Review

Naturally Occurring Secoiridoids and Bioactivity of Naturally Occurring Iridoids and Secoiridoids. A Review, Part 2

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Naturally occurring new secoiridoids published during 1994—2005 are reviewed with available physical and spectral data: mp, $[\alpha]_D$, UV, IR, ^{1}H- and ^{13}C-NMR and plant source. The works on biological and pharmacological activity of naturally occurring iridoids and secoiridoids reported during 1998—2005 are also reviewed. Bioactivities like antiallergic, antiarthritis, antibacterial, anticancer, anticoagulant, anticomplement, antifungal, antiinflammatory, antioxidative, antiprotozoal, antispasmodic, antiviral, immunomodulatory, neuroprotective, nerve growth factor potentiating and wound healing activities are highlighted.

Key words secoiridoid; physical data; spectral data; plant source; iridoid; secoiridoid; bioactivity

This is a second part of a review[1] and is mainly a compilation of new secoiridoids reported in the literature during 1994—2005 as well as a high-light of biological and pharmacological activity of iridoids and secoiridoids published during 1998——2005. The earlier first part of review[1] included new naturally occurring iridoids (glycosides, aglycones, derivatives and dimers) reported during 1994—2005.

Secoiridoids are monoterpenoids based on the 7,8-secocyclopenta[c]-pyranoid skeleton and represented by **1a**. They are possibly derived in plants from iridoid, loganin **1b** by oxidative cleavage with redox enzyme to **1c** and then undergo various secondary modifications of the basic skeleton namely, epoxidation, oxidation, hydroxylation and esterification of the generated hydroxyl groups leading a group of compounds which constitute the class. The main aim of this review is for rapid identification of isolated secoiridoids by comparison of spectral data as well as to draw attention of the natural product chemists for evaluation of biological and pharmacological activity of the isolated iridoids and secoiridoids in order to justify the use of medicinal plants containing these metabolites in folk medicines. In certain plants, the isolated metabolites showed biological activities other than the use of the concerned plants in traditional system of medicine. The high-light of pharmacological activity may possibly draw the attention of the synthetic chemists for design of new drugs using known iridoids as raw materials.

A number of review articles on plant secoiridoids are available. Listings of naturally occurring secoiridoids together with spectroscopic data and plant source (review of El-Naggar and Beal covering the literature through January, 1980[2] and of Boros and Stermitz covering the literature through December, 1989[3]), and without spectroscopic data (review of Hazimi and Alkhathlan covering through December, 1993[4]) are available. The reviews on biological activity of plant iridoids, namely of Sticher, covering the works reported up to 1976,[5] of Ghisalberti and of Mandal *et al.* covering the literature up to a part of 1997[6,7] are also available.

Secoiridoids are listed in Table 1 in a fashion similar to that of the Boros and Stermitz review.[3] All the new secoiridoids are arranged in four groups. Group 1 contains simple secoiridoids; whereas group 2 contains terpene-conjugated secoiridoids; group 3 contains aromatic conjugated secoiridoids and group 4 contains bis-, tris- and tetrakis-secoiridoids. The oxidation state of C-10 and C-11 guides the arrangement of compounds in each group except group 4. The available data for each compound were listed in the following order: name; structure; molecular formula; calculated molecular weight as per atomic weight of most abundant isotopic atoms of C, H, O, *etc.*; melting point (°C); optical rotation, $[\alpha]_D$ (with concentration and solvent); UV (solvent, λ_{max} in nm, $\log \varepsilon$); IR (medium, ν_{max} in cm^{-1}); ^{1}H-NMR (spectrometer frequency, solvent); chemical shifts (in δ, ppm starting with H-1 and listed in order) with multiplicities, coupling constants in Hz, assignments; ^{13}C-NMR (spectrometer frequency, solvent) chemical shifts (in δ, ppm, starting with C-1 and listed in order) with assignments; plant source (family); reference(s). The ^{1}H-NMR data have been rounded to the second decimal point and the ^{13}C-NMR data to the first decimal point. Assignments with the same superscript may be interchanged. MS data were omitted because in most cases the fragment mass ions are not diagnostic. Data for derivatives were not listed unless the derivative rather than the free compound isolated in free state.

Numbering of secoiridoid skeleton and of the most com-

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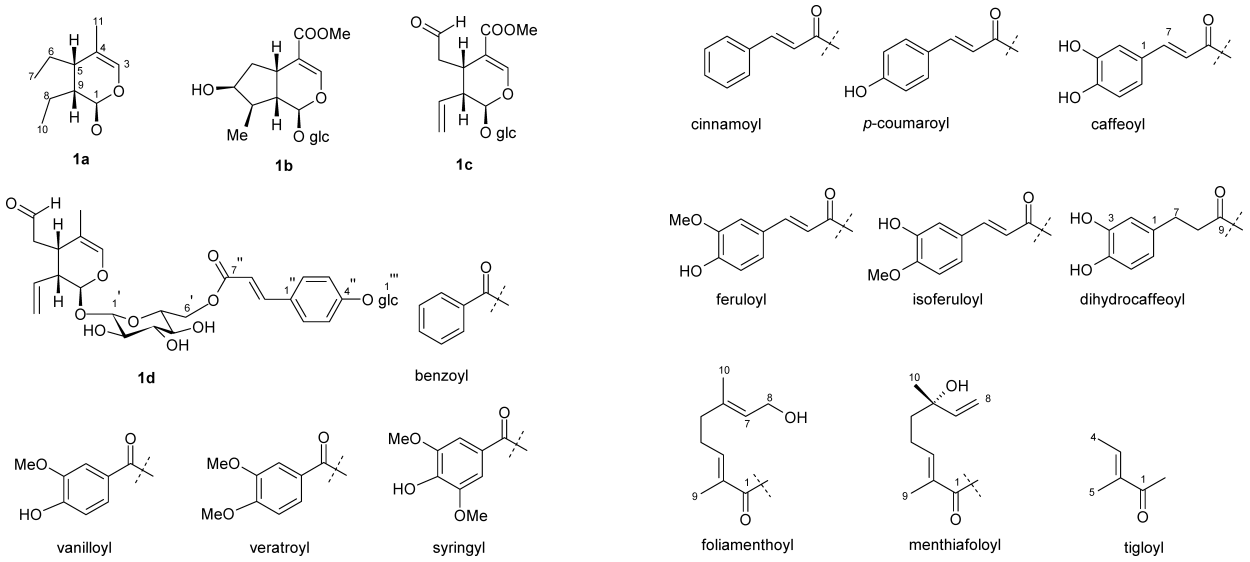


Fig. 1

mon functionalities is given in Fig. 1. The sugar on the C-1 carbon of the aglycone moiety is given the single prime (′) designation, while other substituents are designated as double prime (″), triple prime (‴), *etc.*, according to their substitution position on the main secoiridoid skeleton, except in cases of substituents on other substituents. The designation of substituents on other sustituents is done by succeeded primes; for instance, a *p*-coumaroyl unit on sugar unit at C-1 will be designated double prime and a sugar unit on *p*-coumaroyl unit will be designated as triple prime (*e.g.* **1d**). For bis-, tris- and tetrakis-secoiridoids, the monomeric units are designated as parts a, b, c and d and then these units are numbered as per usual numbering. Cinnamoyl, coumaroyl, caffeoyl, feruloyl, isoferuloyl groups are in *trans*-configuration unless otherwise indicated. Some abbreviations used in representation of structures are: glc: β-D-glucopyranosyl; rha: α-L-rhamnopyranosyl; api: β-D-apiofuranosyl; Me: methyl; OMe: methoxy. Suspected errors in a numbering of a monomeric unit and in multiplicity of proton coupling were not corrected unless there was some ambiguity in the numbering or multiplicity of proton coupling for a particular compound was observed. All the listed compounds in Table 1 are listed alphabetically in Table 2.

In spite of exhaustive efforts, some new secoiridoids 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 of new secoiridoids reported during the period of the review.

Biological and Pharmacological Activity of Naturally Occurring Iridoids and Seco-iridoids

At present a good number of plant extracts containing iridoids/seco-iridoids are used as bitter tonics, antiseptic, sedatives, febrifuges, cough medicines, cytotoxic remedies for skin diseases and as hypotensives. This fact encouraged for extensive investigations of bioactivity of the isolated iridoids and seco-iridoids from these plant extracts. The study of biological and pharmacological activity has revealed that both iridoids and seco-iridoids exhibit a wide range of bioactivity. The earlier review articles on biological and pharmacological activity of iridoids and secoiridoids highlighted the published works reported up to 1997, and hence in the present review, the results on the bioactivity of naturally occurring iridoids and seco-iridoids that have been published between 1998—2005 are considered. Only the papers where pharmacological activity of individual compounds or standardized mixture of compounds isolated from plant extracts have been reported are considered in this review.

a. Antiallergic Activity The seco-iridoids, hydramaroside A (**65**) and hydramaroside B (**66**) isolated from the leaves of *Hydrangea macrophylla* Seringe var. *thunbergii* Makino (Saxifragaceae) showed inhibitory effect on the histamine release from rat mast cells induced by antigen-antibody reaction with inhibition % of 9.1 and 21.3, respectively at a concentration of 10^{-5} M.[40]

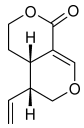
b. Anti-arthritic Activity In Europe, the roots (tubers) of Devil's Claw, *Harpagophytum procumbens* (Burch) DC (Harpagophyti radix) is mainly used for the supportive treatment of inflammatory and degenerative diseases such as, osteoarthritis, low back pain and rheumatic complaints.[70] This fact encouraged Boje *et al.* for the clinical trial of the aqueous root extract of the plant against human neutrophile elastase and observed an *in vitro* inhibition activity (IC_{50}: 542 μg/ml). These authors isolated ten compounds from the aqueous root extract of the plant. Among the isolated compounds two iridoids namely, 8-*p*-coumaroylharpagide (**234**) and pagoside (**235**) inhibited the enzyme, human neutrophile elastase with an IC_{50} of 179 μg/ml (331 μM) and 154 μg/ml (260 μM).[71] An increased activity of the enzyme destroys cartilage tissue and other matrix proteins and hence causes arthritis and rheumatism. Therefore, inhibitors of elastase activity could help in the treatment of arthritis and rheumatism. This biopharmaceutical quality of the root extract has been proved by clinical study on the treatment of osteoarthiritis pain by Chrubasik *et al.*[72,73]

c. Anti-inflammatory Activity *Patrinia saniculaefolia* Hemsley (Valerianaceae) is a perennial herb and endemic in Korea. The roots of this plant and other species of this genus have been used in Korean traditional medicine for treatment of various diseases including inflammation and edema, ap-

Table 1

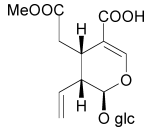
Group 1: Simple Secoiridoids

1. Secostrychnosin



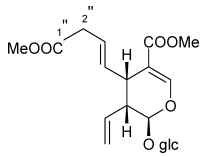
$C_{10}H_{12}O_3$: 180.0786; colorless oil; $[\alpha]_D^{23}$ −31.3° (c=0.06, $CHCl_3$); UV (MeOH): 204 (3.94), 248 (4.18); IR (neat): 1710; ^{1}H-NMR (400 MHz, $CDCl_3$): 4.09 (t, 11.4, H-1), 4.26 (dd, 11.4, 4.4, H-1), 7.73 (d, 2.0, H-3), 2.42 (m, H-5), 1.45 (m, H-6), 2.05 (m, H-6), 4.01 (br dd, 11.2, 2.2, H-7), 4.40 (ddd, 11.2, 4.4, 2.2, H-7), 5.53 (ddd, 17.6, 10.0, 8.4, H-8), 2.28 (dddd, 11.4, 8.4, 4.4, 2.0, H-9), 5.26 (dd, 10.2, 2.0, H-10), 5.29 (dd, 17.6, 2.0, H-10); ^{13}C-NMR (100 MHz, $CDCl_3$): 67.1 (C-1), 157.0 (C-3), 103.1 (C-4), 34.5 (C-5), 26.1 (C-6), 71.1 (C-7), 133.9 (C-8), 43.9 (C-9), 119.9 (C-10), 169.0 (C-11). *Strychnos cathayensis* (Loganiaceae).[8)]

2. Secologanoside-7-methyl ester



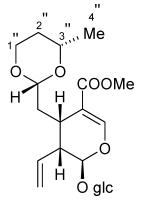
$C_{17}H_{24}O_{11}$: 404.1318; amorphous powder; $[\alpha]_D^{25}$ −106.1° (c=0.337, MeOH); UV (MeOH): 229 (3.97); ^{1}H-NMR (400 MHz, CD_3OD): 5.47 (d, 4.1, H-1), 7.48 (d, 1.7, H-3), 3.30 (m, H-5), 2.32 (dd, 16.1, 8.8, H-6), 2.94 (dd, 16.1, 5.4, H-6), 5.64 (ddd, 17.0, 10.5, 9.5, H-8), 2.76 (m, H-9), 5.22 (m, H_2-10), 3.63 (s, MeO-7), 4.66 (d, 7.8, H-1′), 3.21 (dd, 9.1, 7.8, H-2′), 3.33 (m, H-3′, 4′, 5′), 3.65 (m, H-6′), 3.89 (dd, 12.0, 2.0, H-6′); ^{13}C-NMR (100 MHz, CD_3OD): 97.5 (C-1), 153.5 (C-3), 111.2 (C-4), 29.2 (C-5), 35.3 (C-6), 174.9 (C-7), 134.8 (C-8), 45.5 (C-9), 120.3 (C-10), 170.5 (C-11), 52.0 (MeO-7), 100.0 (C-1′), 74.7 (C-2′), 78.1 (C-3′), 71.6 (C-4′), 78.5 (C-5′), 62.8 (C-6′). *Syringa reticulata* (Oleaceae).[9)]

