, 1257, 1053, 1026; 1H -NMR (400 MHz, CD_3OD) part a: 5.83 (d, 0.6, H-1), 7.30 (d, 2.2, H-3), 3.67 (ddd, 6.5, 6.5, 2.2, H-5), 5.56 (dt, 6.5, 1.7, H-6), 5.73 (m, H-7), 3.23 (H-9), 4.63 (dd, 14.1, 1.2, H-10), 4.72 (dd, 14.1, 1.2, H-10), 4.73 (d, 7.9, H-1', 1b'), 3.60—3.66 (m, H-5', 5b'), 4.22 (dd, 11.9, 6.2, H-6'), 4.63 (dd, 11.9, 2.2, H-6'); part b: 5.07 (dd, 9.0, 0.6, H-1), 7.70 (dd, 1.7, 0.6, H-3), 3.05 (ddd, 8.2, 6.0, 1.7, H-5), 4.84 (dd, 6.0, 2.6, H-6), 6.02 (br d, 1.8, H-7), 2.66 (ddd, 8.2, 8.2, 0.6, H-9), 4.80 (dd, 15.0, 1.8, H-10), 4.94 (dd, 15.0, 1.8, H-10), 3.61 (dd, 11.7, 4.0, H-6'), 3.85 (dd, 11.9, 1.8, H-6'), 2.05, 2.08 (each s, $2 \times OAc$); ^{13}C -NMR (100 MHz, CD_3OD) part a: 93.4 (C-1), 150.2 (C-3), 106.4 (C-4), 37.5 (C-5), 86.3 (C-6), 129.3 (C-7), 144.2 (C-8), 45.4 (C-9), 61.9 (C-10), 172.1 (C-11), 20.8, 172.5 (AcO-10, 10'), 100.1 (C-1'), 74.7 (C-2'), 78.0 (C-3'), 71.7 (C-4'), 76.0 (C-5'), 64.4 (C-6'); part b: 101.5 (C-1), 155.8 (C-3), 108.2 (C-4), 42.6 (C-5), 75.6 (C-6), 132.0 (C-7), 146.1 (C-8'), 46.4 (C-9'), 63.7 (C-10), 168.7 (C-11), 100.7 (C-1'), 75.0 (C-2'), 78.6 (C-3'), 71.8 (C-4'), 77.9 (C-5'), 63.1 (C-6'). *Lasianthus wallichii* (Rubiaceae).¹⁸⁸⁾

400. Picconioside 1



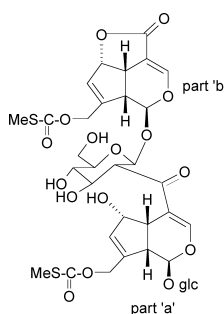
$C_{33}H_{48}O_{18}$: 732.2840; hygroscopic foam; $[\alpha]_D^{21} -74.3^\circ$ ($c=0.8$, MeOH); 1H -NMR (500 MHz, CD_3OD) part a: 5.29 (d, 4.5, H-1), 7.43 (br s, H-3), 3.11 (br q, 8.0, H-5), 2.30 (ddd, 14.5, 8.0, 1.0, H_2 -6), ca. 1.75 (mp, H_2 -6), 5.19 (br t, 4.5, H-7), 2.15 (m, H-8), 2.07 (dt, 9.0, 5.0, H-9), 1.09 (d, 6.5, H_3 -10), 4.66 (d, 8.0, H-1'), 3.20 (dd, 9.0, 8.0, H-2'), 3.18—3.40 (m, partly obsc by solvent signal, H-3', 4', 5'), 3.90 (dd, 12.0, 2.0, H_2 -6'), 3.68 (dd, 12.0, 6.0, H_2 -6'), 3.69 (MeO-11); part b: 5.23 (d, 5.5, H-1), 7.43 (s, H-3), 2.90 (br q, 7.5, H-5), 2.21 (m, H_2 -6), 1.41 (m, H_2 -6), 1.89 (m, H_2 -7), 1.21 (br dq, 12.0, 8.0, H_2 -7), 1.98 (br hept, H-8), ca. 1.75 (m, H-9), 0.96 (d, 6.9, H_3 -10), 4.68 (d, 8.0, H-1'), 3.21 (dd, 9.0, 8.0, H-2'), 3.67 (dd, 12.0, 6.0, H-6'), other sugar protons appeared in the same region as that of sugar protons of part a; ^{13}C -NMR (125 MHz, CD_3OD) part a: 97.5 (C-1), 152.6 (C-3), 113.2 (C-4), 32.6 (C-5), 40.5 (C-6), 78.1 (C-7), 40.9 (C-8), 47.1 (C-9), 13.8 (C-10), 169.3 (C-11), 51.8 (OMe), 100.1 (C-1'), 74.7 (C-2'), 77.9 (C-3'), 71.5 (C-4'), 78.3 (C-5'), 62.7 (C-6'); part b: 97.9 (C-1), 152.6 (C-3), 113.2 (C-4), 35.1 (C-5), 33.5 (C-6), 34.2 (C-7), 36.6 (C-8), 49.1 (C-9), 20.7 (C-10), 168.8 (C-11), sugar carbons appeared in the same region as that of sugar carbons of part a. *Picconia excelsa* (Oleaceae).⁸⁸⁾

401. Dimer of paederosidic acid and paederosidic acid methyl ester



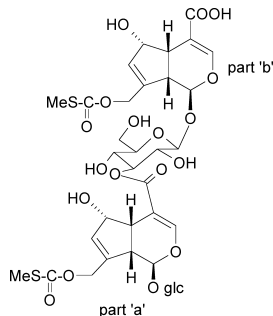
$C_{37}H_{48}O_{23}S_2$: 924.2027; yellow powder; $[\alpha]_D^{20} -5.7^\circ$ ($c=1.00$, MeOH); UV (MeOH): 236 (3.92); IR (Neat): 3394, 2920, 1702, 1633, 1440, 1379, 1294, 1161, 1102, 950; 1H -NMR (600 MHz, CD_3OD) part a: 5.06 (d, 9.1, H-1), 7.69 (d, 1.4, H-3), 3.07 (ddd, 7.4, 6.0, 1.4, H-5), 4.81 (dd, 6.0, 1.9, H-6), 6.06 (d, 1.9, H-7), 2.64 (dd, 9.1, 7.4, H-9), 4.99 (br d, 14.8, H_2 -10), 5.09 (dd, 14.8, 1.4, H_2 -10), 2.35 (s, SMe), 4.73 (d, 8.0, H-1'), 3.26 (dd, 9.3, 8.0, H-2'), 3.84 (dd, 9.3, 8.8, H-3'), 2.26 (t, 9.3, H-4'), 3.28 (m, H-5'), 3.64 (dd, 12.1, 6.0, H_2 -6'), 3.86 (dd, 12.1, 1.9, H_2 -6'); part b: 5.00 (d, 8.5, H-1), 7.65 (d, 1.1, H-3), 3.02 (ddd, 7.4, 6.0, 1.1, H-5), 4.79 (dd, 6.0, 1.7, H-6), 6.02 (d, 1.7, H-7), 2.62 (dd, 8.5, 7.4, H-9), 4.96 (dd, 14.6, 1.7, H_2 -10), 5.03 (br d, 14.6, H_2 -10), 3.74 (s, MeO-11), 2.34 (s, SMe-12), 4.72 (d, 8.0, H-1'), 3.27 (dd, 9.6, 8.0, H-2'), 3.40 (dd, 9.6, 8.8, H-3'), 3.93 (dd, 9.3, 8.8, H-4'), 3.51 (m, H-5'), 4.30 (dd, 11.8, 4.8, H_2 -6'), 4.46 (dd, 11.8, 1.9, H_2 -6'); ^{13}C -NMR (150 MHz, CD_3OD) part a: 101.5 (C-1), 155.8 (C-3), 108.0 (C-4), 42.4 (C-5), 75.5 (C-6), 133.2 (C-7), 145.3 (C-8), 42.4 (C-9), 66.3 (C-10), 168.6 (C-11), 172.7 (C-12), 13.6 (SMe), 100.7 (C-1'), 74.9 (C-2'), 77.9 (C-3'), 71.6 (C-4'), 78.6 (C-5'), 63.0 (C-6'); part b: 102.1 (C-1), 155.4 (C-3), 107.9 (C-4), 42.3 (C-5), 75.1 (C-6), 132.7 (C-7), 145.3 (C-8), 42.3 (C-9), 66.3 (C-10), 169.3 (C-11), 172.9 (C-12), 51.9 (OMe), 13.7 (SMe), 101.4 (C-1'), 74.9 (C-2'), 77.6 (C-3'), 71.3 (C-4'), 75.7 (C-5'), 63.8 (C-6'). *Paederia scandens* (Rubiaceae).¹²³⁾

402. Dimer of paederosidic acid and paederoside



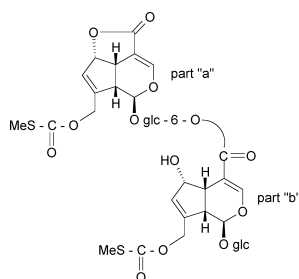
$C_{36}H_{44}O_{22}S_2$: 892.1765; yellow powder; $[\alpha]_D^{20} -108.9^\circ$ ($c=0.54$, MeOH); UV (MeOH): 239 (4.05); IR (Neat): 3418, 2925, 1746, 1706, 1657, 1272, 1166, 1084, 901; 1H -NMR (600 MHz, CD_3OD) part a: 5.06 (d, 8.2, H-1), 7.71 (d, 1.1, H-3), 2.89 (ddd, 8.2, 6.1, 1.1, H-5), 4.79 (d, 6.1, H-6), 6.00 (d, 2.2, H-7), 2.72 (dd, 8.2, 8.2, H-9), 4.91 (br d, 14.8, H_2 -10), 5.14 (dd, 14.8, 1.4, H_2 -10), 2.34 (s, SMe), 4.71 (d, 8.0, H-1'), 3.27 (dd, 9.1, 8.0, H-2'), 3.39 (t, 9.1, H-3'), 3.29 (t, 8.8, H-4'), 3.32 (m, H-5'), 3.64 (dd, 12.0, 6.0, H_2 -6'), 3.85 (br d, 12.0, H_2 -6'); part b: 5.85 (d, 1.4, H-1), 7.16 (d, 1.9, H-3), 3.47 (ddd, 8.8, 6.6, 1.9, H-5), 5.52 (br d, 6.6, H-6), 5.71 (br s, H-7), 3.28 (dd, 8.8, 1.4, H-9), 4.80 (br d, 14.0, H_2 -10), 4.89 (dd, 14.0, 1.4, H_2 -10), 2.35 (s, SMe), 4.93 (d, 8.0, H-1'), 4.79 (dd, 9.6, 8.0, H-2'), 3.68 (dd, 9.6, 8.8, H-3'), 3.38 (t, 8.8, H-4'), 4.43 (m, H-5'), 3.68 (dd, 11.8, 1.4, H_2 -6'), 3.94 (dd, 11.8, 1.9, H_2 -6'); ^{13}C -NMR (150 MHz, CD_3OD) part a: 101.6 (C-1), 156.2 (C-3), 107.7 (C-4), 42.8 (C-5), 72.5 (C-6), 131.7 (C-7), 146.0 (C-8), 46.0 (C-9), 66.3 (C-10), 167.5 (C-11), 172.9 (C-12), 13.6 (SMe), 100.9 (C-1'), 74.9 (C-2'), 77.8 (C-3'), 71.6 (C-4'), 78.6 (C-5'), 63.0 (C-6'); part b: 94.0 (C-1), 150.1 (C-3), 106.2 (C-4), 37.6 (C-5), 86.0 (C-6), 129.8 (C-7), 143.6 (C-8), 45.0 (C-9), 64.3 (C-10), 172.6 (C-11), 172.1 (C-12), 13.6 (SMe), 98.6 (C-1'), 74.4 (C-2'), 75.5 (C-3'), 71.5 (C-4'), 78.5 (C-5'), 62.6 (C-6'). *Paederia scandens* (Rubiaceae).¹²³⁾