3. Adinoside A



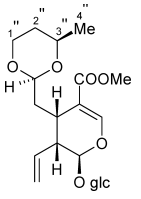
$C_{20}H_{28}O_{11}$: 444.1631; amorphous powder; $[\alpha]_D^{26}$ −40.0° (c=0.5, MeOH); UV (MeOH): 235 (4.07); IR (KBr): 3373, 1709, 1636, 1074; ^{1}H-NMR (500 MHz, C_5D_5N): 5.91 (d, 8.0, H-1), 7.77 (s, H-3), 3.62 (dd, 7.0, 5.5, H-5), 5.62 (dd, 15.5, 7.0, H-6), 5.76 (dt, 15.5, 7.0, H- 7), 5.86 (ddd, 17.0, 10.5, 8.0, H-8), 2.72 (td, 8.0, 5.5, H-9), 5.13 (dd, 10.5, 1.5, H-10), 5.23 (br d, 17.0, H-10), 5.44 (d, 8.0, H-1′), 4.07 (br t, 8.0, H-2′), 4.29 (t, 8.5, H-3′), 4.26 (t, 8.5, H-4′), 3.99 (ddd, 8.5, 5.5, 2.0, H-5′), 4.38 (dd, 11.5, 5.5, H-6′), 4.54 (dd, 11.5, 2.0, H-6′), 3.04 (dd, 16.5, 7.0, H-2″), 3.08 (dd, 16.5, 7.0, H-2″), 3.58 (s, MeO), 3.63 (s, MeO); ^{13}C-NMR (125 MHz, CD_3OD): 97.4 (C-1), 154.2 (C-3), 109.5 (C-4), 39.6 (C-5), 133.6 (C-6), 126.5 (C-7), 135.8 (C-8), 46.3 (C-9), 118.9 (C-10), 168.8 (C-11), 51.8 (MeO), 100.3 (C-1′), 74.7 (C-2′), 78.1 (C-3′), 71.6 (C-4′), 78.5 (C-5′), 62.8 (C-6′), 174.0 (C-1″), 38.3 (C-2″), 52.4 (MeO). *Adina racemosa* (Rubiaceae).[10)]

4. Adinoside B



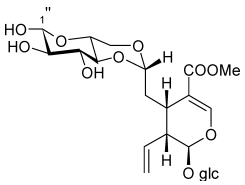
$C_{21}H_{32}O_{11}$: 460.1944; amorphous powder; $[\alpha]_D^{31}$ −111.0° (c=0.93, MeOH); UV (MeOH): 234 (4.07); IR (KBr): 3422, 1705, 1636; ^{1}H-NMR (500 MHz, CD_3OD): 5.53 (d, 6.5, H-1), 7.42 (d, 0.5, H-3), 2.98 (br q, 6.5, H-5), 1.73 (ddd, 13.5, 6.5, 4.5, H-6), 1.88 (ddd, 13.5, 7.5, 6.0, H-6), 4.64 (dd, 6.0, 4.5, H-7), 5.75 (ddd, 17.5, 10.5, 8.5, H-8), 2.64 (dt, 8.5, 6.5, H-9), 5.24 (br d, 10.5, H-10), 5.28 (br d, 17.5, H-10), 3.69 (s, MeO), 4.69 (d, 7.5, H-1′), 3.19 (dd, 9.0, 7.5, H-2′), 3.36 (t, 9.0, H-3′), 3.28 (t, 9.0, H-4′), 3.31 (m, H-5′), 3.67 (dd, 12.0, 5.5, H-6′), 3.89 (dd, 12.0, 2.0, H-6′), 3.71 (ddd, 13.0, 11.0, 2.5, H-1″), 4.00 (ddd, 11.0, 5.0, 1.5, H-1″), 1.44 (dtd, 13.0, 2.5, 1.5, H-2″), 1.54 (tdd, 13.0, 11.0, 5.0, H-2″), 3.69 (m, H-3″), 1.15 (d, 6.0, H_3-4″); ^{13}C-NMR (125 MHz, CD_3OD): 97.7 (C-1), 153.3 (C-3), 111.8 (C-4), 30.2 (C-5), 36.1 (C-6), 102.2 (C-7), 135.9 (C-8), 45.4 (C-9), 111.5 (C-10), 169.3 (C-11), 51.7 (OMe), 100.1 (C-1′), 74.7 (C-2′), 78.0 (C-3′), 71.6 (C-4′), 78.4 (C-5′), 62.8 (C-6′), 67.7 (C-1″), 34.2 (C-2″), 74.0 (C-3″), 22.0 (C-4″). *Adina racemosa* (Rubiaceae).[10)]

5. Adinoside C



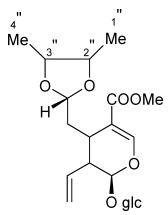
$C_{21}H_{32}O_{11}$: 460.1944; amorphous powder; $[\alpha]_D^{23}$ −134.0° (c=0.5, MeOH); UV (MeOH): 233 (4.05); IR (KBr): 3416, 1706, 1636, 1074; ^{1}H-NMR (500 MHz, CD_3OD): 5.51 (d, 5.5, H-1), 7.41 (d, 1.0, H-3), 2.98 (br q, 6.5, H-5), 1.69 (ddd, 13.5, 7.5, 4.5, H-6), 1.97 (dt, 13.5, 6.5, H-6), 4.63 (dd, 6.5, 4.5, H-7), 5.74 (ddd, 17.5, 10.5, 8.5, H-8), 2.66 (dt, 8.5, 5.5, H-9), 5.25 (br d, 10.5, H-10), 5.29 (br d, 17.5, H-10), 3.69 (s, MeO), 4.67 (d, 8.0, H-1′), 3.19 (dd, 9.0, 8.0, H-2′), 3.36 (t, 9.0, H-3′), 3.27 (t, 9.0, H-4′), 3.31 (ddd, 9.0, 5.5, 2.0, H-5′), 3.66 (dd, 11.5, 5.5, H-6′), 3.89 (dd, 11.5, 2.0, H-6′), 3.69 (ddd, 13.0, 11.0, 2.5, H-1″), 3.99 (ddd, 11.0, 5.0, 1.5, H-1″), 1.45 (dtd, 13.0, 2.5, 1.5, H-2″), 1.55 (tdd, 13.0, 11.0, 5.0, H-2″), 3.73 (dqd, 11.0, 6.0, 2.5, H-3″), 1.17 (d, 6.0, H_3-4″); ^{13}C-NMR (125 MHz, CD_3OD): 97.7 (C-1), 153.2 (C-3), 111.8 (C-4), 29.7 (C-5), 35.8 (C-6), 102.0 (C-7), 135.9 (C-8), 45.3 (C-9), 119.7 (C-10), 169.3 (C-11), 51.7 (OMe), 100.1 (C-1′), 74.7 (C-2′), 78.1 (C-3′), 71.6 (C-4′), 78.4 (C-5′), 62.8 (C-6′), 67.5 (C-1″), 34.2 (C-2″), 74.2 (C-3″), 22.0 (C-4″). *Adina racemosa* (Rubiaceae).[10)]

6. Caeruleoside C



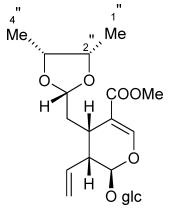
$C_{23}H_{34}O_{15}$: 550.1897; contains α- and β-glucose moieties at C-7 position; amorphous powder; ^{1}H-NMR (270 MHz, CD_3OD): 5.54 (d, 5.9, H-1), 7.45 (d, 1.0, H-3), 3.03 (m, H-5), 1.77 (m, H-6), 2.02 (m, H-6), 4.66 (m, H-7), 5.74 (br dt, 17.5, 8.6, H-8), 2.68 (m, H-9), 5.25 (br d, 8.6, H-10), 5.29 (br d, 17.5, H-10), 3.70 (s, MeO-11), 4.67 (d, 7.9, H-1′), 3.15—3.32 (m, H-2′, 3′, 4′, 5′), 3.62 (m, H-6′), 3.89 (dd, 11.7, 2.0, H-6′); β-glucose moiety: 4.53 (d, 7.9, H-1″), 3.15—3.40 (m, H-2″, 4″, 5″), 3.55 (m, H-3″, 6″), 4.08 (dd, 10.2, 4.6, H-6″); α-glucose moiety: 5.08 (d, 3.6, H-1″), 3.15—3.40 (m, H-2″, 4″), 3.78 (m, H-3″, 5″), 3.55 (m, H-6″), 4.00 (dd, 10.2, 5.0, H-6″); ^{13}C-NMR (67.8 MHz, CD_3OD): 97.7 (C-1), 153.7 (C-3), 111.6 (C-4), 29.6 (C-5), 35.2 (C-6), 102.6 (C-7), 135.8 (C-8), 45.4 (C-9), 119.8 (C-10), 169.3 (C-11), 51.8 (OMe), 100.0 (C-1′), 74.4 (C-2′), 78.0 (C-3′), 71.7 (C-4′), 78.5 (C-5′), 62.9 (C-6′); β-glucose moiety: 99.0 (C-1″), 77.2 (C-2″), 74.4 (C-3″), 82.1 (C-4″), 67.9 (C-5″), 69.5 (C-6″); α-glucose moiety: 94.7 (C-1″), 74.5 (C-2″), — (C-3″), 82.8 (C-4″), 63.6 (C-5″), 69.9 (C-6″). *Lonicera caerulea* (Caprifoliaceae).[11)]

7. Loniceracetalide A



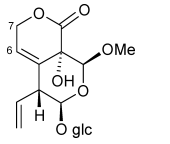
$C_{21}H_{32}O_{11}$: 460.1944; amorphous powder; $[\alpha]_D^{20}$ −106.1° (c=0.1, MeOH); UV (MeOH): 232 (4.07); ^{1}H-NMR (600 MHz, CD_3OD): 5.51 (d, 5.1, H-1), 7.41 (d, 1.5, H-3), 2.97 (m, H-5), 1.67 (ddd, 13.6, 8.1, 4.8, H-6), 1.96 (ddd, 13.6, 6.2, 6.2, H-6), 5.25 (dd, 6.2, 4.8, H-7), 5.72 (ddd, 17.2, 10.3, 7.0, H-8), 2.74 (m, H-9), 5.25 (dd, 10.3 1.1, H-10), 5.28 (dd, 17.2, 1.1, H-10), 3.68 (s, MeO-11), 4.66 (d, 8.1, H-1′), 3.19 (dd, 9.2, 8.1, H-2′), 3.28—3.37 (m, H-3′, 4′, 5′), 3.66 (dd, 11.7, 6.2, H-6′), 3.89 (dd, 11.7, 1.8, H-6′), 1.097 (d, 6.2, H_3-1″ or H_3-4″), 4.17 (q, 6.2, H-2″ or H-3″), 4.21 (q, 6.2, H-3″ or H-2″), 1.099 (d, 6.2, H_3-4″ or H_3-1″); ^{13}C-NMR (150 MHz, CD_3OD): 97.8 (C-1), 153.1 (C-3), 111.7 (C-4), 29.5 (C-5), 35.5 (C-6), 102.6 (C-7), 135.8 (C-8), 45.3 (C-9), 119.7 (C-10), 169.2 (C-11), 51.7 (OMe), 100.1 (C-1′), 74.7 (C-2′), 78.0 (C-3′), 71.5 (C-4′), 78.4 (C-5′), 62.7 (C-6′), 14.6 (C-1″, 4″), 75.2 (C-2″), 75.3 (C-3″). *Lonicera japonica* (Caprifoliaceae).[12)]