403. Dimer of paederosidic acid



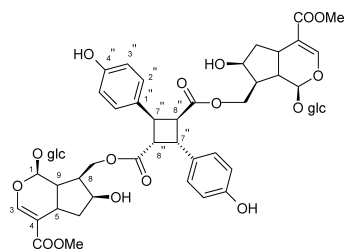
$C_{36}H_{46}O_{23}S_2$; 910.1870; isolated in pure state as nonacetate; oil; $[\alpha]_D^{20} +17.9^\circ$ ($c=0.35$, $CHCl_3$); UV (MeOH): 234 (4.36); IR (KBr): 2940, 1725, 1634, 1435, 1372, 1231, 1149, 1070, 956; 1H -NMR (600 MHz, $CDCl_3$) part a: 4.82 (d, 8.0, H-1), 7.53 (d, 1.4, H-3), 3.18 (ddd, 8.0, 6.1, 1.4, H-5), 5.64 (dd, 6.1, 2.2, H-6), 6.12 (d, 2.2, H-7), 2.57 (t, 8.0, H-9), 4.92 (dd, 15.4, 2.2, H_a -10), 5.10 (br d, 15.4, H_b -10), 2.36 (s, SMe), 4.94 (d, 8.0, H-1'), 5.06 (dd, 9.6, 8.0, H-2'), 5.25 (t, 9.6, H-3'), 5.14 (dd, 9.6, 9.3, H-4'), 3.73 (m, H-5'), 4.16 (dd, 12.4, 2.2, H_b -6'), 4.21 (dd, 12.4, 4.4, H_b -6'); part b: 4.83 (d, 8.2, H-1), 7.65 (d, 1.1, H-3), 3.25 (ddd, 8.2, 6.1, 1.1, H-5), 5.75 (br d, 6.1, H-6), 6.13 (d, 1.9, H-7), 2.64 (t, 8.2, H-9), 4.92 (dd, 15.4, 2.2, H_a -10), 5.10 (br d, 15.4, H_b -10), 2.35 (s, SMe), 4.98 (d, 8.0, H-1'), 5.06 (dd, 9.6, 8.0, H-2'), 5.29 (dd, 9.6, 9.3, H-3'), 5.18 (t, 9.6, H-4'), 3.77 (m, H-5'), 4.16 (dd, 12.4, 2.5, H-6'), 4.23 (dd, 12.4, 4.4, H-6'), 1.95, 1.96, 2.01, 2.02, 2.03, 2.04, 2.07 \times 2, 2.08 (each s, 9 \times Ac); ^{13}C -NMR (150 MHz, $CDCl_3$) part a: 100.3 (C-1), 154.6 (C-3), 105.2 (C-4), 38.9 (C-5), 76.8 (C-6), 128.6 (C-7), 146.6 (C-8), 44.7 (C-9), 64.4 (C-10), 165.3 (C-11), 171.1 (C-12), 13.5 (SMe), 97.8 (C-1'), 70.8 (C-2'), 72.6 (C-3'), 68.0 (C-4'), 72.0 (C-5'), 61.5 (C-6'); part b: 100.4 (C-1), 154.6 (C-3), 105.2 (C-4), 38.6 (C-5), 76.8 (C-6), 128.6 (C-7), 146.6 (C-8), 45.1 (C-9), 64.4 (C-10), 170.5 (C-11), 171.1 (C-12), 13.5 (SMe), 97.7 (C-1'), 71.1 (C-2'), 72.4 (C-3'), 68.2 (C-4'), 72.1 (C-5'), 61.5 (C-6'), 20.6 \times 4, 20.7 \times 3, 21.1 \times 2, 169.3, 169.4 \times 2, 169.5, 169.8, 170.2 \times 2, 170.5 \times 2 (9 \times Ac). *Paederia scandens* (Rubiaceae).¹²³⁾

404. Paederoscandoside



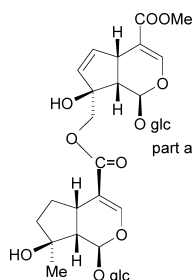
$C_{36}H_{44}O_{22}S_2$; 892.1765; amorphous powder; $[\alpha]_D^{22} -53.9^\circ$ ($c=1.65$, MeOH); UV (MeOH): 234 (4.13); IR (KBr): 3422, 2931, 1744, 1709, 1658, 1633, 1156, 1073; 1H -NMR (400 MHz, CD_3OD) part "a": 5.82 (d, 1.0, H-1), 7.30 (d, 2.0, H-3), 3.68 (td, 7.0, 2.0, H-5), 5.57 (d, 6.0, H-6), 5.76 (s, H-7), 4.80 and 4.84 (each d, 14.0, H_2 -10), 3.24 (dd, 9.0, 8.0, H-2'), 3.39 (t, 9.0, H-3'), 3.62 (ddd, 10.0, 7.0, 2.0, H-5'), 4.19 (dd, 12.0, 7.0, H-6'), 4.65 (dd, 12.0, 2.0, H-6'), 2.33 (s, SMe), H-1' was not assigned, H-9 and H-4' were in the solvent signal; part "b": 5.07 (d, 9.0, H-1), 7.70 (d, 1.0, H-3), 3.07 (ddd, 8.0, 6.0, 2.0, H-5), 4.86 (dd, 6.0, 2.0, H-6), 6.03 (d, 1.0, H-7), 2.66 (br t, 9.0, H-9), 4.96 (br d, 15.0, H-10), 5.08 (d, 15.0, H-10), 4.73 (d, 8.0, H-1'), 3.25 (dd, 9.0, 8.0, H-2'), 3.42 (t, 9.0, H-3'), 3.35 (t, 9.0, H-4'), 3.64 (dd, 12.0, 6.0, H-6'), 3.87 (dd, 12.0, 2.0, C-6'), 2.33 (s, SMe), H-5' was in the solvent signal; ^{13}C -NMR (100 MHz, CD_3OD): part "a": 93.2 (C-1), 150.2 (C-3), 106.3 (C-4), 37.5 (C-5), 86.3 (C-6), 130.0 (C-7), 143.6 (C-8), 45.3 (C-9), 64.5 (C-10), 172.4 (C-11), 13.6, 172.7 (COSMe), 100.0 (C-1'), 74.7 (C-2'), 77.9 (C-3'), 71.6 (C-4'), 75.9 (C-5'), 64.5 (C-6'); part "b": 101.5 (C-1), 155.8 (C-3), 108.1 (C-4), 42.7 (C-5), 75.6 (C-6), 132.5 (C-7), 145.6 (C-8), 46.4 (C-9), 66.3 (C-10), 168.6 (C-11), 13.8, 172.9 (COSMe), 100.8 (C-1'), 75.0 (C-2'), 77.8 (C-3'), 71.8 (C-4'), 78.6 (C-5'), 63.1 (C-6'). *Paederia scandens* var. *mairei* (Rubiaceae).¹⁵²⁾

405. Coelobillardin



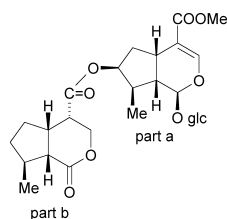
$C_{52}H_{64}O_{26}$; 1104.3685; white amorphous powder; $[\alpha]_D -55.7^\circ$ ($c=1.0$, MeOH); UV (MeOH): 235 (4.46), 280 (3.27); IR (KBr): 3400, 2920, 1690, 1625, 1510, 1440; 1H -NMR (400 MHz, CD_3OD): 5.21 (d, 5.5, H-1), 7.43 (s, H-3), 3.05 (m, H-5), 1.62 (m, H_a -6), 2.22 (overlapped, H_b -6), 4.13 (overlapped, H-7), 2.00 (m, H-8), 2.22 (overlapped, H-9), 4.35 (overlapped, H_a -10), 4.14 (overlapped, H_b -10), 3.72 (s, MeO), 4.69 (d, 7.7, H-1'), 3.20—3.45 (overlapped, H-2', 3', 4', 5'), 3.95 (dd, 11.3, 2.3, H_a -6'), 3.70 (dd, 11.3, 4.4, H_b -6'), 7.21 (d, 8.5, H-2'', 6''), 6.77 (d, 8.5, H-3'', 5''), 4.35 (overlapped, H-8'', 8'' or H-1', 3' of cyclobutane), 3.95 (overlapped, H-7'', 7'' or H-2, 4 of cyclobutane); dodecaacetate: 1H -NMR (400 MHz, $CDCl_3$): 5.28 (d, 3.1, H-1), 7.30 (s, H-3), 2.94 (td, 9.0, 7.1, H-5), 1.81 (m, H_a -6), 2.10 (m, H_b -6), 5.27 (dd, 5.2, 3.1, H-7), 2.07 (m, H-8), 2.20 (td, 9.0, 3.1, H-9), 4.32 (m, H_2 -10), 3.70 (s, MeO-11), 4.82 (d, 8.0, H-1'), 4.97 (dd, 9.1, 8.0, H-2'), 5.21 (t, 9.1, H-3'), 5.10 (t, 9.1, H-4'), 3.69 (ddd, 9.1, 4.4, 2.4, H-5'), 4.22 (dd, 11.6, 2.4, H_a -6'), 4.06 (dd, 11.6, 4.4, H_b -6'), 7.32 (d, 8.5, H-2'', 6''), 7.06 (d, 8.5, H-3'', 5''), 4.43 (dd, 11.0, 6.5, H-8'', 8''), 3.92 (dd, 11.0, 6.5, H-7'', 7''), 1.95—2.30 (12 \times Ac); ^{13}C -NMR (100 MHz, $CDCl_3$): 94.4 (C-1), 149.6 (C-3), 113.2 (C-4), 29.8 (C-5), 38.6 (C-6), 74.6 (C-7), 42.6 (C-8), 42.8 (C-9), 62.6 (C-10), 167.1 (C-11), 51.6 (OMe), 96.1 (C-1'), 70.9 (C-2'), 72.8 (C-3'), 68.3 (C-4'), 72.5 (C-5'), 61.8 (C-6'), 136.2 (C-1''), 129.0 (C-2'', 6''), 122.1 (C-3'', 5''), 150.3 (C-4''), 41.1 (C-7'', 7''), 47.0 (C-8'', 8''), 171.8 (C-9'', 9''), 20.6—21.4, 169.4—171.4 (12 \times Ac). *Coelospermum billardieri* (Rubiaceae).¹⁹²⁾

406. Randinoside



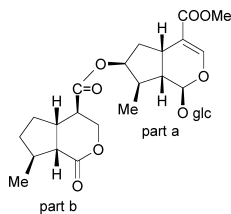
$C_{33}H_{46}O_{20}$; 762.2582; amorphous powder; $[\alpha]_D^{20} -6.5^\circ$ ($c=1.7$, MeOH); UV (MeOH): 239; IR (KBr): 3500, 3399, 1708; 1H -NMR (500 MHz, CD_3OD) part a: 5.78 (d, 2.5, H-1), 7.37 (d, 1.4, H-3), 3.69 (m, H-5), 6.14 (dd, 5.7, 2.7, H-6), 5.72 (dd, 5.7, 1.7, H-7), 2.60 (dd, 8.5, 2.5, H-9), 3.62 and 3.51 (each d, 11.3, H_2 -10), 3.69 (s, MeO-11), 4.65 (d, 7.9, H-1'), 3.18 (dd, 9.0, 7.9, H-2'), 3.28 (m, H-3'), 3.24 (t, 8.8, H-4'), 3.35 (dd, 9.0, 2.1, H-5'), 3.88 (dd, 10.0, 5.2, H_a -6'), 3.65 (dd, 10.0, 5.2, H_b -6'); part b: 5.43 (d, 4.0, H-1), 7.33 (br s, H-3), 3.17 (m, H-5), 2.27 and 1.47 (each m, H_2 -6), 1.70 (t, 7.2, H_2 -7), 2.21 (dd, 9.1, 4.0, H-9), 1.31 (s, H_2 -10), 4.64 (d, 7.9, H-1'), 3.17 (dd, 9.0, 7.9, H-2'), 3.29 (m, H_3 -3'), 3.25 (t, 8.8, H-4'), 3.33 (dd, 9.0, 2.1, H-5'), 3.86 (dd, 10.0, 5.1, H_a -6'), 3.63 (dd, 10.0, 5.1, H_b -6'); ^{13}C -NMR (125 MHz, CD_3OD) part a: 94.3 (C-1), 151.9 (C-3), 111.5 (C-4), 38.8 (C-5), 135.6 (C-6), 135.8 (C-7), 86.2 (C-8), 52.3 (C-9), 67.1 (C-10), 168.9 (C-11), 51.7 (MeO-11), 99.8 (C-1'), 74.7 (C-2'), 78.3 (C-3'), 71.7 (C-4'), 78.0 (C-5'), 62.9 (C-6'), part b: 95.9 (C-1), 150.0 (C-3), 108.9 (C-4), 32.2 (C-5), 30.7 (C-6), 40.8 (C-7), 80.5 (C-8), 52.4 (C-9), 24.6 (C-10), 169.9 (C-11), 99.8 (C-1'), 74.6 (C-2'), 77.9 (C-3'), 71.5 (C-4'), 78.3 (C-5'), 62.7 (C-6'). *Randia spinosa* (Rubiaceae).¹⁹³⁾

407. Asperuloide A



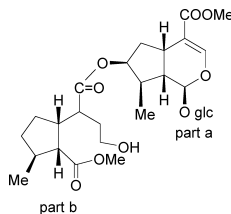
$C_{27}H_{38}O_{13}$; 570.2312; colorless needles; $[\alpha]_D^{22} -19.5^\circ$ ($c=1.52$, $CHCl_3$); UV (MeOH): 235 (3.93); IR (KBr): 3422, 2957, 1718, 1646; 1H -NMR (500 MHz, CD_3OD) part a: 5.24 (d, 5.4, H-1), 7.43 (d, 1.3, H-3), 3.08 (dd, 7.9, 7.7, H-5), 1.71 (ddd, 14.0, 8.5, 4.8, H_a -6), 2.29 (ddd, 14.5, 7.5, 1.2, H_b -6), 5.16 (t, 4.7, H-7), 2.15 (td, 13.6, 6.9, H-8), 2.03 (td, 8.7, 5.5, H-9), 1.08 (d, 6.9, H_2 -10), 3.69 (s, MeO-11), 4.66 (d, 7.9, H-1'), 3.20 (dd, 9.1, 7.9, H-2'), 3.37 (dd, 9.0, 8.7, H-3'), 3.26 (dd, 9.6, 8.6, H-4'), 3.31 (m, H-5'), 3.64 (dd, 11.9, 6.1, H_a -6'), 3.90 (dd, 11.9, 2.1, H_b -6'); part b: 4.42 (m, H_a -3), 3.23 (m, H_b -3), 2.96 (m, H-4), 1.52 (m, H-5), 1.93 (m, H_2 -6), 1.28 (dd, 12.1, 6.4, H_b -6), 1.98 (m, H_2 -7), 2.09 (m, H_3 -8), 2.52 (t, 10.6, H-9), 1.18 (d, 6.4, H_3 -10); ^{13}C -NMR (125 MHz, CD_3OD) part a: 97.7 (C-1), 152.7 (C-3), 112.8 (C-4), 32.9 (C-5), 40.4 (C-6), 79.4 (C-7), 40.8 (C-8), 46.9 (C-9), 13.8 (C-10), 169.2 (C-11), 51.7 (MeO), 100.2 (C-1'), 74.7 (C-2'), 78.0 (C-3'), 71.6 (C-4'), 78.4 (C-5'), 62.8 (C-6'); part b: 176.0 (C-1), 66.0 (C-3), 43.2 (C-4), 38.5 (C-5), 28.9 (C-6), 36.1 (C-7), 42.8 (C-8), 51.3 (C-9), 19.1 (C-10), 171.6 (C-11). *Asperula maximowiczii* (Rubiaceae).¹⁹⁴⁾

408. Asperuloide B



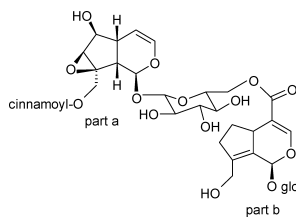
$C_{27}H_{38}O_{13}$; 570.2312; amorphous powder; $[\alpha]_D^{18} -40.6^\circ$ ($c=0.38$, MeOH); UV (MeOH): 236 (4.02); IR (KBr): 3414, 2956, 1726, 1634, 1440, 1288, 1076; 1H -NMR (500 MHz, CD_3OD) part a: 5.25 (d, 5.1, H-1), 7.41 (d, 1.3, H-3), 3.10 (dd, 7.9, 7.5, H-5), 1.73 (ddd, 14.4, 8.1, 5.2, H_a -6), 2.27 (ddd, 14.4, 11.8, 7.5, H_b -6), 5.16 (dd, 4.8, 3.9, H-7), 2.14 (m, H-8), 2.04 (td, 8.8, 5.1, H-9), 1.06 (d, 6.9, H_3 -10), 3.65 (s, MeO-11), 4.65 (d, 7.9, H-1'), 3.19 (dd, 9.1, 7.9, H-2'), 3.36 (dd, 9.0, 8.7, H-3'), 3.28 (dd, 9.6, 8.6, H-4'), 3.30 (m, H-5'), 3.65 (dd, 11.9, 6.1, H_a -6'), 3.89 (dd, 11.9, 2.1, H_b -6'); part b: 4.38 (dd, 11.3, 7.6, H_a -3), 4.49 (dd, 11.3, 3.2, H_b -3), 2.65 (td, 7.4, 3.2, H-4), 2.84 (m, H-5), 1.44 (dd, 9.7, 6.4, H_a -6), 2.10 (m, H_b -6), 1.23 (dd, 12.0, 6.5, H_a -7), 2.03 (dd, 6.1, 1.6, H_b -7), 2.20 (m, H-8), 2.54 (dd, 11.1, 9.2, H-9), 1.18 (d, 6.6, H_3 -10); ^{13}C -NMR (125 MHz, CD_3OD) part a: 97.5 (C-1), 152.5 (C-3), 113.0 (C-4), 32.7 (C-5), 40.4 (C-6), 79.7 (C-7), 40.8 (C-8), 46.9 (C-9), 13.7 (C-10), 169.2 (C-11), 51.7 (MeO), 100.2 (C-1'), 74.7 (C-2'), 77.9 (C-3'), 71.6 (C-4'), 78.3 (C-5'), 62.8 (C-6'); part b: 176.3 (C-1), 68.2 (C-3), 46.7 (C-4), 40.2 (C-5), 33.3 (C-6), 35.5 (C-7), 40.7 (C-8), 50.0 (C-9), 20.0 (C-10), 172.7 (C-11). *Asperula maximowiczii* (Rubiaceae).¹⁹⁴

409. Asperuloide C



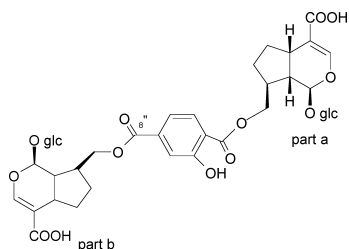
$C_{28}H_{42}O_{14}$; 602.2574; amorphous powder; $[\alpha]_D^{19} -53.2^\circ$ ($c=0.063$, MeOH); UV (MeOH): 235 (3.88); IR (KBr): 3422, 2956, 1718, 1634, 1440, 1288, 1076; 1H -NMR (500 MHz, CD_3OD) part a: 5.33 (d, 3.8, H-1), 7.40 (d, 1.2, H-3), 3.10 (m, H-5), 1.76 (ddd, 14.7, 7.2, 5.3, H_a -6), 2.33 (ddd, 14.8, 8.1, 1.6, H_b -6), 5.12 (brt, 3.8, H-7), 2.10 (m, H-8, 9), 1.11 (d, 6.5, H_3 -10), 3.69 (s, MeO-11), 4.66 (d, 7.9, H-1'), 3.18 (dd, 8.0, 7.9, H-2'), 3.37 (dd, 8.9, 8.7, H-3'), 3.27 (dd, 9.6, 8.5, H-4'), 3.31 (m, H-5'), 3.66 (dd, 11.9, 5.8, H-6'), 3.90 (dd, 11.9, 2.1, H-6'); part b: 3.72 (dd, 13.9, 7.2, H_a -3), 3.83 (dd, 10.8, 3.7, H_b -3), 2.60 (dd, 11.0, 2.9, H-4), 2.50 (m, H-5), 1.57 (dd, 11.1, 8.2, H_a -6), 1.90 (dd, 11.1, 6.7, H_b -6), 1.22 (ddd, 7.3, 6.3, 2.1, H_a -7), 2.04 (dd, 7.9, 1.7, H_b -7), 2.25 (ddd, 14.4, 7.3, 4.1, H-8), 2.55 (m, H-9), 1.06 (d, 6.9, H_3 -10), 3.66 (s, MeO-1); ^{13}C -NMR (125 MHz, CD_3OD) part a: 97.1 (C-1), 152.2 (C-3), 113.5 (C-4), 32.9 (C-5), 40.4 (C-6), 79.1 (C-7), 40.8 (C-8), 47.2 (C-9), 13.5 (C-10), 169.2 (C-11), 51.6 (MeO-11), 100.1 (C-1'), 74.7 (C-2'), 78.0 (C-3'), 71.6 (C-4'), 78.3 (C-5'), 62.7 (C-6'); part b: 177.4 (C-1), 63.7 (C-3), 51.7 (C-4), 42.1 (C-5), 32.1 (C-6), 34.4 (C-7), 40.0 (C-8), 52.0 (C-9), 21.9 (C-10), 175.4 (C-11), 51.4 (MeO-1). *Asperula maximowiczii* (Rubiaceae).¹⁹⁴

410. Wulfenolide [(10-O-(Cinnamoyl)-6'-(desacetyl-alpinosidyl)catalpol)]



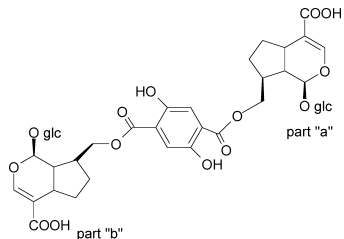
$C_{40}H_{48}O_{20}$; 848.2738; amorphous powder; $[\alpha]_D^{20} -53.1^\circ$ ($c=0.058$, MeOH); IR (film): 3383 (br), 2923, 1703, 1629, 1289, 1082, 879, 770, 687; 1H -NMR (500 MHz, CD_3OD) part a: 4.95 (d, 10.0, H-1), 6.37 (dd, 6.0, 1.5, H-3), 5.09 (dd, 6.0, 5.0, H-4), 2.29 (m, H-5), 3.91 (d, 8.0, H-6), 3.57 (m, H-7), 2.65 (dd, 9.5, 7.5, H-9), 5.04 and 4.18 (each d, 12.5, H_2 -10), 4.76 (d, 8.0, H-1'), 3.47 (dd, 9.5, 8.0, H-2'), 3.37 (m, overlapped, H-3'), 3.42 (m, H-4'), 3.30 (m, overlapped, H-5'), 4.75 (dd, 12.0, 5.0, H_a -6'), 4.20 (d, 12.0, H_b -6'), 7.65 (m, H-2'', 6''), 7.41 (m, H-3'', 4'', 5''), 7.73 (d, 16.0, H-7''), 6.56 (d, 16.0, H-8''); part b: 6.35 (s, H-1), 7.48 (d, 2.0, H-3), 3.59 (m, H-5), 2.57 and 1.48 (each m, H_2 -6), 2.47 (m, H_2 -7), 4.23 and 4.17 (each m, H_2 -10), 4.68 (d, 8.0, H-1'), 3.18 (m, H-2'), 3.37 (m, H-3'), 3.29 (m, H-4'), 3.30 (m, overlapped, H-5'), 3.86 (dd, 11.5, 2.0, H_a -6'), 3.65 (dd, 11.5, 5.0, H_b -6'); ^{13}C -NMR (125 MHz, CD_3OD) part a: 95.4 (C-1), 141.8 (C-3), 103.7 (C-4), 38.6 (C-5), 79.3 (C-6), 62.1 (C-7), 63.1 (C-8), 43.1 (C-9), 62.5 (C-10), 100.3 (C-1'), 75.5 (C-2'), 77.8 (C-3'), 70.9 (C-4'), 77.9 (C-5'), 62.4 (C-6'), 136.1 (C-1''), 129.1 (C-2''), 129.8 (C-3''), 131.3 (C-4''), 146.6 (C-7''), 118.5 (C-8''), 168.5 (C-9''); part b: 92.0 (C-1), 152.3 (C-3), 114.2 (C-4), 38.6 (C-5), 31.9 (C-6), 34.4 (C-7), 142.5 (C-8), 143.2 (C-9), 58.9 (C-10), 169.0 (C-11), 99.9 (C-1'), 74.3 (C-2'), 77.8 (C-3'), 71.4 (C-4'), 77.9 (C-5'), 62.3 (C-6'). *Wulfenia carinthiaca* (Scrophulariaceae).¹⁹⁵