8. Loniceracetalide B



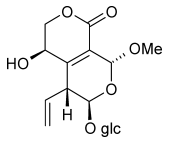
$C_{21}H_{32}O_{11}$: 460.1944; amorphous powder; $[\alpha]_D^{20}$ −115.0° (c=0.3, MeOH); UV (MeOH): 233 (4.04); ^{1}H-NMR (600 MHz, CD_3OD): 5.51 (d, 5.1, H-1), 7.41 (d, 1.1, H-3), 3.00 (m, H-5), 1.77 (ddd, 13.6, 8.4, 4.4, H-6), 2.06 (ddd, 13.6, 8.1, 5.9, H-6), 4.92 (dd, 5.9, 4.4, H-7), 5.72 (ddd, 17.2, 10.3, 7.0, H-8), 2.72 (m, H-9), 5.25 (dd, 10.3, 1.1, H-10), 5.28 (br d, 17.2, H-10), 3.68 (s, MeO-11), 4.67 (d, 8.1, H-1′), 3.19 (dd, 9.2, 8.1, H-2′), 3.24—3.37 (m, H-3′, 4′, 5′), 3.67 (dd, 11.7, 6.2, H-6′), 3.89 (dd, 11.7, 1.8, H-6′), 1.10 (d, 5.9, H_3-1″ or H_3-4″), 4.06 (q, 5.9, H-2″ or H-3″), 4.08 (q, 5.9, H-3″ or H-2″), 1.11 (d, 5.9, H_3-4″ or H_3-1″); ^{13}C-NMR (150 MHz, CD_3OD): 97.7 (C-1), 153.2 (C-3), 111.5 (C-4), 29.5 (C-5), 35.4 (C-6), 103.2 (C-7), 135.7 (C-8), 45.2 (C-9), 120.0 (C-10), 169.2 (C-11), 51.7 (OMe), 100.1 (C-1′), 74.6 (C-2′), 78.0 (C-3′), 71.5 (C-4′), 78.4 (C-5′), 62.7 (C-6′), 15.7 (C-1″)[a], 75.7 (C-2″)[b], 75.9 (C-3″)[b], 15.8 (C-4″)[a]. *Lonicera japonica* (Caprifoliaceae).[12]

9. Gentiascabraside A



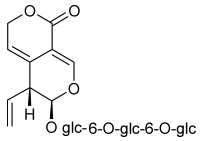
$C_{17}H_{24}O_{11}$: 404.1318; amorphous powder; $[\alpha]_D^{22}$ −9.1° (c=0.2, MeOH); ^{1}H-NMR (600 MHz, DMSO-d_6): 5.25 (d, 7.0, H-1), 4.88 (s, H-3), 6.58 (s, HO-4), 5.99 (dd, 2.2, 2.2, H-6), 4.79 (dd, 12.5, 2.2, H-7), 4.95 (dd, 12.5, 2.2, H-7), 5.76 (ddd, 16.9, 9.9, 7.0, H-8), 3.27 (m, H-9), 5.15 (dd, 16.9, 1.2, H-10), 5.20 (dd, 9.9, 1.2, H-10), 3.51 (s, MeO-3), 4.56 (d, 8.1, H-1′); ^{13}C-NMR (150 MHz, DMSO-d_6): 94.4 (C-1), 100.5 (C-3), 66.2 (C-4), 132.3 (C-5), 124.2 (C-6), 67.5 (C-7), 135.8 (C-8), 46.9 (C-9), 118.6 (C-10), 168.4 (C-11), 55.0 (OMe), 97.9 (C-1′), 73.0 (C-2′), 76.7 (C-3′), 70.0 (C-4′), 77.0 (C-5′), 61.1 (C-6′). *Gentiana scabra* (Gentianaceae).[13]

10. 6β-Hydroxyswertiajaposide A



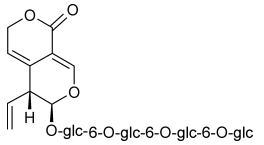
$C_{17}H_{24}O_{11}$: 404.1318; amorphous powder; $[\alpha]_D^{22}$ −88.1° (c=0.2, MeOH); UV (MeOH): 212 (3.9); ^{1}H-NMR (600 MHz, CD_3OD): 5.43 (d, 4.1, H-1), 5.54 (d, 1.2, H-3), 4.14 (dd, 2.7, 1.7, H-6), 4.40 (dd, 12.7, 2.7, H-7), 4.44 (dd, 12.7, 1.7, H-7), 5.78 (ddd, 16.9, 10.3, 8.8, H-8), 5.33 (ddd, 16.9, 1.5, 0.7, H-10), 5.35 (dd, 10.3, 1.5, H-10), 3.51 (s, MeO), 4.69 (d, 7.8, H-1′), 3.18 (dd, 9.3, 8.1, H-2′), 3.66 (dd, 12.0, 5.6, H-6′), 3.87 (dd, 12.0, 2.0, H-6′); ^{13}C-NMR (150 MHz, CD_3OD): 95.3 (C-1), 99.5 (C-3), 125.4 (C-4), 153.0 (C-5), 61.8 (C-6), 73.4 (C-7), 134.6 (C-8), 46.8 (C-9), 121.6 (C-10), 163.3 (C-11), 99.2 (C-1′), 74.7 (C-2′), 78.0 (C-3′), 71.7 (C-4′), 78.5 (C-5′), 62.8 (C-6′), 56.7 (OMe). *Gentiana scabra* (Gentianaceae).[13]

11. Scabran G_3



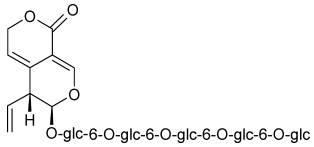
$C_{28}H_{40}O_{19}$: 680.2163; amorphous powder; $[\alpha]_D^{22}$ −81.5° (c=0.5, MeOH); UV (MeOH): 252 (3.8), 270 (3.9); ^{1}H-NMR (600 MHz, CD_3OD): 5.64 (d, 3.2, H-1), 7.45 (d, 1.2, H-3), 5.61 (m, H-6), 5.00 (ddd, 17.6, 3.4, 1.2, H-7), 5.07 (ddd, 17.6, 1.5, 1.2, H-7), 5.77 (ddd, 17.3, 10.5, 6.8, H-8), — (H-9), 5.23 (ddd, 10.5, 1.5, 1.1, H-10), 5.24 (ddd, 17.3, 1.5, 1.5, H-10), 4.67 (d, 8.1, H-1′), 3.77 (dd, 11.7, 5.6, H-6′), 4.16 (dd, 11.7, 2.0, H-6′), 4.37 (d, 7.8, H-1″), 3.76 (dd, 11.7, 5.6, H-6″), 4.15 (dd, 11.7, 2.0, H-6″), 4.36 (d, 7.8, H-1‴), 3.67 (dd, 12.0, 5.4, H-6‴), 3.87 (dd, 12.0, 2.0, H-6‴); ^{13}C-NMR (150 MHz, CD_3OD): 99.0 (C-1), 150.9 (C-3), 105.0 (C-4), 127.2 (C-5), 117.2 (C-6), 70.9 (C-7), 135.0 (C-8), 46.7 (C-9), 118.8 (C-10), 166.4 (C-11), 100.5 (C-1′), 74.6 (C-2′), 78.1 (C-3′, 3″), 71.7 (C-4′, 4″), 77.1 (C-5′, 5″), 70.6 (C-6′), 105.2 (C-1″), 75.1 (C-2″, 2‴), 70.1 (C-6″), 104.9 (C-1‴), 77.9 (C-3‴), 71.6 (C-4‴), 78.0 (C-5‴), 62.8 (C-6‴). *Gentiana scabra* (Gentianaceae).[13]

12. Scabran G_4



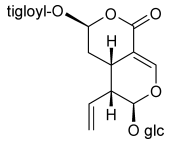
$C_{34}H_{50}O_{24}$: 842.2691; amorphous powder; $[\alpha]_D^{29}$ −58.7° (c=0.06, MeOH); UV (MeOH): 252 (3.9), 270 (3.9); ^{1}H-NMR (600 MHz, CD_3OD): 5.64 (d, 2.9, H-1), 7.46 (d, 1.1, H-3), 5.61 (m, H-6), 5.01 (ddd, 17.6, 3.3, 1.1, H-7), 5.07 (ddd, 17.6, 1.5, 1.1, H-7), 5.77 (ddd, 17.3, 10.5, 6.8, H-8), — (H-9), 5.22 (ddd, 10.5, 1.5, 1.1, H-10), 5.24 (ddd, 17.3, 1.5, 1.5, H-10), 4.68 (d, 8.1, H-1′), 4.40 (d, 8.1, H-1″), 4.38 (d, 8.1, H-1‴, 1⁗), 3.77 (m, H-6′, 6″, 6‴), 4.16 (br d, 11.7, H-6′, 6″, 6‴), 3.68 (dd, 11.7, 5.5, H-6⁗), 3.87 (dd, 11.7, 2.2, H-6⁗); ^{13}C-NMR (150 MHz, CD_3OD): 99.0 (C-1), 150.9 (C-3), 105.0 (C-4), 127.2 (C-5), 117.2 (C-6), 70.9 (C-7), 135.0 (C-8), 46.7 (C-9), 118.8 (C-10), 166.4 (C-11), 100.5 (C-1′), 74.6 (C-2′), 78.0 (C-3′, 3″, 3‴, 5⁗), 71.7 (C-4′, 4″, 4‴), 77.2 (C-5′), 70.7 (C-6′), 105.1 (C-1″, 1‴), 77.1 (C-5″), 70.5 (C-6″), 77.0 (C-5‴), 70.1 (C-6‴), 104.9 (C-1⁗), 75.1 (C-2″, 2‴, 2⁗), 77.9 (C-3⁗), 71.6 (C-4⁗), 62.8 (C-6⁗). *Gentiana scabra* (Gentianaceae).[13]

13. Scabran G_5



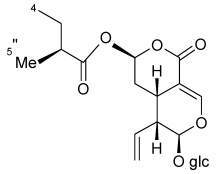
$C_{40}H_{60}O_{29}$: 1004.3219; amorphous powder; $[\alpha]_D^{29}$ −52.2° (c=0.1, MeOH); UV (MeOH): 252 (3.8), 270 (3.9); ^{1}H-NMR (600 MHz, CD_3OD): 5.64 (d, 2.9, H-1), 7.47 (d, 1.1, H-3), 5.61 (m, H-6), 5.00 (ddd, 17.6, 3.3, 1.1, H-7), 5.07 (ddd, 17.6, 1.5, 1.1, H-7), 5.77 (ddd, 17.3, 10.5, 6.8, H-8), — (H-9), 5.22 (ddd, 10.5, 1.5, 1.1, H-10), 5.24 (ddd, 17.3, 1.5, 1.5, H-10), 4.68 (d, 8.1, H-1′), 4.42, 4.41, 4.40 (each d, 8.1, H-1″, 1‴, 1⁗, 1⁗′), 3.79 (m, H-6′, 6″, 6‴, 6⁗), 4.17 (br d, 11.4, H-6′, 6″, 6‴, 6⁗), 3.88 (dd, 12.1, 2.2, H-6⁗′), 3.69 (dd, 12.1, 5.1, H-6⁗′); ^{13}C-NMR (125 MHz, CD_3OD): 99.0 (C-1), 150.9 (C-3), 105.0 (C-4), 127.0 (C-5), 117.2 (C-6), 70.9 (C-7), 134.9 (C-8), 46.6 (C-9), 118.8 (C-10), 166.5 (C-11), 100.4 (C-1′), 74.4 (C-2′), 77.9 (C-3′, 3″, 3‴, 3⁗, 5⁗′), 71.6 (C-4′, 4″, 4‴, 4⁗), 77.1 (C-5′), 70.6 (C-6′), 104.9 (C-1″, 1‴, 1⁗), 75.0 (C-2″, 2‴, 2⁗, 2⁗′), 77.0 (C-5″), 76.9 (C-5‴), 76.8 (C-5⁗), 70.5 (C-6″), 70.4 (C-6‴), 70.0 (C-6⁗), 104.8 (C-1⁗′), 77.8 (C-3⁗′), 71.5 (C-4⁗′), 62.6 (C-6⁗′). *Gentiana scabra* (Gentianaceae).[13]

14. Chelonanthoside



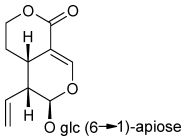
$C_{21}H_{28}O_{11}$: 456.1631; powder; $[\alpha]_D^{22}$ −52.6° (c=1.0, MeOH); UV (EtOH): 224 (4.02), 244 (3.94); IR (KBr): 3350, 1710, 1620; ^{1}H-NMR (400 MHz, CD_3OD): 5.59 (d, 1.5, H-1), 7.66 (d, 2.3, H-3), 3.43 (ddt, 13.6, 5.3, 2.3, H-5), 1.89 (dt, 13.6, 2.1, H_α-6), 1.97 (ddd, 13.6, 5.3, 2.1, H_β-6), 6.63 (t, 2.1, H-7), 5.54 (dt, 17.0, 9.6, H-8), 2.74 (ddd, 9.6, 5.3, 1.5, H-9), 5.30 (dd, 9.6, 1.8, H-10), 5.33 (dd, 17.0, 1.8, H-10), 4.71 (d, 7.8, H-1′), 3.21 (dd, 9.2, 7.8, H-2′), 3.37 (t, 9.2, H-3′), 3.28 (t, 9.2, H-4′), 3.33 (ddd, 9.2, 5.6, 1.8, H-5′), 3.67 (dd, 11.7, 5.6, H-6′), 3.89 (dd, 11.7, 1.8, H-6′), 6.95 (br q, 7.0, H-3″), 1.82 (br d, 7.0, H_3-4″), 1.83 (br s, H_3-5″); ^{13}C-NMR (100 MHz, CD_3OD): 98.7 (C-1), 155.3 (C-3), 104.5 (C-4), 23.0 (C-5), 29.0 (C-6), 93.5 (C-7), 133.0 (C-8), 43.4 (C-9), 121.4 (C-10), 166.0 (C-11), 100.3 (C-1′), 74.7 (C-2′), 78.1 (C-3′), 71.4 (C-4′), 78.3 (C-5′), 62.6 (C-6′), 166.9 (C-1″), 128.8 (C-2″), 141.1 (C-3″), 14.7 (C-4″), 12.0 (C-5″). *Chelonanthus chelonoides* (Gentianaceae).[14]

15. Dihydrochelonanthoside



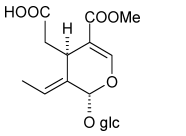
$C_{21}H_{30}O_{11}$: 458.1788; needles; mp 159—161 °C; $[\alpha]_D^{22}$ −63.5° (c=0.75, MeOH); UV (EtOH): 244 (3.98); IR (KBr): 3350, 1730, 1710, 1620; ^{1}H-NMR (400 MHz, CD_3OD): 5.59 (d, 1.5, H-1), 7.67 (d, 2.3, H-3), 3.30—3.42 (m, H-5, 3′, 5′), 1.87 (dt, 14.2, 2.1, H-6), 1.92 (ddd, 14.2, 5.6, 2.1, H-6), 6.61 (t, 2.1, H-7), 5.54 (dt, 17.1, 9.6, H-8), 2.72 (ddd, 9.6, 5.4, 1.5, H-9), 5.30 (dd, 9.6, 1.8, H-10), 5.33 (dd, 17.1, 1.8, H-10), 4.70 (d, 7.8, H-1′), 3.21 (dd, 9.2, 7.8, H-2′), 3.28 (t, 9.2, H-4′), 3.66 (dd, 12.0, 5.4, H-6′), 3.89 (dd, 12.0, 1.8, H-6′), 2.45 (sextet, 7.0, H-2″), 1.51, 1.67 (each, sextet, 7.0, H_2-3″), 0.91 (t, 7.0, H_3-4″), 1.14 (d, 7.0, H_3-5″); ^{13}C-NMR (100 MHz, CD_3OD): 98.7 (C-1), 155.3 (C-3), 104.4 (C-4), 22.9 (C-5), 28.9 (C-6), 93.1 (C-7), 133.0 (C-8), 43.4 (C-9), 121.5 (C-10), 165.9 (C-11), 100.4 (C-1′), 74.7 (C-2′), 78.1 (C-3′), 71.4 (C-4′), 78.3 (C-5′), 62.6 (C-6′), 175.9 (C-1″), 42.0 (C-2″), 27.6 (C-3″), 11.8 (C-4″), 16.8 (C-5″). *Chelonanthus chelonoides* (Gentianaceae).[14]

16. 6′-*O*-*β*-Apiofuranosylsweroside



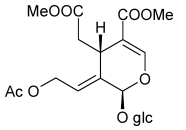
$C_{21}H_{30}O_{13}$: 490.1686; colorless crystals, mp 115—119 °C; $[\alpha]_D^{19}$ −206.0° (*c*=1.21, MeOH); UV (MeOH): 244 (1.01); ^{1}H-NMR (400 MHz, CD_3OD): 5.45 (d, 1.2, H-1), 7.60 (d, 2.4, H-3), 3.13 (m, H-5), 1.74 (m, H_2-6), 4.40 (m, H_2-7), 5.28 (m, H-8), 2.72 (m, H-9), 5.31 (m, H_2-10), 4.66 (d, 8.0, H-1′), 3.19 (m, H-2′), 3.37 (m, H-3′), 3.30 (m, H-4′), 3.46 (m, H-5′), 3.89 (dd, 5.6, 1.6, H-6′), 4.01 (dd, 6.4, 1.6, H-6′), 4.98 (d, 3.2, H-1″), 3.90 (d, 9.0, H-2″), — (d, 10.0, H-3″), 3.97 (d, 10.0, H-4″), 3.56 (H_2-5″); ^{13}C-NMR (100 MHz, CD_3OD): 95.7 (C-1), 153.8 (C-3), 106.0 (C-4), 28.4 (C-5), 25.9 (C-6), 69.7 (C-7), 133.2 (C-8), 43.8 (C-9), 121.0 (C-10), 99.7 (C-1′), 74.6 (C-2′), 77.7 (C-3′), 71.4 (C-4′), 77.0 (C-5′), 68.5 (C-6′), 110.9 (C-1″), 79.2 (C-2″), 80.4 (C-3″), 74.9 (C-4″), 65.5 (C-5″). *Lonicera quinquelocularis* (Caprifoliaceae).[15]

17. Jaspolyside



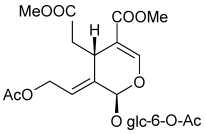
$C_{17}H_{24}O_{11}$: 404.1318; amorphous solid; $[\alpha]_D^{24}$ −53.0° (*c*=0.075, MeOH); UV (MeOH): 234 (3.68); IR (neat): 3460, 1720, 1690, 1640, 1405, 1105, 930; ^{1}H-NMR (300 MHz, CD_3OD): 6.27 (s, H-1), 7.46 (s, H-3), 3.70 (dd, 8.7, 3.3, H-5), 2.90 (dd, 15.6, 3.3, H-6), 2.52 (dd, 15.6, 8.7, H-6), 5.70 (q, 7.2, H-8), 1.79 (d, 7.2, H_3-10), 3.69 (s, OMe); ^{13}C-NMR (75 MHz, CD_3OD): 93.8 (C-1), 154.1 (C-3), 112.6 (C-4), 33.8 (C-5), 38.2 (C-6), 176.6 (C-7), 125.9 (C-8), 132.6 (C-9), 13.5 (C-10), 168.8 (C-11), 51.8 (OMe), 100.0 (C-1′), 74.8 (C-2′), 78.5 (C-3′), 71.7 (C-4′), 78.1 (C-5′), 62.9 (C-6′). *Jasminun polyanthum* (Oleaceae).[16]

18. 10-Acetoxyoleoside dimethyl ester



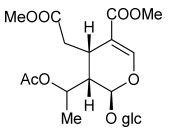
$C_{20}H_{28}O_{13}$: 476.1529; syrupy oil; $[\alpha]_D^{25}$ −196.3° ($CHCl_3$); ^{1}H-NMR (400 MHz, $CDCl_3$): 5.81 (s, H-1), 7.49 (s, H-3), 3.98 (dd, 9.4, 4.0, H-5), 2.43 (dd, 14.6, 9.4, H-6), 2.83 (dd, 14.6, 4.0, H-6), 6.11 (t, 6.5, H-8), 4.68 (m, H-10), 4.78 (dd, 13.2, 6.5, H-10), 3.65, 3.72 (each s, OMe), 4.85 (d, 7.5, H-1′), 3.40—3.70 (m, H-2′, 5′), 3.80 (m, H_2-6′), 2.05 (s, Ac); ^{13}C-NMR (100 MHz, $CDCl_3$): 93.6 (C-1), 153.4 (C-3), 107.9 (C-4), 31.1 (C-5), 40.0 (C-6), 171.5 (C-7), 123.5 (C-8), 132.1 (C-9), 60.5 (C-10), 166.4 (C-11), 51.6, 51.9 (2×OMe), 99.8 (C-1′), 73.0 (C-2′), 76.1 (C-3′, 5′), 69.5 (C-4′), 61.4 (C-6′), 20.8, 171.0 (Ac). *Jasminun odoratissimum* (Oleaceae).[17]

19. 6′-*O*-Acetyl-10-acetoxyoleoside dimethyl ester



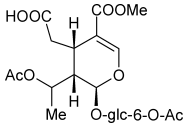
$C_{22}H_{30}O_{14}$: 518.1635; oil; $[\alpha]_D^{25}$ −63.0° (*c*=0.55, $CHCl_3$); UV (EtOH): 235 (4.11), 314 (3.03); IR (KBr): 2919, 1731, 1637, 1601, 1437, 1372, 1296, 1237, 1161, 1079, 1038, 949, 908; ^{1}H-NMR (400 MHz, $CDCl_3$): 5.75 (s, H-1), 7.48 (s, H-3), 4.02 (dd, 9.5, 4.0, H-5), 2.43 (dd, 15.3, 9.5, H-6), 2.83 (dd, 15.3, 4.0, H-6), 6.10 (t, 6.2, H-8), 4.75 (dd, 13.2, 6.2, H-10), 4.88—4.82 (m, H-10), 4.83 (d, 7.8, H-1′), 3.42—3.55 (m, H-2′), 3.64 (overlapped with H-1′, H-3′), 3.42—3.55 (m, H-4′, 5′), 4.27 (dd, 12.3, 2.0, H-6′), 4.51 (dd, 12.3, 4.3, H-6′), 3.62 (s, MeO-7), 3.74 (s, MeO-11), 2.07, 2.13 (each s, 2×Ac); ^{13}C-NMR (100 MHz, $CDCl_3$): 93.3 (C-1), 153.0 (C-3), 108.2 (C-4), 30.9 (C-5), 39.9 (C-6), 171.1 (C-7), 124.0 (C-8), 131.6 (C-9), 60.6 (C-10), 166.4 (C-11), 99.5 (C-1′), 73.1 (C-2′), 74.5 (C-3′), 75.8 (C-4′), 69.5 (C-5′), 62.9? (C-6′), 20.8, 166.4, 171.8 (2×Ac). *Jasminum odoratissimum* (Oleaceae).[18]

20. Diderroside methyl ester



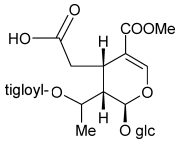
$C_{20}H_{30}O_{13}$: 478.1686; amorphous powder; $[\alpha]_D^{25}$ −36.0° (*c*=1.4, MeOH); UV (MeOH): 210.6 (4.2), 230 (4.6); IR (KBr): 3450, 2944, 1712, 1695, 1635, 1280; ^{1}H-NMR (500 MHz, DMSO-d_6): 5.66 (d, 4.5, H-1), 7.44 (s, H-3), 3.10 (m, H-5), 2.48 (dd, 16.0, 8.9, H-6), 2.85 (dd, 16.0, 7.5, H-6), 4.97 (dq, 6.5, 4.0, H-8), 2.08 (ddd, 9.5, 4.5, 4.0, H-9), 1.26 (d, 6.5, H_3-10), 1.92 (s, AcO-8), 3.58 (s, MeO-7), 3.54 (s, MeO-11), 4.54 (d, 7.5, H-1′), 3.18 (dd, 11.2, 7.5, H-2′), 3.16 (m, H-3′), 3.12 (m, H-4′), 3.06 (m, H-5′), 3.68 (dd, 12.4, 5.0, H-6′), 3.72 (dd, 12.4, 5.7, H-6′); ^{13}C-NMR (125 MHz, DMSO-d_6): 94.9 (C-1), 152.5 (C-3), 108.7 (C-4), 28.6 (C-5), 34.7 (C-6), 172.0 (C-7), 68.6 (C-8), 42.2 (C-9), 18.7 (C-10), 166.3 (C-11), 98.9 (C-1′), 73.3 (C-2′), 76.7 (C-3′), 70.1 (C-4′), 77.2 (C-5′), 61.4 (C-6′), 20.9, 169.8 (Ac), 51.4 (MeO-7), 51.1 (MeO-11). *Calycophyllum spruceanum* (Rubiaceae).[19]

21. 6′-*O*-Acetyldiderroside



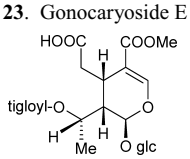
$C_{21}H_{30}O_{14}$: 506.1635; amorphous powder; $[\alpha]_D^{25}$ −76.5° (*c*=1.0, MeOH); UV (MeOH): 210 (4.6), 238 (4.4); IR (KBr): 3455, 2940, 1715, 1690, 1630, 1263; ^{1}H-NMR (500 MHz, DMSO-d_6): 5.58 (d, 6.5, H-1), 7.42 (d, 0.5, H-3), 3.28 (m, H-5), 2.34—2.76 (m, H_2-6), 5.00 (dq, 7.0, 4.5, H-8), 2.12 (ddd, 9.0, 6.5, 4.5, H-9), 1.27 (d, 7.0, H_3-10), 3.60 (s, MeO-11), 4.59 (d, 8.0, H-1′), 3.41 (dt, 9.5, 8.0, H-2′), 3.21 (m, H-3′), 3.01 (m, H-4′), 3.14 (ddd, 9.0, 6.5, 2.0, H-5′), 4.26 (dd, 12.0, 3.2, H-6′), 4.06 (dd, 12.0, 6.5, H-6′), 1.92 (s, AcO-8), 2.0 (s, AcO-6′); ^{13}C-NMR (125 MHz, DMSO-d_6): 95.0 (C-1), 152.1 (C-3), 109.1 (C-4), 28.0 (C-5), 34.6 (C-6), 173.0 (C-7), 68.5 (C-8), 42.0 (C-9), 18.6 (C-10), 166.2 (C-11), 50.9 (MeO-11), 99.1 (C-1′), 73.0 (C-2′), 76.3 (C-3′), 70.0 (C-4′), 73.6 (C-5′), 63.4 (C-6′), 20.8, 169.3 (AcO-8), 20.6, 170.3 (AcO-6′). *Calycophyllum spruceanum* (Rubiaceae).[19]