411. Blumeoside B



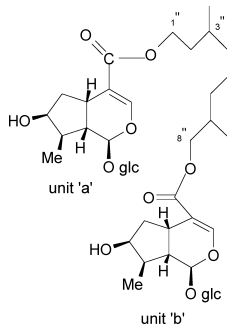
$C_{40}H_{50}O_{23}$; 898.2742; cream colored amorphous powder; mp 162–163 °C; $[\alpha]_D^{20} -56.0^\circ$ ($c=2.0$, MeOH); UV (MeOH): 212 (4.53), 238 (4.36), 327 (3.66); 1H -NMR (500 MHz, CD_3OD) aglycone parts: 5.16 (d, 7.3, H_a -1), 5.17 (d, 7.4, H_b -1), 7.50 (brs, H-3), 2.89 (m, H-5), 2.28 (m, H-6), 1.46 (m, H-6), 1.97 (m, H-7), 1.46 (m, H-7), 2.54 (m, H-8), 2.10 (m, H-9), 4.45 (dd, 11.0, 6.3, H_a -10), 4.34 (dd, 11.0, 6.8, H_b -10), 4.38 (dd, 11.0, 6.3, H_b -10), 4.28 (dd, 11.0, 6.8, H_b -10); glucose units: 4.66 (d, 7.8, H_a -1'), 4.67 (d, 7.8, H_b -1'), 3.06 (m, H-2'), 3.35 (m, H-3'), 3.23 (m, H-4'), 3.31 (m, H-5'), 3.65 (m, H-6'), 3.86 (m, H-6'); acyl unit: 7.58 (unresolved, H-3''), 7.59 (unresolved, H-5''), 8.02 (d, 8.8, H-6''); ^{13}C -NMR (125 MHz, CD_3OD) aglycone units: 98.9, 98.7 (C-1), 153.4 (C-3), 112.1 (C-4), 37.0 (C-5), 33.8 (C-6), 28.8 (C-7), 41.0, 41.1 (C-8), 44.3 (C-9), 69.5, 69.8 (C-10), 171.0 (C-11); glucose units: 100.8, 101.0 (C-1'), 74.5, 74.6 (C-2'), 77.9 (C-3'), 71.3, 71.5 (C-4'), 78.4 (C-5'), 62.8, 62.7 (C-6'); acyl unit: 119.5 (C-1''), 162.3 (C-2''), 121.0 (C-3''), 137.8 (C-4''), 117.6 (C-5''), 131.7 (C-6''), 170.6 (C-7''), 167.0 (C-8''). *Fagraea blumei* (Loganiaceae).¹²¹

412. Blumeoside D



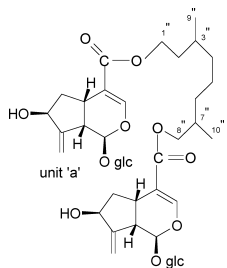
$C_{40}H_{50}O_{24}$; 914.2691; yellow amorphous powder; mp 156–158 °C; $[\alpha]_D^{20} -36.0^\circ$ ($c=4.0$, MeOH); UV (MeOH): 222 (4.25), 251 (3.68), 371 (3.43); 1H -NMR (200 MHz, CD_3OD) aglycone units: 5.18 (d, 7.4, H-1), 7.48 (s, H-3), 2.88 (m, H-5), 2.28 (m, H_a -6), 1.45 (m, H_b -6), 1.98 (m, H_a -7), 1.45 (m, H_b -7), 2.54 (m, H-8), 2.10 (m, H-9), 4.37 (m, H_2 -10); glucose units: 4.68 (d, 7.8, H-1'), 3.12 (m, H-2'), 3.15–3.40 (overlapped, H-3', 4', 5'), 3.65 (dd, 11.6, 5.4, H_a -6'), 3.87 (d, 11.6, H_b -6'); acyl unit: 7.50 (s, H-3'', 6''); ^{13}C -NMR (50 MHz, CD_3OD) aglycone units: 98.8 (C-1), 153.2 (C-3), 112.3 (C-4), 37.0 (C-5), 33.8 (C-6), 28.8 (C-7), 40.9 (C-8), 44.4 (C-9), 69.9 (C-10), 171.2 (C-11); glucose units: 100.9 (C-1'), 74.5 (C-2'), 78.0 (C-3')^a, 71.4 (C-4'), 78.4 (C-5')^a, 62.8 (C-6'); acyl unit: 120.1 (C-1''), 153.8 (C-2''), 118.8 (C-3''), 170.0 (C-7''), 8''). *Fagraea blumei* (Loganiaceae).¹²¹

413. Premnaodoroside D



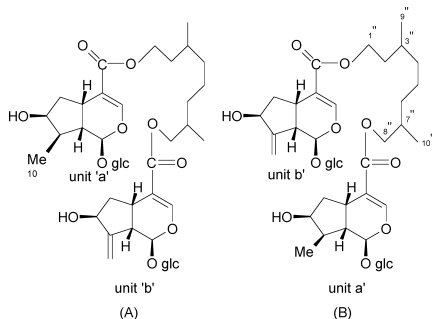
$C_{42}H_{66}O_{20}$: 890.4147; amorphous powder; $[\alpha]_D^{25} -89.4^\circ$ ($c=1.04$, MeOH); UV (MeOH): 238 (4.28); IR (KBr): 3350, 2900, 1680, 1630, 1455, 1375, 1280, 1185, 1150, 1070, 900, 765; 1H -NMR (400 MHz, CD_3OD): iridoid glucoside units: 5.51 (d, 4.0, H-1_a, 1_b), 7.38 and 7.40 (each s, H-3_a, 3_b), 3.05 (m, H-5_a, 5_b), 1.83 (m, H-6_a, 6_b), 2.08 (ddd, 18.0, 9.0, 5.0, H-6_a, 6_b), 3.83 (td, 10.0, 5.0, H-7_a, 7_b), 2.12 (br sep, H-8_a, 8_b), 2.59 (dt, 8.0, 4.0, H-9_a, 9_b), 1.04 and 1.05 (each d, 7.0, H₃-10_a, 10_b), 4.66 (d, 8.0, H-1'_a, 1'_b), 3.18 (dd, 9.0, 8.0, H-2'_a, 2'_b), 3.24 (t, 9.0, H-3'_a, 3'_b), 3.37 (t, 9.0, H-4'_a, 4'_b), H-5'_a, 5'_b—not assigned, 3.65 (dd, 12.0, 6.0, H-6'_a, 6'_b), 3.90 (dd, 12.0, 2.0, H-6'_a, 6'_b); monoterpene unit: 4.16 (t, 7.0, H₂-1''), 3.93 (dd, 11.0, 7.0, H-8''), 3.99 (dd, 11.0, 6.0, H-8''), 0.93 and 0.97 (each d, 6.0, H₃-9'', 10''); ^{13}C -NMR (100 MHz, CD_3OD): iridoid glucoside units: 96.2, 96.3 (C-1_a, 1_b), 152.3, 152.4 (C-3_a, 3_b), 114.2, 114.3 (C-4_a, 4_b), 31.0, 31.1 (C-5_a, 5_b), 41.3, 41.4 (C-6_a, 6_b), 79.2, 79.3 (C-7_a, 7_b), 45.2, 45.3 (C-8_a, 8_b), 43.0 (C-9_a, 9_b), 14.4 (C-10_a, 10_b), 169.0, 161.1 (C-11_a, 11_b), 99.8 (C-1'_a, 1'_b), 74.7 (C-2'_a, 2'_b), 78.4 (C-3'_a, 3'_b), 71.8 (C-4'_a, 4'_b), 78.0 (C-5'_a, 5'_b), 63.0 (C-6'_a, 6'_b); monoterpene unit: 63.8 (C-1''), 38.8 (C-2''), 31.1 (C-3''), 38.1 (C-4''), 25.2 (C-5''), 34.8 (C-6''), 33.9 (C-7''), 70.0 (C-8''), 18.9 (C-9''), 17.5 (C-10''). *Premna subscandens* (Verbenaceae).¹⁹⁶

414. Premnaodoroside E



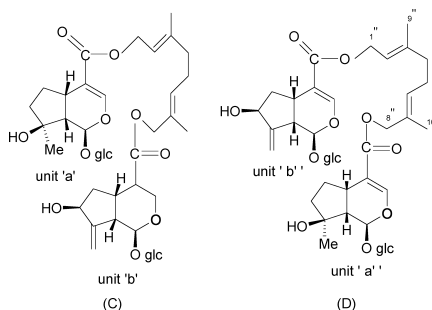
$C_{42}H_{62}O_{20}$: 886.3834; amorphous powder; $[\alpha]_D^{25} -28.9^\circ$ ($c=0.28$, MeOH); UV (MeOH): 206 (4.07), 236 (4.31); 1H -NMR (400 MHz, CD_3OD): iridoid glucoside units: 5.42 (d, 5.0, H-1_a, 1_b), 7.43, 7.45 (each d, 1.0, H-3_a, 3_b), 2.90 (m, H-5_a, 5_b), 2.00 (m, H₂-6_a, 6_b), 4.37 (br s, H-7_a, 7_b), 3.16 (br m, H-9_a, 9_b), 5.36 (br s, H₂-10_a, 10_b), 4.67, 4.68 (each d, 8.0, H-1'_a, 1'_b), 3.20 (dd, 9.0, 8.0, H-2'_a, 2'_b), 3.25 (t, 9.0, H-3'_a, 3'_b), 3.37 (t, 9.0, H-4'_a, 4'_b), H-5'_a, 5'_b—not assigned, 3.64 (dd, 12.0, 6.0, H-6'_a, 6'_b), 3.89 (dd, 12.0, 2.0, H-6'_a, 6'_b); monoterpene part: 4.17 (t, 6.0, H₂-1''), 3.94, 4.10 (each dd, 11.0, 6.0, H₂-8''), 0.93, 0.97 (each d, 6.0, H₃-9'', 10''); ^{13}C -NMR (100 MHz, CD_3OD): iridoid glucoside units: 95.7 (C-1_a, 1_b), 153.5 (C-3_a, 3_b), 111.9 (C-4_a, 4_b), 31.9, 32.0 (C-5_a, 5_b), 40.7, 40.8 (C-6_a, 6_b), 73.9 (C-7_a, 7_b), 152.8 (C-8_a, 8_b), 45.0 (C-9_a, 9_b), 113.2, 113.3 (C-10_a, 10_b), 168.9 (C-11_a, 11_b), 99.9 (C-1'_a, 1'_b), 74.8 (C-2'_a, 2'_b), 78.5 (C-3'_a, 3'_b), 71.7 (C-4'_a, 4'_b), 78.0 (C-5'_a, 5'_b), 62.9 (C-6'_a, 6'_b); monoterpene unit: 63.7 (C-1''), 36.8 (C-2''), 31.1 (C-3''), 25.2 (C-5''), 34.8 (C-6''), 34.0 (C-7''), 70.1 (C-8''), 20.0 (C-9''), 17.5 (C-10''). *Premna subscandens* (Verbenaceae).¹⁹⁶