22. 8-*O*-Tigloyldeacetyldiderroside



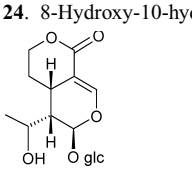
$C_{22}H_{32}O_{13}$: 504.1842; amorphous powder; $[\alpha]_D^{25}$ −78.8° (*c*=1.5, MeOH); UV (MeOH): 210 (4.1), 282 (4.5), 320 (4.0); IR (KBr): 3460, 2938, 1698, 1655, 1450, 1210; ^{1}H-NMR (500 MHz, DMSO-d_6): 5.76 (d, 6.5, H-1), 7.42 (s, H-3), 3.20 (m. H-5), 2.34 (dd, 16.0, 8.0, H-6), 2.78 (dd, 16.0, 7.2, H-6), 5.09 (dq, 6.5, 3.5, H-8), 2.16 (ddd, 8.5, 6.5, 3.5, H-9), 1.30 (d, 6.5, H_3-10), 3.59 (s, MeO-11), 4.59 (d, 8.0, H-1′), 2.99 (m, H-2′), 3.18 (m, H-3′), 3.01 (m, H-4′), 3.20 (m, H-5′), 3.70 (dd, 11.5, 5.6, H-6′), 3.98 (dd, 11.5, 6.8, H-6′), 6.79 (dq, 7.2, 1.5, H-3″), 1.76 (d, 1.5, H_3-4″), 1.74 (br s, H_3-5″); ^{13}C-NMR (125 MHz, DMSO-d_6): 94.1 (C-1), 152.1 (C-3), 109.1 (C-4), 28.0 (C-5), 34.4 (C-6), 173.0 (C-7), 68.6 (C-8), 42.1 (C-9), 18.8 (C-10), 166.2 (C-11), 50.9 (OMe), 98.4, (C-1′), 73.2 (C-2′), 77.3 (C-3′), 70.1 (C-4′), 76.7 (C-5′), 61.3 (C-6′), 166.3 (C-1″), 128.1 (C-2″), 137.4 (C-3″), 14.1 (C-4″), 11.8 (C-5″). *Calycophyllum spruceanum* (Rubiaceae).[19]

23. Gonocaryoside E



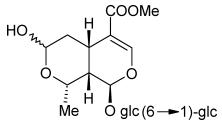
$C_{22}H_{32}O_{13}$: 504.1842; colorless amorphous powder; $[\alpha]_D$ −49.7° (*c*=1.263, MeOH); UV (MeOH): 221.8, 280.6, 320.3; IR ($CHCl_3$): 3404, 1713, 1640, 1505; ^{1}H-NMR (400 MHz, C_5D_5N): 6.28 (d, 6.6, H-1), 7.73 (s, H-3), 3.80 (m, H-5), 2.86 (dd, 16.2, 7.8, H-6), 3.10 (dd, 16.2, 4.7, H-6), 5.68 (m, H-8), 2.56 (m, H-9), 1.47 (d, 6.4, H_3-10), 3.57 (s, OMe), 5.41 (d, 7.8, H-1′), 4.03 (t, 8.9, H-2′), 4.24 (t, 8.9, H-3′), 4.20 (t, 8.9, H-4′), 3.96 (m, H-5′), 4.50 (dd, 11.8, 2.2, H-6′), 4.34 (dd, 11.8, 5.2, H-6′), 7.06 (q, 7.0, H-3″), 1.62 (d, 7.0, H_3-4″), 1.88 (s, H_3-5″); ^{13}C-NMR (100 MHz, C_5D_5N): 95.3 (C-1), 152.3 (C-3), 109.5 (C-4), 28.9 (C-5), 34.9 (C-6), 174.2 (C-7), 68.8 (C-8), 42.7 (C-9), 18.6 (C-10), 166.3 (C-11), 50.3 (OMe), 99.8 (C-1′), 73.9 (C-2′), 77.6 (C-3′), 70.6 (C-4′), 77.9 (C-5′), 61.9 (C-6′), 166.5 (C-1″), 128.5 (C-2″), 137.0 (C-3″), 13.5 (C-4″), 11.5 (C-5″). *Gonocaryum calleryanum* (Icacinaceae).[20]

24. 8-Hydroxy-10-hydrosweroside



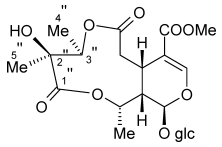
$C_{16}H_{24}O_{10}$: 376.1369; colorless gum; $[\alpha]_D^{20}$ −13.0° (*c*=0.012, MeOH); UV (MeOH): 253 (3.73); IR (KBr): 3570—3230, 1675; ^{1}H-NMR (500 MHz, CD_3OD): 5.92 (d, 1.7, H-1), 7.59 (d, 2.7, H-3), 3.05 (m, H-5), 2.01 (m, H-6), 1.90 (m, H-6), 4.35 (m, H-7), 4.21 (br dd, 11.5, 11.3, H-7), 3.21 (dq, 6.8, 6.5, H-8), 1.98 (m, H-9), 1.30 (d, 6.8, H_3-10), 4.67 (d, 7.8, H-1′), 3.45 (dd, 9.0, 7.8, H-2′), 3.41 (t, 9.0, H-3′), 3.35 (t, 9.0, H-4′), 3.12 (m, H-5′), 3.89 (dd, 12.1, 2.1, H-6′), 3.63 (dd, 12.1, 4.1, H-6′); ^{13}C-NMR (125 MHz, CD_3OD): 95.7 (C-1), 154.8 (C-3), 106.5 (C-4), 28.7 (C-5), 26.3 (C-6), 65.2 (C-7), 70.0 (C-8), 44.5 (C-9), 24.2 (C-10), 167.8 (C-11), 99.9 (C-1′), 74.7 (C-2′), 78.3 (C-3′), 71.5 (C-4′), 77.9 (C-5′), 62.8 (C-6′). *Gentiana tibetica* (Gentianaceae).[21]

25. 6′-*O*-*β*-D-Glucopyranosylmorroniside



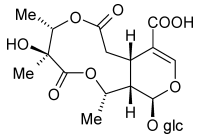
$C_{23}H_{36}O_{16}$: 568.2003; isolated as a mixture of 7*α* and 7*β* isomers (3 : 2); amorphous powder; $[\alpha]_D^{27}$ −71.4° (*c*=0.56, MeOH); UV (MeOH): 238 (3.99); ^{1}H-NMR (400 MHz, CD_3OD): 7*α*-isomer: 5.90 (d, 9.0, H-1), 7.52 (s, H-3), 2.80 (dt, 13.0, 4.0, H-5), 1.24 (dt, 13.0, 10.0, H-6), 2.00 (ddd, 13.0, 4.0, 2.0, H-6), 4.77 (dd, 10.0, 2.0, H-7), 3.93 (dq, 7.0, 2.0, H-8), 1.75 (ddd, 9.0, 4.0, 2.0, H-9), 1.38 (d, 7.0, H_3-10), 3.70 (s, MeO-11), 4.78 (d, 8.0, H-1′), 3.76 (dd, 12.0, 7.0, H-6′), 4.17 (dd, 12.0, 2.0, H-6′), 4.50 (d, 8.0, H-1″), signals of other sugar protons overlapped each other; 7*β*-isomer: 5.92 (d, 10.0, H-1), 7.51 (s, H-3), 3.10 (dt, 13.0, 5.0, H-5), 1.56 (dt, 13.0, 4.0, H-6), 1.85 (br dd, 13.0, 4.0, H-6), 5.30 (br d, 4.0, H-7), 4.51 (dq, 7.0, 3.0, H-8), 1.78 (m, H-9), 1.30 (d, 7.0, H_3-10), 3.69 (s, MeO-11), 4.79 (d, 8.0, H-1′), 3.81 (dd, 12.0, 7.0, H-6′), 4.13 (dd, 12.0, 2.0, H-6′), 4.54 (d, 8.0, H-1″), signals of other sugar protons overlapped each other; ^{13}C-NMR (100 MHz, CD_3OD): 7*α*-isomer: 97.3 (C-1), 154.6 (C-3), 111.0 (C-4), 32.0 (C-5), 37.4 (C-6), 96.5 (C-7), 75.0 (C-8), 40.1 (C-9), 20.3 (C-10), 168.8 (C-11), 51.8 (OMe), 100.2 (C-1′), 74.3 (C-2′), 78.1 (C-3′), 72.1 (C-4′), 77.6 (C-5′), 70.3 (C-6′), 105.0 (C-1″), 75.3 (C-2″), 78.3 (C-3″), 71.8 (C-4″), 77.9 (C-5″), 62.8 (C-6″); 7*β*-isomer: 96.2 (C-1), 154.6 (C-3), 111.8 (C-4), 27.5 (C-5), 34.4 (C-6), 92.3 (C-7), 65.9 (C-8), 40.7 (C-9), 20.3 (C-10), 168.8 (C-11), 51.7 (OMe), 100.3 (C-1′), 75.0 (C-2′), 78.4 (C-3′), 72.1 (C-4′), 77.7 (C-5′), 69.8 (C-6′), 104.8 (C-1″), 75.4 (C-2″), 78.0 (C-3″), 71.7 (C-4″), 77.8 (C-5″), 62.8 (C-6″). *Tripterospermum japonicum* (Gentianaceae).[22]

26. Gonocaryoside A



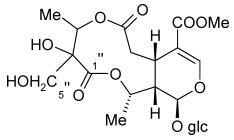
$C_{22}H_{32}O_{14}$: 520.1791; amorphous powder; $[\alpha]_D^{28}$ −17.1° (*c*=1.0, MeOH); ^{1}H-NMR (400 MHz, C_5D_5N): 6.41 (d, 9.9, H-1), 7.67 (s, H-3), 3.56 (m, H-5), 2.76 (br d, 13.8, H-6), 2.55 (br d, 13.8, H-6), 5.04 (q, 6.8, H-8), 2.15 (m, H-9), 1.67 (d, 6.8, H_3-10), 3.65 (s, OMe), 5.45 (d, 7.9, H-1′), 4.07 (dd, 9.2, 7.9, H-2′), 4.24 (t, 9.2, H-3′), 4.31 (t, 9.2, H-4′), 4.01 (ddd, 9.2, 4.9, 2.8, H-5′), 4.49 (dd, 11.7, 2.8, H-6′), 4.32 (dd, 11.7, 4.9, H-6′), 5.59 (q, 6.6, H-3″), 1.45 (d, 6.6, H_3-4″), 1.88 (s, H_3-5″); ^{13}C-NMR (100 MHz, C_5D_5N): 96.0 (C-1), 153.7 (C-3), 111.3 (C-4), 33.7 (C-5), 36.5 (C-6), 172.2 (C-7), 75.2 (C-8), 45.2 (C-9), 20.3 (C-10), 166.2 (C-11), 51.2 (OMe), 100.4 (C-1′), 74.9 (C-2′), 78.7 (C-3′), 71.6 (C-4′), 78.3 (C-5′), 62.8 (C-6′), 175.4 (C-1″), 75.4 (C-2″), 73.6 (C-3″), 12.9 (C-4″), 17.7 (C-5″). *Gonocaryum calleryanum* (Icacinaceae).[23]

27. Gonocaryoside B



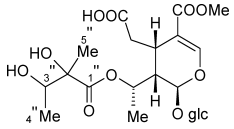
$C_{21}H_{30}O_{14}$: 506.1635; powder; $[\alpha]_D^{28}$ −21.8° (*c*=1.0, H_2O); ^{1}H-NMR (400 MHz, C_5D_5N): 6.42 (d, 9.5, H-1), 7.60 (s, H-3), 3.76 (m, H-5), 2.97 (br d, 13.5, H-6), 2.58 (br d, 13.5, H-6), 5.08 (q, 6.4, H-8), 2.17 (m, H-9), 1.67 (d, 6.4, H_3-10), 5.48 (d, 7.9, H-1′), 4.08 (dd, 9.0, 7.9, H-2′), 4.27 (t, 9.0, H-3′), 4.31 (t, 9.0, H-4′), 4.04 (ddd, 9.0, 5.1, 2.1, H-5′), 4.50 (dd, 11.4, 2.1, H-6′), 4.35 (dd, 11.4, 5.1, H-6′), 5.60 (q, 6.6, H-3″), 1.45 (d, 6.6, H_3-4″), 1.90 (s, H_3-5″); ^{13}C-NMR (100 MHz, C_5D_5N): 95.9 (C-1), 153.0 (C-3), 112.8 (C-4), 34.3 (C-5), 36.8 (C-6), 172.5 (C-7), 75.4 (C-8), 45.5 (C-9), 20.5 (C-10), 168.4 (C-11), 100.6 (C-1′), 75.0 (C-2′), 78.7 (C-3′), 71.8 (C-4′), 78.4 (C-5′), 63.0 (C-6′), 175.6 (C-1″), 75.6 (C-2″), 73.6 (C-3″), 13.1 (C-4″), 17.8 (C-5″). *Gonocaryum calleryanum* (Icacinaceae).[23]

28. Gonocaryoside C



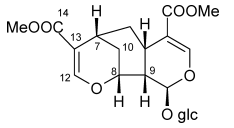
$C_{22}H_{32}O_{15}$: 536.1741; powder; $[\alpha]_D^{17}$ +8.2° (*c*=0.73, C_5H_5N); ^{1}H-NMR (400 MHz, C_5D_5N+1 drop D_2O): 6.45 (d, 9.3, H-1), 7.66 (s, H-3), 3.56 (m, H-5), 2.75 (br d, 13.7, H-6), 2.63 (br d, 13.7, H-6), 5.05 (q, 6.6, H-8), 2.14 (m, H-9), 1.71 (d, 6.6, H_3-10), 3.62 (s, OMe), 5.45 (d, 7.1, H-1′), 4.04 (dd, 8.1, 7.1, H-2′), 4.22 (t, 8.1, H-3′), 4.35 (t, 8.1, H-4′), 3.86 (m, H-5′), 4.58 (dd, 10.8, 2.2, H-6′), 4.47 (dd, 10.8, 5.3, H-6′), 5.58 (q, 6.8, H-3″), 1.42 (d, 6.8, H_3-4″), 4.37 (br s, H_2-5″); ^{13}C-NMR (100 MHz, $C_5D_5N+D_2O$): 96.1 (C-1), 153.7 (C-3), 111.5 (C-4), 33.8 (C-5), 36.4 (C-6), 172.2 (C-7), 75.4 (C-8), 45.3 (C-9), 20.2 (C-10), 166.3 (C-11), 51.2 (OMe), 100.3 (C-1′), 74.6 (C-2′), 78.4 (C-3′), 70.1 (C-4′), 78.0 (C-5′), 61.5 (C-6′), 173.7 (C-1″), 79.7 (C-2″), 72.6 (C-3″), 13.8 (C-4″), 62.3 (C-5″). *Gonocaryum calleryanum* (Icacinaceae).[23]

29. Gonocaryoside D



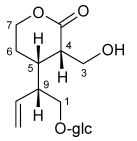
$C_{22}H_{34}O_{15}$: 538.1897; powder; $[\alpha]_D^{17}$ −5.8° (*c*=0.84, C_5H_5N); ^{1}H-NMR (400 MHz, C_5D_5N, 50 °C): 6.29 (d, 7.3, H-1), 7.73 (s, H-3), 3.62 (m, H-5), 3.08 (dd, 16.4, 4.8, H-6), 3.01 (dd, 16.4, 7.6, H-6), 5.20 (q, 6.3, H-8), 2.49 (m, H-9), 1.41 (d, 6.3, H_3-10), 3.65 (s, OMe), 5.45 (d, 7.8, H-1′), 4.08 (dd, 8.8, 7.8, H-2′), 4.26 (t, 8.8, H-3′), 4.30 (t, 8.8, H-4′), 3.94 (m, H-5′), 4.53 (dd, 11.7, 2.2, H-6′), 4.46 (dd, 11.7, 5.1, H-6′), 3.88 (q, 6.3, H-3″), 1.54 (d, 6.3, H_3-4″), 1.83 (s, H_3-5″); ^{13}C-NMR (100 MHz, C_5D_5N): 95.8 (C-1), 152.9 (C-3), 110.5 (C-4), 30.8 (C-5), 36.4 (C-6), 175.3 (C-7), 71.0 (C-8), 43.9 (C-9), 20.1 (C-10), 167.1 (C-11), 51.0 (OMe), 100.6 (C-1′), 74.8 (C-2′), 79.0 (C-3′), 71.2 (C-4′), 78.5 (C-5′), 62.2 (C-6′), 174.7 (C-1″), 78.8 (C-2″), 72.4 (C-3″), 18.3 (C-4″), 22.1 (C-5″). *Gonocaryum calleryanum* (Icacinaceae).[23]

30. Stryspinoside



$C_{21}H_{28}O_{12}$: 472.1850; amorphous powder; $[\alpha]_D^{20}$ −172.0° (*c*=1.1, MeOH); UV (MeOH): 232 (4.28); IR (KBr): 3415, 1701, 1636; ^{1}H-NMR (500 MHz, CD_3OD): 5.74 (br s, H-1), 7.15 (d, 2.5, H-3), 3.09 (tdd, 6.5, 3.5, 2.5, H-5), 1.72 (ddd, 14.5, 6.5, 3.5, H-6), 2.93 (br d, 14.5, H-6), 2.72 (br s, H-7), 4.74 (br s, H-8), 2.30 (br d, 6.5, H-9), 1.78 (dtd, 13.0, 3.5, 2.0, H-10), 1.91 (ddd, 13.0, 2.5, 1.5, H-10), 7.37 (s, H-12), 3.59 (s, MeO-11), 3.66 (s, MeO-14), 4.63 (d, 8.0, H-1′), 3.15 (dd, 9.0, 8.0, H-2′), 3.34 (t, 9.0, H-3′), 3.24 (t, 9.0, H-4′), 3.32 (m, H-5′), 3.65 (dd, 12.0, 6.5, H-6′), 3.91 (dd, 12.0, 2.5, H-6′); ^{13}C-NMR (125 MHz, CD_3OD): 97.0 (C-1), 152.2 (C-3), 111.6 (C-4), 24.4 (C-5), 30.3 (C-6), 25.4 (C-7), 74.3 (C-8), 44.0 (C-9), 30.7 (C-10), 169.0 (C-11), 159.6 (C-12), 109.7 (C-13), 169.2 (C-14), 51.5, 51.6 (2×MeO), 99.6 (C-1′), 74.7 (C-2′), 78.0 (C-3′), 71.7 (C-4′), 78.3 (C-5′), 62.9 (C-6′). *Strychnos spinosa* (Loganiaceae).[24]

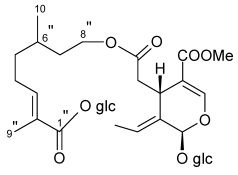
31. 1-*O*-*β*-D-Glucopyranosyl-4-*epi*-amplexine



$C_{16}H_{26}O_9$: 362.1576; amorphous powder; $[\alpha]_D^{22}$ −42.8° (*c*=0.3, MeOH); ^{1}H-NMR (600 MHz, CD_3OD): 4.17 (dd, 11.5, 10.5, H-1), 4.29 (dd, 11.5, 6.1, H-1), 3.74 (dd, 11.5, 7.0, H-3), 3.97 (dd, 11.5, 6.2, H-3), 3.00 (dd, 7.0, 6.2, H-4), 2.39 (m, H-5), 1.47 (m, H-6), 1.86 (m, H-6), —(H-7), 5.80 (ddd, 17.3, 10.5, 7.6, H-8), 2.75 (m, H-9), 5.16 (dd, 11.5, 1.2, H-10), 5.24 (ddd, 17.3, 1.2, 1.2, H-10), 4.24 (d, 7.8, H-1′), 3.67 (dd, 11.0, 11.0, H-6′), 3.85 (dd, 11.7, 1.8, H-6′); ^{13}C-NMR (150 MHz, CD_3OD): 70.9 (C-1), 59.9 (C-3), 44.6 (C-4), 35.8 (C-5), 31.6 (C-6), 67.9 (C-7), 138.3 (C-8), 43.3 (C-9), 117.7 (C-10), 176.2 (C-11), 104.3 (C-1′), 75.1 (C-2′), 78.0 (C-3′), 71.7 (C-4′), 78.1 (C-5′), 62.9 (C-6′). *Gentiana scabra* (Gentianaceae).[13]

Group 2: Terpene Conjugated Secoiridoids

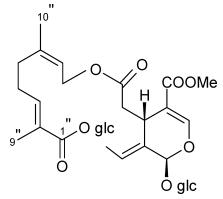
32. Jaspofoliamoside A



$C_{33}H_{50}O_{18}$: 734.2996; colorless amorphous powder; $[\alpha]_D^{27}$ −125.0° (*c*=0.76, MeOH); UV (MeOH): 225.5 (4.31); IR (KBr): 3421, 1715, 1636, 1076, 816; ^{1}H-NMR (500 MHz, CD_3OD): 5.94 (br s, H-1), 7.53 (s, H-3), 3.99 (dd, 9.0, 4.5, H-5), 2.48 (dd, 14.5, 9.0, H-6), 2.71 (dd, 14.5, 4.5, H-6), 6.11 (br q, 7.0, H-8), 1.74 (dd, 7.0, 1.0, H_3-10), 3.72 (s, MeO-11), 4.81 (d, 7.5, H-1′), 3.68 (dd, 12.0, 4.5, H-6′ or H-6‴), 3.84 (dd, 12.0, 1.5, H-6′ or H-6‴), 6.91 (tq, 7.0, 1.5, H-3″), 2.26 (m, H_2-4″), 1.48 (m, H-5″, 7″), 1.70 (m, H-5″, 7″), 1.59 (m, H-6″), 4.06 (dt, 11.0, 6.0, H-8″), 4.13 (dt, 11.0, 7.0, H-8″), 1.87 (br s, H_3-9″), 0.96 (d, 6.5, H_3-10″), 5.53 (d, 8.0, H-1‴), 3.66 (dd, 12.0, 4.5, H-6‴ or H-6′), 3.89 (dd, 12.0, 2.0, H-6‴ or H-6′); ^{13}C-NMR (?, CD_3OD): 95.2 (C-1), 155.2 (C-3), 109.5 (C-4), 31.9 (C-5), 41.3 (C-6), 173.3 (C-7), 124.8 (C-8), 130.8 (C-9), 13.7 (C-10), 168.7 (C-11), 52.0 (OMe), 100.9 (C-1′), 74.8 (C-2′), 78.0 (C-3′), 71.1 (C-4′), 78.5 (C-5′), 62.4 (C-6′), 168.2 (C-1″), 128.3

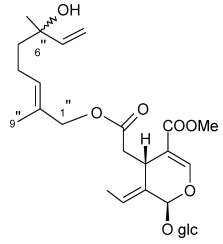
(C-2″), 145.6 (C-3″), 27.3 (C-4″), 36.4 (C-5″), 30.9 (C-6″), 36.6 (C-7″), 64.1 (C-8″), 12.5 (C-9″), 19.7 (C-10″), 96.0 (C-1‴), 74.0 (C-2‴), 78.2 (C-3‴), 71.6 (C-4‴), 78.8 (C-5‴), 62.9 (C-6‴). *Jasminum polyanthum* (Oleaceae).[25)]

33. Jaspofoliamoside B



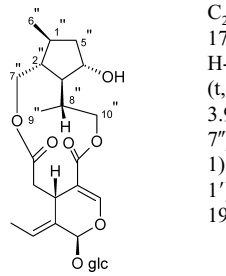
$C_{33}H_{48}O_{18}$: 732.2840; colorless amorphous powder; $[\alpha]_D^{28}$ −118.0° (c=0.37, MeOH); UV (MeOH): 226 (4.29); IR (KBr): 3423, 1729, 1709, 1634, 1076, 818; ^{1}H-NMR (500 MHz, CD_3OD): 5.94 (br s, H-1), 7.52 (s, H-3), 4.00 (dd, 9.5, 4.5, H-5), 2.46 (dd, 14.0, 9.5, H-6), 2.72 (dd, 14.0, 4.5, H-6), 6.10 (qd, 7.0, 2.0, H-8), 1.73 (dd, 7.0, 1.5, H_3-10), 3.72 (s, MeO-11), 4.80 (d, 8.0, H-1′), 3.66, 3.68 (each dd, 12.0, 6.0, H-6′, H-6‴), 3.83 (dd, 12.0, 2.0, H-6‴ or H-6′), 3.89 (dd, 12.0, 2.5, H-6‴ or H-6′), 6.89 (tq, 7.0, 1.5, H-3″), 2.38 (br q, 7.0, H_2-4″), 2.19 (br t, 7.0, H_2-5″), 5.38 (tq, 7.5, 1.5, H-7″), 4.54, 4.61 (each dd, 12.0, 7.0, H_2-8″), 1.86 (d, 1.5, H_3-9″), 1.74 (d, 1.0, H_3-10″), 5.52 (d, 8.0, H-1‴); ^{13}C-NMR (125 MHz, CD_3OD): 95.2 (C-1), 155.2 (C-3), 109.5 (C-4), 31.9 (C-5), 41.3 (C-6), 173.2 (C-7), 124.8 (C-8), 130.6 (C-9), 13.7 (C-10), 168.7 (C-11), 52.0 (OMe), 100.9 (C-1′), 74.1 (C-2′)[a], 78.0 (C-3′)[b], 71.1 (C-4′)[c], 78.5 (C-5′)[b], 62.8 (C-6′)[d], 168.1 (C-1″), 128.7 (C-2″), 144.7 (C-3″), 28.1 (C-4″), 39.0 (C-5″), 142.3 (C-6″), 120.5 (C-7″), 62.4 (C-8″), 12.5 (C-9″), 16.6 (C-10″), 96.0 (C-1‴), 74.8 (C-2‴)[a], 78.2 (C-3‴)[b], 71.6 (C-4‴)[c], 78.8 (C-5‴)[b], 62.4 (C-6‴)[d]. *Jasminum polyanthum* (Oleaceae).[25)]