415. Premnaodoroside F [isomeric mixture of A and B in ratio (1 : 1)]



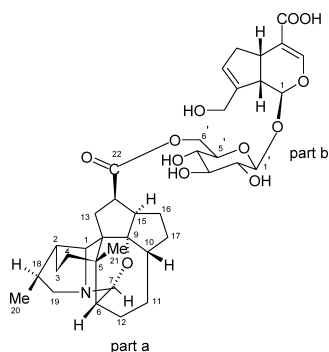
$C_{42}H_{64}O_{20}$: 888.3990; amorphous powder; $[\alpha]_D^{25} -69.1^\circ$ ($c=1.88$, MeOH); UV (MeOH): 236 (4.33); IR (KBr): 3350, 2900, 1680, 1630, 1450, 1375, 1280, 1150, 1070, 900, 850, 765; 1H -NMR (400 MHz, CD_3OD): iridoid glucoside units: 5.51 (d, 4.0, H-1_a, 1_b), 7.38 (s, H-3_a), 7.40 (d, 1.0, H-3_a), 3.05 (m, H-5_a, 5_b), 1.83 (m, H-6_a, 6_b), 2.08 (ddd, 12.0, 9.0, 5.0, H-6_a, 6_b), 3.83 (td, 10.0, 5.0, H-7_a, 7_b), 2.12 (br sep., 6.0, H-8_a, 8_b), 2.59 (dt, 8.0, 4.0, H-9_a, 9_b), 1.05, 1.04 (each d, 7.0, H₃-10_a, 10_b), 4.66 (d, 8.0, H-1'_a, 1'_b), 3.64 (dd, 12.0, 6.0, H-6'_a), 3.89, 3.90 (each dd, 12.0, 2.0, H-6'_a), 5.43 (d, 5.0, H-1_b, 1_b), 7.43, 7.45 (each d, 1.0, H-3_b, 3_b), 3.00 (m, H-5_b, 5_b), 2.00 (m, H₂-6_b, 6_b), 4.67, 4.68 (each d, 8.0, H-1'_b, 1'_b), 3.37, 3.38 (each t, 9.0, H-4'), H-5' appeared at the same values of sugar unit in a, a'; monoterpene unit: 4.15 (t, 6.0, H₂-1''), 3.92, 3.99 (each dd, 11.0, 6.0, H₂-8_a), 0.94, 0.97 (each d, 7.0, H₃-9'', 10''), 4.17 (t, 6.0, H₂-1''), 3.94, 4.10 (each dd, 11.0, 6.0, H₂-8_b), 0.94, 0.97 (each d, 7.0, H₃-9'', 10''); ^{13}C -NMR (100 MHz, CD_3OD): iridoid glucoside units: 95.2, 95.3 (C-1_a, 1_a), 152.3, 152.4 (C-3_a, 3_a), 114.2 (C-4_a, 4_a), 31.0, 31.1 (C-5_a, 5_a), 41.3, 41.4 (C-6_a, 6_a), 79.2 (C-7_a, 7_a), 45.2, 45.3 (C-8_a, 8_a), 43.0 (C-9_a, 9_a), 14.4 (C-10_a, 10_a), 169.0, 169.1 (C-11_a, 11_a), 99.7 (C-1'_a, 1'_a), 99.9 (C-1'_b, 1'_b), 74.7 (C-2'_a, 2'_a, 2'_b, 2'_b), 78.4 (C-3'_a, 3'_a, 3'_b, 3'_b), 71.7 (C-4'_a, 4'_a, 4'_b, 4'_b), 78.0 (C-5'_a, 5'_a, 5'_b, 5'_b), 62.9 (C-6'_a, 6'_a), 63.0 (C-6'_b, 6'_b); monoterpene unit: 6.35 (C-1''), 36.8 (C-2''), 31.0 (C-3''), 38.1 (C-4''), 25.2 (C-5''), 34.7 (C-6''), 33.9 (C-7''), 70.0 (C-8''), 19.9 (C-9''), 20.0 (C-9''), 17.5 (C-10''). *Premna subscandens* (Verbenaceae).¹⁹⁶

416. Premnaodoroside G (isomeric mixture of C and D)



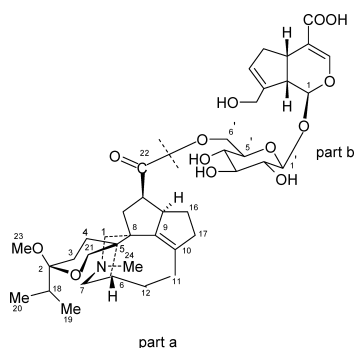
$C_{42}H_{60}O_{20}$: 884.3677; amorphous powder; $[\alpha]_D^{25} -46.6^\circ$ ($c=0.34$, MeOH); UV (MeOH): 207 (4.03), 236 (4.19); 1H -NMR (400 MHz, CD_3OD): iridoid glucoside units: 5.43 (d, 5.0, H-1_a, 1_a), 7.39 (s, H-3_a, 3_a), 1.32 (s, H₂-10_a, 10_a), 4.68 (d, 8.0, H-1'_a, 1'_a), 3.65 (dd, 12.0, 6.0, H-6'_a, 6'_a), 3.89 (dd, 12.0, 2.0, H-6'_a, 6'_a), 5.44 (d, 5.0, H-1_b, 1_b), 7.45 (d, 1.0, H-3_b, 3_b), 3.00 (m, H-5_b, 5_b), 1.99 (m, H₂-6_b, 6_b), 4.37 (v br s, H-7_b, 7_b), 5.36 (br s, H₂-10_b, 10_b), sugar Hs appeared at the same values; monoterpene unit: 1.67, 1.73 (each s, H₃-9'', 10''); ^{13}C -NMR (100 MHz, CD_3OD): iridoid glucoside units: 95.5 (C-1_a, 1_a), 152.0 (C-3_a, 3_a), 113.7 (C-4_a, 4_a), 32.1 (C-5_a, 5_a), 31.0, 30.0 (C-6_a, 6_a), 40.6 (C-7_a, 7_a), 80.6 (C-8_a, 8_a), 52.4 (C-9_a, 9_a), 24.7 (C-10_a, 10_a), 168.6 (C-11_a, 11_a), 99.9 (C-1'_a, 1'_a), 74.8 (C-2'_a, 2'_a), 78.4 (C-3'_a, 3'_a), 71.7 (C-4'_a, 4'_a), 78.1 (C-5'_a, 5'_a), 62.9 (C-6'_a, 6'_a), 96.7 (C-1_b, 1_b), 153.6 (C-3_b, 3_b), 111.9 (C-4_b, 4_b), 32.0 (C-5_b, 5_b), 40.0 (C-6_b, 6_b), 73.9 (C-7_b, 7_b), 152.8 (C-8_b, 8_b), 45.0 (C-9_b, 9_b), 113.2 (C-10_b, 10_b), 169.0 (C-11_b, 11_b), 99.9 (C-1'_b, 1'_b), 74.8 (C-2'_b, 2'_b), 78.5 (C-3'_b, 3'_b), 71.9 (C-4'_b, 4'_b), 78.1 (C-5'_b, 5'_b), 63.0 (C-6'_b, 6'_b); monoterpene: 61.8 (C-1''), 120.5 (C-2''), 142.7 (C-3''), 39.9 (C-4''), 25.9 (C-5''), 129.5 (C-6''), 132.1 (C-7''), 70.7 (C-8''), 18.5 (C-9''), 14.2 (C-10''). *Premna subscandens* (Verbenaceae).¹⁹⁶

417. Daphcalycinosidine A



$C_{38}H_{52}NO_{12}$ (M+H)⁺: 714.3489; colorless solid; mp 134–136 °C (MeOH); $[\alpha]_D^{22}$ –16.0° ($c=0.6$, MeOH); ¹H-NMR (400 MHz, CD₃OD) part a: 3.81 (d, 7.4, H-1), 2.34 (m, H-2), 1.71 and 1.63 (each m, H₂-3), 1.56 (m, H₂-4), 2.69 (br dd, 7.5, 7.5, H-6), 4.72 (br s, H-7), 2.32 (pent, 8.5, H-10), 1.77 and 1.61 (each, m, H₂-11), 2.5 (ddd, 13.1, 9.3, 9.3, H_a-12), 1.71 (m, H_b-12), 2.17 (dd, 13.2, 12.5, H_a-13), 1.85 (dd, 13.2, 7.0, H_b-13), 3.37 (ddd, 12.5, 11.0, 7.0, H-14), 2.83 (ddd, 11.0, 9.5, 9.5, H-15), 1.90 (m, H_a-16), 0.97 (dddd, 12.8, 12.8, 7.9, 6.9, H_b-16), 1.78 (m, H_a-17), 1.30 (m, H_b-17), 2.52 (m, H-18), 3.16 (dd, 9.4, 7.9, H_a-19), 2.85 (dd, 9.4, 9.4, H_b-19), 1.11 (d, 6.9, H₃-20), 1.22 (s, H₃-21); part b: 4.94 (d, 7.9, H-1), 7.25 (d, 1.3, H-3), 3.24 (ddd, 8.0, 8.0, 8.0, H-5), 2.88 (ddd, 15.5, 8.0, 8.0, H_a-6), 2.03 (ddd, 15.5, 8.0, 8.0, H_b-6), 5.77 (s, H-7), 2.69 (dd, 7.5, 7.5, H-9), 4.25 (dd, 12.3, 1.1, H_a-10), 4.20 (dd, 12.3, 1.7, H_b-10), 4.70 (d, 7.9, H-1'), 3.24 (dd, 9.1, 7.9, H-2'), 3.42 (dd, 9.1, 8.5, H-3'), 3.33 (dd, 9.5, 8.5, H-4'), 3.46 (ddd, 9.7, 6.0, 2.0, H-5'), 4.45 (dd, 11.9, 2.0, H_a-6'), 4.16 (dd, 11.9, 6.0, H_b-6'); ¹³C-NMR (100 MHz, CD₃OD) part a: 62.3 (C-1), 38.6 (C-2), 19.2 (C-3), 44.6 (C-4), 35.0 (C-5), 47.0 (C-6), 87.6 (C-7), 48.2 (C-8), 97.0 (C-9), 47.8 (C-10), 26.0 (C-11), 25.2 (C-12), 30.3 (C-13), 45.4 (C-14), 50.0 (C-15), 29.4 (C-16), 37.2 (C-17), 38.1 (C-18), 54.7 (C-19), 13.0 (C-20), 26.8 (C-21), 175.9 (C-22); part b: 98.1 (C-1), 148.8 (C-3), 118.9 (C-4), 38.0 (C-5), 40.3 (C-6), 128.7 (C-7), 145.2 (C-8), 47.0 (C-9), 61.7 (C-10), 176.1 (C-11), 100.2 (C-1'), 74.9 (C-2'), 77.6 (C-3'), 71.6 (C-4'), 75.6 (C-5'), 64.6 (C-6'). *Daphniphyllum calycinum* (Daphniphyllaceae).^{197,198}

418. Daphcalycinosidine B



$C_{40}H_{58}NO_{13}$ (M+H)⁺: 760.3908; colorless crystals; mp 201–202 °C (MeOH); $[\alpha]_D^{22}$ +6.0° ($c=0.3$, MeOH); ¹H-NMR (400 MHz, CD₃OD) part a: 3.12 (d, 13.0, H_a-1), 3.02 (d, 13.0, H_b-1), 1.75 (ddd, 14.0, 4.5, 4.5, H_a-3), 1.43 (ddd, 14.0, 4.5, 4.5, H_b-3), 1.98 (ddd, 13.7, 4.5, 4.0, H_a-4), 1.73 (m, H_b-4), 2.55 (m, H-6), 3.48 (dd, 13.5, 3.5, H_a-7), 3.39 (dd, 13.5, 5.5, H_b-7), 1.78 (m, H_a-11), 2.33 (m, H_b-11), 2.48 (m, H_a-12), 2.35 (m, H_b-12), 2.76 (dd, 15.5, 3.1, H_a-13), 1.75 (dd, 15.5, 9.0, H_b-13), 2.99 (ddd, 10.0, 9.0, 3.0, H-14), 3.62 (m, H-15), 1.90 (ddd, 10.8, 6.6, 2.4, H_a-16), 1.40 (ddd, 10.8, 8.4, 2.2, H_b-16), 2.65 (m, H_a-17), 2.38 (m, H_b-17), 2.08 (hept, 7.0, H-18), 0.94 (d, 7.0, H₃-19), 0.86 (d, 7.0, H₃-20), 4.09 (d, 12.5, H_a-21), 3.77 (dd, 12.5, 2.7, H_b-21), 3.20 (s, H₃-23), 2.84 (s, H₃-24); part b: 5.00 (d, 8.0, H-1), 7.43 (br d, 1.2, H-3), 3.20 (ddd, 8.0, 8.0, 8.0, H-5), 2.86 and 2.06 (each ddd, 15.0, 8.0, 8.4, H₂-6), 2.06 (ddd, 15.0, 8.0, 8.0, H_b-6), 5.80 (s, H-7), 2.70 (m, H-9), 4.26 (dd, 13.7, 1.0, H_a-10), 4.24 (dd, 13.7, 1.8, H_b-10), 4.71 (d, 7.9, H-1'), 2.23 (dd, 9.2, 7.9, H-2'), 3.40 (dd, 9.2, 9.0, H-3'), 3.30 (dd, 9.0, 9.0, H-4'), 3.48 (dd, 9.0, 6.4, 2.0, H-5'), 4.48 (dd, 12.0, 2.0, H_a-6'), 4.14 (dd, 12.0, 6.4, H_b-6'); ¹³C-NMR (100 MHz, CD₃OD) part a: 57.5 (C-1), 102.3 (C-2), 23.0 (C-3), 23.3 (C-4), 37.2 (C-5), 33.6 (C-6), 55.3 (C-7), 46.8 (C-8), 143.3 (C-9), 138.3 (C-10), 26.4 (C-11), 26.6 (C-12), 39.8 (C-13), 43.2 (C-14), 55.7 (C-15), 29.4 (C-16), 43.9 (C-17), 32.5 (C-18), 17.6 (C-19), 16.7 (C-20), 63.3 (C-21), 175.7 (C-22), 47.0 (C-23), 45.4 (C-24); part b: 98.2 (C-1), 151.8 (C-3), 114.5 (C-4), 37.3 (C-5), 40.1 (C-6), 128.9 (C-7), 145.0 (C-8), 46.9 (C-9), 61.6 (C-10), 172.0 (C-11), 100.0 (C-1'), 74.8 (C-2'), 77.6 (C-3'), 71.6 (C-4'), 75.8 (C-5'), 64.5 (C-6'). *Daphniphyllum calycinum* (Daphniphyllaceae).^{197,198}

Table 2. Alphabetical Index of the Iridoids Cited in Table 1

7β-Acetoxy-10-O-acetyl-8α-hydroxydecapetaloside (Compound-2)	120	Agnucastoside B (6'-O-(6,7-Dihydrofoliamenthyl)-mussaenosidic acid)	173
10-Acetoxy majoroside	272	Agnucastoside C (7-O-trans-p-Coumaroyl-6'-O-trans-caffeoyl-8-epi-loganic acid)	141
7-O-Acetyl-10-O-acetyloxylanin	281	Alatoside	2
6-O-Acetylajugol	11	Alboside I	143
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References

- Bruneton J., "Pharmacognosy, Phytochemistry and Medicinal Plants," Intercept Ltd., Hampshire, 1995, pp. 475–485.
- Foderaro T. A., Stermitz F. R., Hope H., *Tetrahedron Lett.*, **33**, 2953–2954 (1992).
- Boros C. A., Stermitz F. R., *J. Nat. Prod.*, **54**, 1173–1246 (1991).
- Ghisalberti E. L., *Phytomedicine*, **5**, 147–163 (1998).
- Taskova R., Evstatieva L., Handjieva N., Popov S., *Z. Naturforsch.*, **57c**, 42–50 (2002).
- Rymkiewicz A., *Monogr. Bot.*, **57**, 71–103 (1979).
- Mitova M. I., Anchev M. E., Handjieva N. V., Popov S. S., *Z. Naturforsch.*, **57c**, 226–234 (2002).
- Galindez J. de S., Matellano L. F., Lanza A. M. D., *Z. Naturforsch.*, **56c**, 513–520 (2001).
- El-Naggar L. J., Beal J. L., *J. Nat. Prod.*, **43**, 649–707 (1980).
- Boros C. A., Stermitz F. R., *J. Nat. Prod.*, **53**, 1055–1147 (1990).
- Cornforth J. W., *Chem. Britain*, **6**, 431–435 (1970).
- Al-Hazimi H. M. G., Alkhatlan H. Z., *J. Chem. Soc. Pakistan*, **18**, 336–357 (1996).
- Ismail L. D., El-Azizi M. M., Khalifa T. I., Stermitz F. R., *Phytochemistry*, **42**, 1223–1225 (1996).
- Damtoft S., Frederiksen L. B., Jensen S. R., *Phytochemistry*, **35**, 1259–1261 (1994).
- Kanchanapoom T., Kasai R., Yamasaki K., *Phytochemistry*, **60**, 769–771 (2002).
- Catalano S., Flamini G., Bilia A. R., Morelli I., Nicoletti M., *Phytochemistry*, **38**, 895–897 (1995).
- Poser G. L. V., Damtoft S., Schripsema J., Henriques A. T., Jensen S. R., *Phytochemistry*, **46**, 371–373 (1997).
- Bianco A., Guiso M., Martino M., Nicoletti M., Serafini M., Tomassini L., Mossa L., Poli F., *Phytochemistry*, **42**, 89–91 (1996).
- Ilieva E., Handjieva N., Popov S., *Z. Naturforsch.*, **47c**, 791–793 (1992).
- Zhang Y.-H., Yang L., Cheng D.-L., *Pharmazie*, **55**, 845–847 (2000).
- Zhang Y. H., Cheng D. L., *Chinese Chemical Lett.*, **11**, 319–322