34. Jaspolinaloside



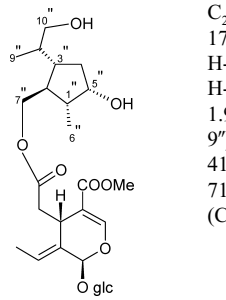
$C_{27}H_{40}O_{12}$: 556.2519; isolated as a mixture of 6″α/6″β-isomers; colorless amorphous powder; $[\alpha]_D^{29}$ −147.0° (c=0.39, MeOH); UV (MeOH): 237.5 (4.08); IR (KBr): 3423, 1731, 1711, 1636, 1078, 818; ^{1}H-NMR (500 MHz, CD_3OD): 5.94 (br s, H-1), 7.52 (s, H-3), 4.00 (dd, 9.0, 4.5, H-5), 2.49 (dd, 14.5, 9.0, H-6), 2.73 (dd, 14.5, 4.5, H-6), 6.11 (qd, 7.0, 1.0, H-8), 1.73 (dd, 7.0, 1.5, H_3-10), 3.71 (s, MeO-11), 4.80 (d, 8.0, H-1′), 3.66 (dd, 12.0, 6.0, H-6′), 3.88 (dd, 12.0, 2.0, H-6′), 4.36, 4.48 (each br d, 12.0, H_2-1″), 5.47 (tq, 7.0, 1.0, H-3″), 2.01 (m, H_2-4″), 1.54 (m, H_2-5″), 5.91 (dd, 17.5, 11.0, H-7″), 5.03 (dd, 11.0, 1.5, H-8″), 5.20 (dd, 17.5, 1.5, H-8″), 1.65 (br t, 0.5, H_3-9″), 1.26 (s, H_3-10″); ^{13}C-NMR (125 MHz, CD_3OD): 95.2 (C-1), 155.2 (C-3), 109.4 (C-4), 31.9 (C-5), 41.3 (C-6), 173.1 (C-7), 124.8 (C-8), 130.7 (C-9), 13.7 (C-10), 168.7 (C-11), 51.9 (OMe), 100.9 (C-1′), 74.8 (C-2′), 78.0 (C-3′), 71.5 (C-4′), 78.5 (C-5′), 62.9 (C-6′), 71.6 (C-1″), 131.3 (C-2″), 130.9 (C-3″), 23.5 (C-4″), 42.8 (C-5″), 73.8 (C-6″), 146.2 (C-7″), 112.2 (C-8″), 14.1 (C-9″), 27.7 (C-10″). *Jasminum polyanthum* (Oleaceae).[25)]

35. Nudifloside C



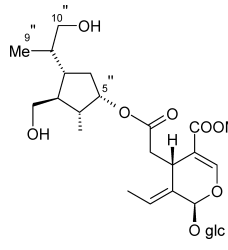
$C_{26}H_{38}O_{12}$: 542.2363; colorless amorphous powder; $[\alpha]_D^{23}$ −208.0° (c=0.93, MeOH); UV (MeOH): 236 (4.04); IR (KBr): 3414, 1732, 1719, 1618, 1076; ^{1}H-NMR (500 MHz, CD_3OD): 5.91 (br s, H-1), 7.46 (s, H-3), 4.01 (dd, 11.5, 3.5, H-5), 2.31 (dd, 11.5, 3.5, H-6), 2.51 (t, 11.5, H-6), 6.09 (qd, 7.0, 1.0, H-8), 1.81 (dd, 7.0, 1.5, H_3-10), 4.81 (d, 7.5, H-1′), 3.28—3.34 (m, H-2′, 4′, 5′), 3.41 (t, 9.0, H-3′), 3.64 (dd, 12.0, 6.0, H-6′), 3.89 (dd, 12.0, 2.0, H-6′), 2.05 (m, H-1″), 1.40 (m, H-2″), 2.19 (ddd, 10.0, 7.0, 2.5, H-3″), 3.94 (td, 7.0, 5.0, H-4″), 1.40 (m, H-5″), 1.75 (ddd, 13.0, 8.5, 4.5, H-5″), 0.97 (d, 7.0, H_3-6″), 3.89 (m, H-7″), 4.13 (dd, 12.0, 2.0, H-7″), 2.46 (m, H-8″), 0.90 (d, 7.0, H_3-9″), 3.87 (dd, 11.5, 5.5, H-10″), 4.43 (t, 11.5, H-10″); ^{13}C-NMR (125 MHz, CD_3OD): 94.8 (C-1), 153.1 (C-3), 110.1 (C-4), 32.5 (C-5), 43.6 (C-6), 173.8 (C-7), 123.9 (C-8), 131.5 (C-9), 13.1 (C-10), 168.8 (C-11), 100.8 (C-1′), 74.8 (C-2′), 78.0 (C-3′), 71.6 (C-4′), 78.6 (C-5′), 62.8 (C-6′), 35.0 (C-1″), 45.4 (C-2″), 49.5 (C-3″), 75.7 (C-4″), 43.2 (C-5″), 19.4 (C-6″), 65.6 (C-7″), 33.7 (C-8″), 11.5 (C-9″), 68.0 (C-10″). *Jasminum nudiflorum* (Oleaceae).[26)]

36. Jasnudifloside F



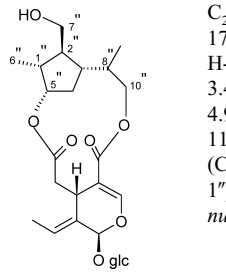
$C_{27}H_{42}O_{13}$: 574.2625; colorless amorphous powder; $[\alpha]_D^{28}$ −145.0° (c=0.52, MeOH); UV (MeOH): 235 (4.07); IR (KBr): 3406, 1733, 1712, 1632, 1078; ^{1}H-NMR (500 MHz, CD_3OD): 5.93 (br s, H-1), 7.53 (s, H-3), 3.99 (dd, 9.0, 4.5, H-5), 2.49 (dd, 14.0, 9.0, H-6), 2.72 (dd, 9.0, 4.5, H-6), 6.12 (qd, 7.0, 1.0, H-8), 1.74 (dd, 7.0, 1.0, H_3-10), 3.72 (s, MeO), 4.82 (d, 8.0, H-1′), 3.28—3.44 (m, H-2′—H-5′), 3.67 (dd, 11.5, 6.0, H-6′), 3.89 (dd, 11.5, 1.0, H-6′), 1.78 (m, H-1″), 1.85 (m, H-2″), 1.68 (m, H-3″), 1.68 (m, H-4″), 1.95 (m, H-4″), 4.04 (q, 5.0, H-5″), 0.99 (d, 8.5, H_3-6″), 3.92 (dd, 11.5, 6.0, H-7″), 4.18 (m, H-7″), 1.67 (m, H-8″), 0.98 (d, 8.5, H_3-9″), 3.38 (m, H-10″), 3.59 (dd, 11.0, 4.0, H-10″); ^{13}C-NMR (125 MHz, CD_3OD): 94.9 (C-1), 155.1 (C-3), 109.3 (C-4), 32.0 (C-5), 41.2 (C-6), 173.3 (C-7), 124.7 (C-8), 130.6 (C-9), 13.7 (C-10), 168.5 (C-11), 51.9 (OMe), 100.6 (C-1′), 74.7 (C-2′), 77.8 (C-3′), 71.5 (C-4′), 78.4 (C-5′), 62.8 (C-6′), 43.2 (C-1″), 47.8 (C-2″), 43.0 (C-3″), 36.9 (C-4″), 75.7 (C-5″), 14.0 (C-6″), 68.1 (C-7″), 40.7 (C-8″), 16.6 (C-9″), 66.4 (C-10″). *Jasminum nudiflorum* (Oleaceae).[27)]

37. Jasnudifloside G



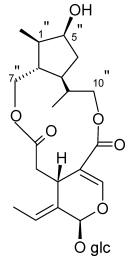
$C_{27}H_{42}O_{13}$: 574.2625; colorless amorphous powder; $[\alpha]_D^{23}$ −161.0° (c=0.89, MeOH); UV (MeOH): 236 (4.08); IR (KBr): 3400, 1731, 1709, 1632, 1078, 818; ^{1}H-NMR (500 MHz, CD_3OD): 5.96 (br s, H-1), 7.53 (s, H-3), 4.01 (dd, 9.0, 4.5, H-5), 2.50 (dd, 14.0, 9.0, H-6), 2.70 (dd, 14.0, 4.5, H-6), 6.11 (br q, 7.0, H-8), 1.75 (dd, 7.5, 1.5, H_3-10), 3.72 (s, MeO), 4.80 (d, 8.0, H-1′), 3.28—3.36 (m, H-2′, 4′, 5′), 3.40 (t, 9.0, H-3′), 3.65 (dd, 11.5, 6.0, H-6′), 3.88 (dd, 11.5, 2.0, H-6′), 2.02 (m, H-1″), 1.66 (m, H-2″), 1.74 (m, H-3″), 1.60 (ddd, 13.5, 6.5, 4.5, H-4″), 2.02 (m, H-4″), 5.00 (q, 4.5, H-5″), 0.94 (d, 7.0, H_3-6″), 3.52 (dd, 11.5, 5.5, H-7″), 3.60 (dd, 11.5, 4.0, H-7″), 1.66 (m, H-8″), 0.98 (d, 6.5, H_3-9″), 3.30 (m, H-10″), 3.59 (dd, 11.0, 4.0, H-10″); ^{13}C-NMR (125 MHz, CD_3OD): 95.3 (C-1), 155.2 (C-3), 109.4 (C-4), 31.9 (C-5), 41.5 (C-6), 173.0 (C-7), 124.8 (C-8), 130.8 (C-9), 13.8 (C-10), 168.7 (C-11), 51.2 (OMe), 100.9 (C-1′), 74.8 (C-2′), 78.0 (C-3′), 71.6 (C-4′), 78.5 (C-5′), 62.9 (C-6′), 41.1 (C-1″), 51.9 (C-2″), 41.9 (C-3″), 35.2 (C-4″), 80.0 (C-5″), 14.5 (C-6″), 64.8 (C-7″), 41.3 (C-8″), 16.2 (C-9″), 66.6 (C-10″). *Jasminum nudiflorum* (Oleaceae).[27)]

38. Jasnudifloside I



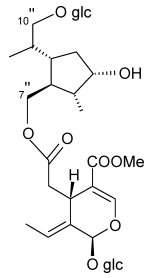
$C_{26}H_{38}O_{12}$: 542.2363; colorless amorphous powder; $[\alpha]_D^{26}$ −186.0° (c=0.39, MeOH); UV (MeOH): 236 (4.00); IR (KBr): 33.97 1725, 1705, 1622, 1074; ^{1}H-NMR (500 MHz, CD_3OD): 5.85 (br s, H-1), 7.42 (s, H-3), 3.99 (dd, 9.0, 4.0, H-5), 2.37 (dd, 13.0, 4.0, H-6), 2.45 (dd, 13.0, 9.0, H-6), 6.06 (qd, 7.0, 1.0, H-8), 1.83 (dd, 7.0, 1.0, H_3-10), 4.80 (d, 7.5, H-1′), 3.26—3.29 (m, H-2′, 4′, 5′), 3.40 (t, 9.0, H-3′), 3.88 (dd, 11.5, 2.0, H_2-6′), 1.85 (m, H-1″), 1.71 (m, H-2″), 1.82 (m, H-3″), 1.91 (m, H-4″), 2.06 (d, 4.0, H-4″), 4.91 (m, H-5″), 1.01 (d, 7.0, H_3-6″), 3.65 (m, H_2-7″), 2.03 (d, 4.0, H-8″), 0.98 (d, 7.0, H_3-9″), 4.14 (dd, 11.5, 4.0, H-10″), 4.29 (dd, 11.5, 9.0, H-10″); ^{13}C-NMR (125 MHz, CD_3OD): 95.2 (C-1), 153.3 (C-3), 111.4 (C-4), 31.7 (C-5), 44.1 (C-6), 173.9 (C-7), 123.5 (C-8), 132.5 (C-9), 13.2 (C-10), 168.8 (C-11), 100.9 (C-1′), 74.8 (C-2′), 78.0 (C-3′), 71.6 (C-4′), 78.5 (C-5′), 62.8 (C-6′), 41.7 (C-1″), 53.9 (C-2″), 45.6 (C-3″), 32.2 (C-4″), 82.6 (C-5″), 13.3 (C-6″), 63.4 (C-7″), 37.6 (C-8″), 19.2 (C-9″), 68.1 (C-10″). *Jasminum nudiflorum* (Oleaceae).[27)]