- (2000).
- 22) Handjieva N., Tersieva L., Popov S., Evstatieva L., *Phytochemistry*, **39**, 925—927 (1995).
 - 23) Bianco A., Guiso M., Martino M., Nicoletti M., Serafini M., Tomassini L., *J. Nat. Prod.*, **60**, 366—367 (1997).
 - 24) Tasdemir D., Scapozza L., Zerbe O., Linden A., Calis I., Sticher O., *J. Nat. Prod.*, **62**, 811—816 (1999).
 - 25) Warashina T., Nagatani Y., Noro T., *Phytochemistry*, **65**, 2003—2011 (2004).
 - 26) Nakagawa H., Takaishi Y., Fujimoto Y., Duque C., Garzon C., Sato M., Okamoso M., Oshikawa T., Ahmed S. U., *J. Nat. Prod.*, **67**, 1919—1924 (2004).
 - 27) Harimantainaina L. R. R., Kasai R., Rakotovo M., Yamasaki K., *Natural Med.*, **55**, 187—92 (2001).
 - 28) Nass R., Rimpler H., *Phytochemistry*, **41**, 489—498 (1996).
 - 29) Boje K., Lechtenberg M., Nahrstedt A., *Planta Medica*, **69**, 820—825 (2003).
 - 30) Hannedouche S., Stanislas E., Moulis C., Fouraste I., *Phytochemistry*, **54**, 807—809 (2000).
 - 31) Bianco A., Guiso M., Pellegrini G., Nicoletti M., Serafini M., *Phytochemistry*, **44**, 1515—1517 (1997).
 - 32) Kim S. R., Lee K. Y., Koo K. A., Sung S. H., Lee N.-G., Kim J., Kim Y. C., *J. Nat. Prod.*, **65**, 1696—1699 (2002).
 - 33) Li Y.-M., Jiang S.-H., Gao W.-Y., Zhu D.-Y., *Phytochemistry*, **50**, 101—104 (1999).
 - 34) Hannedouche S., Collet I. J.-C., Fabre N., Stanislas E., Moulis C., *Phytochemistry*, **51**, 767—769 (1999).
 - 35) Skaltsounis A. L., Tsitsa-Tzardis E., Demetzos C., Harvala C., *J. Nat. Prod.*, **59**, 673—675 (1996).
 - 36) Magiatis P., Melliou E., Tsitsa E., Charvala C., Mitaku S., *Z. Naturforsch.*, **55c**, 667—669 (2000).
 - 37) Kirmizibekmez H., Akbay P., Sticher O., Calis I., *Z. Naturforsch.*, **58c**, 181—186 (2003).
 - 38) Su B. N., Ma L. P., Jia Z. J., *Planta Medica*, **64**, 720—723 (1998).
 - 39) Ronsted N., Gobel E., Franzyk H., Jensen S. R., Olsen C. E., *Phytochemistry*, **55**, 337—348 (2000).
 - 40) Damtoft S., Jensen S. R., Thorsen J., Molgard P., Olsen C. E., *Phytochemistry*, **36**, 927—929 (1994).
 - 41) Li Y., Changzeng W., Zhongjian J., *Phytochemistry*, **40**, 491—494 (1995).
 - 42) Klimek B., *Phytochemistry*, **43**, 1281—1284 (1996).
 - 43) Kanchanapoom T., Kasai R., Chumsri P., Hiraga Y., Yamasaki K., *Phytochemistry*, **58**, 333—336 (2001).
 - 44) Tasdemir D., Güner N. D., Perozzo R., Brun R., Donmez A. A., Calis I., Ruedi P., *Phytochemistry*, **66**, 355—362 (2005).
 - 45) Vesper T., Seifert K., *Phytochemistry*, **37**, 1087—1089 (1994).
 - 46) Yang X. D., Xi Mei S., Zhao J. F., Li G. P., Zhang H. B., Li L., *Chinese Chemical Lett.*, **14**, 936—938 (2003).
 - 47) Kirmizibekmez H., Calis I., Piacente S., Pizza C., *Helv. Chim. Acta*, **87**, 1172—1179 (2004).
 - 48) Calis I., Kirmizibekmez H., Tasdemir D., Ireland C. M., *Chem. Pharm. Bull.*, **50**, 678—680 (2002).
 - 49) Kirmizibekmez H., Calis I., Akbay P., Sticher O., *Z. Naturforsch.*, **58c**, 337—341 (2003).
 - 50) Helfrich E., Rimpler H., *Phytochemistry*, **50**, 619—627 (1999).
 - 51) Li J. X., Li P., Tezuka Y., Namba T., Kadota S., *Phytochemistry*, **48**, 537—542 (1998).
 - 52) Helfrich E., Rimpler H., *Phytochemistry*, **54**, 191—199 (2000).
 - 53) Miyase T., Mimatsu A., *J. Nat. Prod.*, **62**, 1079—1084 (1999).
 - 54) Yang X. D., Zhao J. F., Xi Mei S., Pu J. X., Zhang H. B., Li L., *Chinese Chemical Lett.*, **15**, 49—51 (2004).
 - 55) Yuan C. S., Xie W. D., Yang X. P., Jia Z. J., *Chinese Chemical Lett.*, **14**, 932—933 (2003).
 - 56) Hosny M., Rosazza J. P. N., *J. Nat. Prod.*, **61**, 734—742 (1998).
 - 57) Stermitz F. R., Abdel-Kader M. S., Foderaro T. A., Pomeroy M., *Phytochemistry*, **37**, 997—999 (1994).
 - 58) Kanchanapoom T., Ruchirawat S., Kasai R., Otsuka H., *Chem. Pharm. Bull.*, **52**, 980—982 (2004).
 - 59) Machida M., Ogawa M., Kikuchi M., *Chem. Pharm. Bull.*, **46**, 1056—1057 (1998).
 - 60) Fernandez L., Diaz A. M., Ollivier E., Faure R., Balansard G., *Phytochemistry*, **40**, 1569—1571 (1995).
 - 61) Sudo H., Ide T., Otsuka H., Hirata E., Takushi A., Takeda Y., *Phytochemistry*, **46**, 1231—1236 (1997).
 - 62) Machida K., Ando M., Yaoita Y., Kakuda R., Kikuchi M., *Chem. Pharm. Bull.*, **49**, 732—736 (2001).
 - 63) Kalpoutzakis E., Aligiannis N., Mitakou S., Skaltsounis A.-L., *J. Nat. Prod.*, **62**, 342—344 (1999).
 - 64) Nguyen A.-T., Fontaine J., Malonne H., Claeys M., Luhmer M., Duez P., *Phytochemistry*, **66**, 1186—1191 (2005).
 - 65) Giner R. M., Villalba M. L., Recio M. d. C., Manez S., Gray A. I., Rios J. L., *J. Nat. Prod.*, **61**, 1162—1163 (1998).
 - 66) Stevenson P. C., Simmonds M. S. J., Sampson J., Houghton P. J., Grice P., *Phytother. Res.*, **16**, 32—35 (2002).
 - 67) Harput U. S., Saracoglu I., Nagatsu A., Ogihara Y., *Chem. Pharm. Bull.*, **50**, 1106—1108 (2002).
 - 68) Warashina T., Nagatani Y., Noro T., *Phytochemistry*, **66**, 589—597 (2005).
 - 69) Harput U. S., Nagatsu A., Ogihara Y., Saracoglu I., *Z. Naturforsch.*, **58c**, 481—484 (2003).
 - 70) Kanchanapoom, Noiarsa P., Ruchirawat S., Kasai R., Otsuka H., *Chem. Pharm. Bull.*, **52**, 612—614 (2004).
 - 71) Sudo H., Ide T., Otsuka H., Hirata E., Takushi A., Takeda Y., *Phytochemistry*, **49**, 783—786 (1998).
 - 72) Schneider M. J., Green J. C., McPeak D., *Phytochemistry*, **46**, 1097—1098 (1997).
 - 73) Kaneko T., Ohtani K., Kasai R., Yamasaki K., Duc N. M., *Phytochemistry*, **45**, 907—910 (1997).
 - 74) Jia Q., Hong M.-F., Minter D., *J. Nat. Prod.*, **62**, 901—903 (1999).
 - 75) Iwagawa T., Yaguchi S., Hase T., *Phytochemistry*, **35**, 1369—1370 (1994).
 - 76) Yuan C.-S., Zhang Q., Xie W.-D., Yang X.-P., Jia Z.-J., *Pharmazie*, **58**, 428—430 (2003).
 - 77) Takeda Y., Matsumoto T., Oiso Y., Honda G., Tabata M., Fujita T., Otsuka H., Sezik E., Yesilada E., *J. Nat. Prod.*, **59**, 518—519 (1996).
 - 78) Ersoz T., Ziver Berkman M., Tasdemir D., Ireland C. M., Calis I., *J. Nat. Prod.*, **63**, 1449—1450 (2000).
 - 79) Stermitz F. R., Blokhin A., Poley C. S., Krull R. E., *Phytochemistry*, **37**, 1283—1286 (1994).
 - 80) Guiso M., Marra C., Piccioni F., Nicoletti M., *Phytochemistry*, **45**, 193—194 (1997).
 - 81) Otsuka H., *Phytochemistry*, **33**, 617—622 (1993).
 - 82) Yang H., Jiang B., Na Z., Guo Y. P., Sun H. D., *Chinese Chemical Lett.*, **11**, 231—234 (2000).
 - 83) Wei X. M., Zhu Q. X., Chen J. C., Cheng D. L., *Chinese Chemical Lett.*, **11**, 415—416 (2000).
 - 84) Takeda Y., Yagi T., Matsumoto T., Honda G., Tabata M., Fujita T., Shingu T., Otsuka H., Sezik E., Yesilada E., *Phytochemistry*, **42**, 1085—1088 (1996).
 - 85) Jia Z. J., Gao J. J., Liu Z. M., *Indian J. Chem.*, **33B**, 460—464 (1994).
 - 86) Sridhar C., Subbaraju G. V., Venkateswarlu Y., Venugopal R. T., *J. Nat. Prod.*, **67**, 2012—2016 (2004).
 - 87) Tomita H., Mouri Y., *Phytochemistry*, **42**, 239—240 (1996).
 - 88) Damtoft S., Franzyk H., Jensen S. R., *Phytochemistry*, **45**, 743—750 (1997).
 - 89) Carbonezi C. A., Martins D., Young M. C. M., Lopes M. N., Furlan M., Filho E. R., Bolzani V. da S., *Phytochemistry*, **51**, 781—785 (1999).
 - 90) Itoh A., Tanahashi T., Tabata M., Shikata M., Kakite M., Nagai M., Nagakura N., *Phytochemistry*, **56**, 623—630 (2001).
 - 91) Tanaka N., Tanaka T., Fujioka T., Fujii H., Mihashi K., Shimomura K., Shimomura K., Ishimaru K., *Phytochemistry*, **57**, 1287—1291 (2001).
 - 92) Kuruuzum-uz A., Ströck K., Demirezer L. O., Zeeck A., *Phytochemistry*, **63**, 959—964 (2003).
 - 93) Zhang X., Xu Q., Xiao H., Liang X., *Phytochemistry*, **64**, 1341—1344 (2003).
 - 94) Harput U. S., Varel M., Nagatsu A., Saracoglu I., *Phytochemistry*, **65**, 2135—2139 (2004).
 - 95) Calis I., Hosny M., Yuruker A., Wright A. D., Sticher O., *J. Nat. Prod.*, **57**, 494—500 (1994).
 - 96) Otsuka H., Kashima N., Nakamoto K., *Phytochemistry*, **42**, 1435—1438 (1996).
 - 97) Bergeron C., Marston A., Gauthier R., Hostettmann K., *Phytochemistry*, **44**, 633—637 (1997).
 - 98) Wang S.-S., Zhao W.-J., Han X.-W., Liang X.-M., *Chem. Pharm. Bull.*, **53**, 674—676 (2005).
 - 99) Calis I., Hosny M., Yuruker A., *Phytochemistry*, **37**, 1083—1085

- (1994).
- 100) Poser G. L. V., Schripsema J., Olsen C. E., Henriques A. T., Jensen S. R., *Phytochemistry*, **49**, 1471—1473 (1998).
 - 101) Fauvel M.-T., Melow A. B., Moulis C., Gleye J., Jensen S. R., *Phytochemistry*, **38**, 893—894 (1995).
 - 102) Taskova R., Handjieva N., Peev D., Popov S., *Phytochemistry*, **49**, 1323—1327 (1998).
 - 103) Rastrelli L., Caceres A., Morales C., Simone F. De, Aquino R., *Phytochemistry*, **49**, 1829—1832 (1998).
 - 104) Kanchanapoom T., Kasai R., Yamasaki K., *Phytochemistry*, **61**, 461—464 (2002).
 - 105) Kirmizibekmez H., Piacente S., Pizza C., Donmez A. A., Calis I., *Z. Naturforsch.*, **59b**, 609—613 (2004).
 - 106) Chaari A., Jannet H. B., Mighri Z., Lallemand M.-C., Kunesch N., *J. Nat. Prod.*, **65**, 618—620 (2002).
 - 107) Ersoz T., Ivancheva S., Akbay P., Sticher O., Calis I., *Z. Naturforsch.*, **56c**, 695—698 (2001).
 - 108) Kanchanapoom T., Kasai R., Yamasaki K., *Phytochemistry*, **58**, 337—341 (2001).
 - 109) Sharma M., Garg H. S., *Indian J. Chem.*, **35B**, 459—462 (1996).
 - 110) Calis I., Kirmizibekmez H., Sticher O., *J. Nat. Prod.*, **64**, 60—64 (2001).
 - 111) Negi S., Shukla V., Rawat M. S. M., Pant G., Nagatsu A., *Indian J. Chem.*, **43B**, 1805—1806 (2004).
 - 112) Ling S.-K., Komorita A., Tanaka T., Fujioka T., Mihashi K., Kouno I., *Chem. Pharm. Bull.*, **50**, 1035—1040 (2002).
 - 113) Kanchanapoom T., Kasai R., Yamasaki K., *Phytochemistry*, **59**, 551—556 (2002).
 - 114) Taskova R. M., Gotfredsen C. H., Jensen S. R., *Phytochemistry*, **66**, 1440—1447 (2005).
 - 115) Jensen S. R., Olsen C. E., Rahn K., Rasmussen J. H., *Phytochemistry*, **42**, 1633—1636 (1996).
 - 116) Shaker K. H., Elgamel M. H. A., Seifert K., *Z. Naturforsch.*, **56c**, 965—968 (2001).
 - 117) Mitova M., Handjieva N., Anchev M., Popov S., *Z. Naturforsch.*, **54c**, 488—491 (1999).
 - 118) Ling S.-K., Kamorita A., Tanaka T., Fujioka T., Mihashi K., Kouno I., *J. Nat. Prod.*, **65**, 656—660 (2002).
 - 119) Kim Y. L., Chin Y.-W., Kim J., Park J. H., *Chem. Pharm. Bull.*, **52**, 1356—1357 (2004).
 - 120) Bolzani V. Da S., Izumisawa C. M., Young M. C. M., Trevisan L. M. V., Kingston D. G. I., Gunatilaka A. L., *Phytochemistry*, **46**, 305—308 (1997).
 - 121) Cuender M., Hostettmann K., Potterat O., Dyatmiko W., *Helv. Chim. Acta*, **80**, 1142—1152 (1997).
 - 122) Peng J.-N., Feng X.-Z., Liang X.-T., *J. Nat. Prod.*, **62**, 611—612 (1999).
 - 123) Quang D. N., Hashimoto T., Tanaka M., Dung N. X., Asakawa Y., *Phytochemistry*, **60**, 505—514 (2002).
 - 124) Tanahashi T., Shimada A., Nagakura N., Inoue K., Ono M., Fujita T., Chen C.-C., *Chem. Pharm. Bull.*, **43**, 729—733 (1995).
 - 125) Rodriguez V., Schripsema J., Jensen S. R., *Phytochemistry*, **45**, 1427—1429 (1997).
 - 126) Tanahashi T., Shimada A., Kai M., Nagakura N., Inoue K., Chen C.-C., *J. Nat. Prod.*, **59**, 798—800 (1996).
 - 127) Takeda Y., Ooiso Y., Masuda T., Honda G., Otsuka H., Sezik E., Yesilada E., *Phytochemistry*, **49**, 787—791 (1998).
 - 128) Itoh A., Kumashiro T., Yamaguchi M., Nagakura N., Mizushima Y., Nishi T., Tanahashi T., *J. Nat. Prod.*, **68**, 848—852 (2005).
 - 129) Machida K., Unagami E., Ojima H., Kikuchi M., *Chem. Pharm. Bull.*, **51**, 883—884 (2003).
 - 130) Machida K., Kaneko A., Hosogai T., Kakuda R., Yaoita Y., Kikuchi M., *Chem. Pharm. Bull.*, **50**, 493—497 (2002).
 - 131) Kumar V., Chand R., Auzi A., Ikeshiro Y., Sarker S. D., *Pharmazie*, **58**, 668—670 (2003).
 - 132) Krull R. E., Stermitz F. R., *Phytochemistry*, **49**, 2413—2415 (1998).
 - 133) Ayers S., Sneden A. T., *J. Nat. Prod.*, **65**, 1621—1626 (2002).
 - 134) Kamel M. S., Mohamed K. M., Hassanean H. A., Ohtani K., Kasai R., Yamasaki K., *Phytochemistry*, **55**, 353—357 (2000).
 - 135) Delazar A., Byres M., Gibbons S., Kumarasamy Y., Modarresi M., Nahar L., Shoeb M., Sarker S. D., *J. Nat. Prod.*, **67**, 1584—1587 (2004).
 - 136) Aboutabl E. A., Meselhy M. R., Afifi M. S., *Pharmazie*, **57**, 646—647 (2002).
 - 137) Takeda Y., Matsumura H., Masuda T., Honda G., Otsuka H., Takaishi Y., Sezik E., Yesilada E., *Phytochemistry*, **53**, 931—935 (2000).
 - 138) Alipieva K. I., Jensen S. R., Franzyk H., Handjieva N. V., Evstatieva L. N., *Z. Naturforsch.*, **55c**, 137—140 (2000).
 - 139) Takeda Y., Morimoso Y., Matsumoto T., Honda G., Tabata M., Fujita T., Otsuka H., Sezik E., Yesilada E., *J. Nat. Prod.*, **58**, 1217—1221 (1995).
 - 140) Takeda Y., Morimoto Y., Matsumoto T., Ogimi C., Hirata E., Takushi A., Otsuka H., *Phytochemistry*, **39**, 829—833 (1995).
 - 141) Schuquel I. T. A., Malheiros A., Sarragiotto M. H., Vidotti G. J., *Phytochemistry*, **49**, 2409—2411 (1998).
 - 142) Kirmizibekmez H., Calis I., Perozzo R., Brun R., Donmez A. A., Linden A., Ruedi P., Tasdemir D., *Planta Medica*, **70**, 711—717 (2004).
 - 143) Suksamrarn S., Wongkrajang K., Kirtikara K., Suksamrarn A., *Planta Medica*, **69**, 877—879 (2003).
 - 144) Calis I., Kirmizibekmez H., Ersoz T., Donmez A. A., Gotfredsen C. H., Jensen S. R., *Z. Naturforsch.*, **60b**, 1295—1298 (2005).
 - 145) Chen J. L., Blanc P., Stoddart C. A., Bogan M., Rozhon E. J., Parkinson N., Ye Z., Cooper R., Balick M., Nanakorn W., Kernan M. R., *J. Nat. Prod.*, **61**, 1295—1297 (1998).
 - 146) Tuntiwachwuttikul P., Pancharoen O., Taylor W. C., *Phytochemistry*, **49**, 163—166 (1998).
 - 147) Sang S., He K., Liu G., Zhu N., Wang M., Jhoo J.-W., Zheng Q., Dong Z., Ghai G., Rosen R. T., Ho C. T., *Tetrahedron Lett.*, **42**, 1823—1825 (2001).
 - 148) Damtoft S., *Phytochemistry*, **36**, 373—375 (1994).
 - 149) Velazquez-Fiz M., Diaz-Lanza A. M., Matellano L. F., *Pharmaceutical Biol.*, **38**, 268—270 (2000).
 - 150) Ishiguro K., Yamaki M., Tagaki S., *J. Nat. Prod.*, **46**, 532—535 (1983).
 - 151) Miyagoshi M., Amagaya S., Ogihara Y., *Planta Medica*, **53**, 462—464 (1987).
 - 152) Otsuka H., *Natural Med.*, **56**, 59—62 (2002).
 - 153) Abe F., Chen R.-F., Yamauchi T., Ohashi H., *Chem. Pharm. Bull.*, **43**, 499—500 (1995).
 - 154) Abe F., Yamauchi T., Yahara S., Nohara T., *Phytochemistry*, **38**, 793—794 (1995).
 - 155) Schwarz B., Wray V., Proksch P., *Phytochemistry*, **42**, 633—636 (1996).
 - 156) Taskova R., Handjieva N., Evstatieva L., Popov S., *Phytochemistry*, **52**, 1443—1445 (1999).
 - 157) Damtoft S., Falkesgaard E., Jensen S. R., *Phytochemistry*, **35**, 1367—1368 (1994).
 - 158) Krull R. E., Stermitz F. R., Franzyk H., Jensen S. R., *Phytochemistry*, **49**, 1605—1608 (1998).
 - 159) Franzyk H., Jensen S. R., Stermitz F. R., *Phytochemistry*, **49**, 2025—2030 (1998).
 - 160) Machida K., Takehara E., Kobayashi H., Kikuchi M., *Chem. Pharm. Bull.*, **51**, 1417—1419 (2003).
 - 161) Su B.-N., Pawlus A. D., Jung H.-A., Keller W. J., McLaughlin J. L., Kinghorn A. D., *J. Nat. Prod.*, **68**, 592—595 (2005).
 - 162) Handjieva N., Mitova M., Anchev M., Popov S., *Phytochemistry*, **43**, 625—628 (1996).
 - 163) Singh K. L., Roy R., Srivastava V., Tandon J. S., Mishra A., *J. Nat. Prod.*, **58**, 1562—1564 (1995).
 - 164) Fukuyama Y., Minoshima Y., Kishimoto Y., Chen I.-S., Takahashi H., Esumi T., *J. Nat. Prod.*, **67**, 1833—1838 (2004).
 - 165) Ling S.-K., Tanaka T., Kouno I., *J. Nat. Prod.*, **64**, 796—798 (2001).
 - 166) Franzyk H., Jensen S. R., Olsen C. E., *J. Nat. Prod.*, **64**, 632—633 (2001).
 - 167) Takeda Y., Kiba Y., Masuda T., Otsuka H., Honda G., Tagawa M., Sezik E., Yesilada E., *Chem. Pharm. Bull.*, **47**, 1433—1435 (1999).
 - 168) Tomassini L., Foddai S., Nicoletti M., Cometa M. F., Palazzini G., Galeffi C., *Phytochemistry*, **46**, 901—905 (1997).
 - 169) Tomassini L., Cometa M. F., Foddai S., Nicoletti M., *Phytochemistry*, **38**, 423—425 (1995).
 - 170) Tomassini L., Brkic D., Foddai S., Nicoletti M., *Phytochemistry*, **44**, 751—753 (1997).
 - 171) Tomassini L., Cometa M. F., Foddai S., Nicoletti M., *Planta Medica*, **65**, 195 (1999).
 - 172) Tomassini L., Brkic D., *Planta Medica*, **63**, 485—486 (1997).
 - 173) Kuruzum-uz A., Guvenalp Z., Demirezer L. O., Bergere I., Ströck K., Zeeck A., *Phytochemistry*, **61**, 937—941 (2002).

- 174) Tomassini L., Gao J., Serafini M., Nicoletti M., *Nat. Prod. Res.*, **19**, 667—671 (2005).
- 175) Siddiqui B. S., Naeed A., Begum S., Siddiqui S., *Phytochemistry*, **37**, 769—771 (1994).
- 176) Wei X., Xie H., Ge X., Zhang F., *Phytochemistry*, **53**, 837—840 (2000).
- 177) Sang S., Cheng X., Zhu N., Wang M., Jhoo J.-W., Stark R. E., Badmaev V., Ghai G., Rosen R. T., Ho C.-T., *J. Nat. Prod.*, **64**, 799—800 (2001).
- 178) Cimanga K., Hermans N., Apers S., Miert S. V., Heuvel H. V. d., Claeys M., Pieters L., Vlietinck A., *J. Nat. Prod.*, **66**, 97—102 (2003).
- 179) Ono M., Ito Y., Kubo S., Nohara T., *Chem. Pharm. Bull.*, **45**, 1094—1096 (1997).
- 180) Machida K., Hishinuma E., Kikuchi M., *Chem. Pharm. Bull.*, **52**, 618—621 (2004).
- 181) Dai J.-Q., Liu Z.-L., Yang L., *Phytochemistry*, **59**, 537—542 (2002).
- 182) Guo S.-J., Gao L.-M., Cheng D.-L., *Pharmazie*, **56**, 178—180 (2001).
- 183) Mitova M., Handjieva N., Spassov S., Popov S., *Phytochemistry*, **42**, 1227—1229 (1996).
- 184) Kitajima M., Urano A., Kogure N., Takayama H., Aimi N., *Chem. Pharm. Bull.*, **51**, 1211—1214 (2003).
- 185) Li Y., Ishibashi M., Satake M., Oshima Y., Ohizumi Y., *Chem. Pharm. Bull.*, **51**, 1103—1105 (2003).
- 186) Takenaka Y., Okazaki N., Tanahashi T., Nagakura N., Nishi T., *Phytochemistry*, **59**, 779—787 (2002).
- 187) Kouno I., Koyama I., Jiang Z.-H., Tanaka T., Yang D.-M., *Phytochemistry*, **40**, 1567—1568 (1995).
- 188) Takeda Y., Shimidzu H., Mizuno K., Inouchi S., Masuda T., Hirata E., Shinzato T., Aramoto M., Otsuka H., *Chem. Pharm. Bull.*, **50**, 1395—1397 (2002).
- 189) Otsuka H., *Phytochemistry*, **39**, 1111—1114 (1995).
- 190) Calis I., Yuruker A., Ruegger H., Wright A. D., Sticher O., *Phytochemistry*, **38**, 163—165 (1995).
- 191) Otsuka H., *J. Nat. Prod.*, **57**, 357—362 (1994).
- 192) Magiatis P., Skaltsounis A.-L., Tillequin F., Seguin E., Cosson J.-P., *Phytochemistry*, **60**, 415—418 (2002).
- 193) Hamerski L., Furlan M., Silva D. H. S., Cavaleiro A. J., Eberlin M. N., Tomazela D. M., Bolzani V. da S., *Phytochemistry*, **63**, 397—400 (2003).
- 194) Park A., Kim H. J., Lee J. S., Woo E.-R., Park H., Lee Y. S., *J. Nat. Prod.*, **65**, 1363—1366 (2002).
- 195) Arnold U. W., Zidorn C., Ellmerer E. P., Stuppner H., *Z. Naturforsch.*, **57c**, 969—975 (2002).
- 196) Sudo H., Takushi A., Hirata E., Ide T., Otsuka H., Takeda Y., *Phytochemistry*, **52**, 1495—1499 (1999).
- 197) El Bitar H., Nguyen V. H., Gramain A., Sevenet T., Bodo B., *Tetrahedron Lett.*, **45**, 2027—2028 (2004).
- 198) El Bitar H., Nguyen V. H., Gramain A., Sevenet T., Bodo B., *Tetrahedron Lett.*, **45**, 515—518 (2004).
- 199) Mandal S., Mukhopadhyay S., *Indian J. Chem.*, **43B**, 1023—1025 (2004).
- 200) Inouye H., Uesato S., *Prog. Chem. Org. Nat. Prod.*, **50**, 169—236 (1986).
- 201) Jensen, S. R., “Ecological Chemistry and Biochemistry of Plant Terpenoids,” ed. by Harborne J. B., Tomas-Barberan F. A., Clarendon Press, Oxford, 1991, pp. 133—158.
- 202) Kocsis A., Szabo L., Tetenyi P., *F. E. C. S. Int. Conf. Biotech. Biol. Act. Nat. Prod. Proc.*, **3rd**, **4**, 131 (1987).