39. Jasnudifloside J



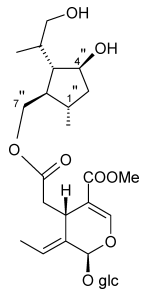
$C_{26}H_{38}O_{12}$: 542.2363; colorless amorphous powder; $[\alpha]_D^{23}$ −189.0° (c=0.17, MeOH); UV (MeOH): 237 (4.04); IR (KBr): 3406, 1732, 1713, 1624, 1074, 822; ^{1}H-NMR (500 MHz, CD_3OD): 5.91 (br s, H-1), 7.46 (s, H-3), 4.00 (dd, 12.0, 4.0, H-5), 2.30 (dd, 12.5, 12.0, H-6), 2.49 (dd, 12.5, 4.0, H-6), 6.08 (br q, 7.0, H-8), 1.82 (dd, 7.0, 1.0, H_3-10), 4.80 (d, 8.0, H-1′), 3.27 (m, H-2′), 3.40 (t, 9.0, H-3′), 3.28—3.36 (m, H-4′, 5′), 3.63 (dd, 12.0, 6.5, H-6′), 3.90 (dd, 12.0, 2.0, H-6′), 1.69 (m, H-1″), 1.85 (m, H-2″), 2.20 (m, H-3″), 1.35 (ddd, 13.5, 8.5, 2.5, H-4″), 2.15 (m, H-4″), 4.03 (m, H-5″), 1.00 (d, 6.5, H_3-6″), 4.07 (d, 4.0, H_2-7″), 2.15 (m, H-8″), 0.96 (d, 7.0, H_3-9″), 4.29 (dd, 12.0, 10.5, H-10″), 4.00 (dd, 12.0, 3.0, H-10″); ^{13}C-NMR (125 MHz, CD_3OD): 95.0 (C-1), 153.5 (C-3), 110.6 (C-4), 32.5 (C-5), 44.1 (C-6), 173.9 (C-7), 123.6 (C-8), 132.0 (C-9), 13.1 (C-10), 168.7 (C-11), 100.8 (C-1′), 74.8 (C-2′), 78.0 (C-3′), 71.6 (C-4′), 78.6 (C-5′), 62.8 (C-6′), 43.9 (C-1″), 43.7 (C-2″), 41.0 (C-3″), 39.3 (C-4″), 74.1 (C-5″), 12.4 (C-6″), 66.3 (C-7″), 36.0 (C-8″), 13.3 (C-9″), 68.0 (C-10″). *Jasminum nudiflorum* (Oleaceae).[27]

40. Jasnudifloside K



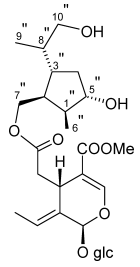
$C_{33}H_{52}O_{18}$: 736.3153; colorless amorphous powder; $[\alpha]_D^{24}$ −135.0° (c=0.55, MeOH); UV (MeOH): 236 (4.09); IR (KBr): 3394, 1730, 1707, 1636, 1078, 818; ^{1}H-NMR (500 MHz, CD_3OD): 5.94 (br s, H-1), 7.53 (s, H-3), 4.00 (dd, 9.5, 5.0, H-5), 2.51 (dd, 14.0, 9.5, H-6), 2.72 (dd, 14.0, 5.0, H-6), 6.12 (br q, 7.5, H-8), 1.75 (dd, 7.0, 1.5, H_3-10), 3.72 (s, MeO-11), 4.81 (d, 8.0, H-1′), 3.26—3.34 (m, H-2′, 4′, 5′), 3.41 (t, 9.0, H-3′), 3.66 (dd, 12.0, 5.5, H-6′), 3.86 (dd, 12.0, 2.0, H-6′), 1.71 (m, H-1″), 1.82 (m, H-2″), 1.73 (m, H-3″), 1.54 (ddd, 13.5, 7.5, 4.5, H-4″), 1.90 (m, H-4″), 4.04 (q, 4.5, H-5″), 0.91 (d, 7.0, H_3-6″), 3.95 (dd, 11.5, 6.0, H-7″), 4.20 (dd, 11.5, 4.5, H-7″), 1.84 (m, H-8″), 1.00 (d, 6.0, H_3-9″), 3.56 (dd, 9.0, 5.0, H-10″), 3.76 (dd, 9.0, 7.0, H-10″), 4.24 (d, 7.5, H-1‴), 3.17 (dd, 9.0, 7.5, H-2‴), 3.26—3.34 (m, H-3‴, 4‴, 5‴), 3.67 (dd, 12.0, 5.5, H-6‴), 3.90 (dd, 12.0, 2.0, H-6‴); ^{13}C-NMR (125 MHz, CD_3OD): 94.9 (C-1), 155.2 (C-3), 109.4 (C-4), 32.1 (C-5), 41.3 (C-6), 173.5 (C-7), 124.7 (C-8), 130.7 (C-9), 13.9 (C-10), 168.6 (C-11), 52.0 (OMe), 100.6 (C-1′), 74.8 (C-2′), 77.9 (C-3′), 71.7 (C-4′)[a], 78.5 (C-5′)[b], 62.9 (C-6′)[c], 43.3 (C-1″), 47.5 (C-2″), 43.3 (C-3″), 37.1 (C-4″), 75.5 (C-5″), 13.7 (C-6″), 67.9 (C-7″), 38.1 (C-8″), 16.9 (C-9″), 74.2 (C-10″), 104.4 (C-1‴), 75.2 (C-2‴), 77.9 (C-3‴), 71.6 (C-4‴)[a], 78.2 (C-5‴)[b], 62.8 (C-6‴)[c]. *Jasminum nudiflorum* (Oleaceae).[27]

41. Nudifloside D



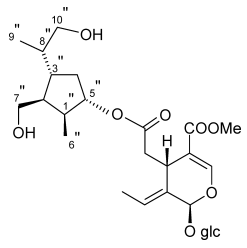
$C_{27}H_{42}O_{13}$: 574.2625; colorless amorphous powder; $[\alpha]_D^{24}$ −161.0° (c=0.41, MeOH); UV (MeOH): 237 (4.08); IR (KBr): 3397, 1731, 1709, 1632, 1078, 818; ^{1}H-NMR (500 MHz, CD_3OD): 5.94 (br s, H-1), 7.53 (s, H-3), 4.01 (dd, 9.0, 4.5, H-5), 2.48 (dd, 14.5, 9.0, H-6), 2.73 (dd, 14.5, 4.5, H-6), 6.12 (br q, 7.0, H-8), 1.75 (dd, 7.5, 1.5, H_3-10), 3.72 (s, MeO-11), 4.81 (d, 7.5, H-1′), 3.32—3.40 (m, H-2′, 4′, 5′), 3.41 (t, 9.0, H-3′), 3.67 (dd, 12.0, 5.5, H-6′), 3.89 (dd, 12.0, 2.0, H-6′), 2.01 (m, H-1″), 1.59 (m, H-2″, 3″), 4.04 (m, H-4″), 1.44 (ddd, 14.5, 9.0, 5.5, H-5″), 1.78 (m, H-5″), 1.03 (d, 6.5, H_3-6″), 3.93 (dd, 10.5, 6.5, H-7″), 4.17 (dd, 10.5, 4.5, H-7″), 1.72 (m, H-8″), 0.97 (d, 7.0, H_3-9″), 3.40 (dd, 11.0, 7.5, H-10″), 3.57 (dd, 11.0, 5.5, H-10″); ^{13}C-NMR (125 MHz, CD_3OD): 95.0 (C-1), 155.2 (C-3), 109.4 (C-4), 32.0 (C-5), 41.3 (C-6), 173.3 (C-7), 124.8 (C-8), 130.7 (C-9), 13.7 (C-10), 168.7 (C-11), 51.9 (OMe), 100.7 (C-1′), 74.8 (C-2′), 78.0 (C-3′), 71.5 (C-4′), 78.5 (C-5′), 62.8 (C-6′), 36.5 (C-1″), 48.7 (C-2″), 54.8 (C-3″), 76.4 (C-4″), 43.5 (C-5″), 20.2 (C-6″), 63.4 (C-7″), 38.1 (C-8″), 15.9 (C-9″), 67.2 (C-10″). *Jasminum nudiflorum* (Oleaceae).[27]

42. Jasuroside E



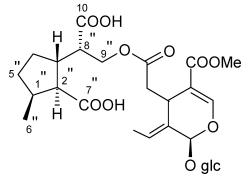
$C_{27}H_{42}O_{13}$: 574.2625; amorphous solid; $[\alpha]_D^{25}$ −143.0° (c=0.2, MeOH); UV (MeOH): 236 (4.04); IR (neat): 3399, 2958, 2884, 1693, 1633, 1513, 1440, 1382, 1305, 1265, 1205, 1160, 991, 854, 815, 769; ^{1}H-NMR (300 MHz, CD_3OD): 5.94 (s, H-1), 7.53 (s, H-3), 4.00 (dd, 9.0, 4.6, H-5), 2.50 (dd, 14.0, 9.0, H-6), 2.72 (dd, 14.0, 4.6, H-6), 6.12 (q, 7.2, H-8), 1.75 (d, 7.2, H_3-10), 4.81 (d, 8.0, H-1′), 3.30—3.90 (m, H-2′, 3′, 4′, 5′, 6′), 1.72 (m, H-2″), 1.70 (m, H-3″), 1.55 (m, H-4″), 1.96 (m, H-4″), 4.04 (m, H-5″), 0.98 (d, 5.6, H_3-6″) 4.17 (dd, 11.0, 4.4, H-7″), 3.93 (dd, 11.0, 5.6, H-7″), 1.74 (m, H-8″), 1.00 (d, 6.8, H_3-9″), 3.41 (m, H-10″), 3.59 (m, H-10″), 3.72 (s, MeO-11); ^{13}C-NMR (75 MHz, CD_3OD): 94.9 (C-1), 155.1 (C-3), 109.4 (C-4), 32.0 (C-5), 41.2 (C-6), 173.3 (C-7), 124.7 (C-8), 130.7 (C-9), 13.6 (C-10), 168.6 (C-11), 51.9 (OMe), 100.6 (C-1′), 74.8 (C-2′), 78.5 (C-3′), 71.5 (C-4′), 77.9 (C-5′), 62.8 (C-6′), 43.2 (C-1″), 47.9 (C-2″), 43.1 (C-3″), 37.0 (C-4″), 75.7 (C-5″), 14.0 (C-6″), 68.1 (C-7″), 40.8 (C-8″), 16.6 (C-9″), 66.5 (C-10″). *Jasminum urophyllum* (Oleaceae).[28]

43. Jasuroside F



$C_{27}H_{42}O_{13}$: 574.2625; amorphous powder; $[\alpha]_D^{25}$ −130.0° (c=0.1, MeOH); UV (MeOH): 236 (4.03); IR (neat): 3399, 2927, 2879, 1708, 1633, 1416, 1440, 1382, 1305, 1284, 1205, 1191, 1160, 1078, 991, 943, 921, 854, 817, 771; ^{1}H-NMR (300 MHz, CD_3OD): 5.96 (s, H-1), 7.54 (s, H-3), 4.00 (dd, 9.0, 4.4, H-5), 2.43 (dd, 14.4, 9.0, H-6), 2.70 (dd, 14.4, 4.4, H-6), 6.11 (q, 7.2, H-8), 1.75 (d, 7.2, H_3-10), 3.72 (s, MeO-11), 4.81 (d, 7.6, H-1′), 3.30—3.90 (m, H-2′, 3′, 4′, 5′, 6′), 2.01 (m, H-1″), 1.70 (m, H-2″), 2.04 (m, H-3″), 1.59 (m, H-4″), 1.64 (m, H-4″), 5.00 (m, H-5″), 0.94 (d, 7.2, H_3-6″), 3.88 (dd, 11.0, 2.0, H-7″), 3.66 (dd, 11.0, 5.8, H-7″), 1.73 (m, H-8″), 0.99 (d, 6.4, H_3-9″), 3.34 (m, H-10″), 3.52 (m, H-10″); ^{13}C-NMR (75.4 MHz, CD_3OD): 95.2 (C-1), 155.2 (C-3), 109.4 (C-4), 31.9 (C-5), 41.2 (C-6), 173.0 (C-7), 124.7 (C-8), 130.8 (C-9), 13.7 (C-10), 168.5 (C-11), 51.9 (MeO-11), 100.9 (C-1′), 74.7 (C-2′), 78.4 (C-3′), 71.6 (C-4′), 77.9 (C-5′), 62.7 (C-6′), 41.1 (C-1″), 51.1 (C-2″), 41.9 (C-3″), 35.2 (C-4″), 79.9 (C-5″), 14.4 (C-6″), 64.8 (C-7″), 41.5 (C-8″), 16.7 (C-9″), 67.2 (C-10″). *Jasminum urophyllum* (Oleaceae).[28]

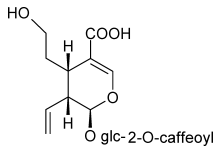
44. 2″-*epi*-Frameroside



$C_{27}H_{38}O_{15}$: 602.2210; amorphous powder; $[\alpha]_D^{24}$ −116.0° (c=0.22, MeOH); UV (MeOH): 237 (3.98); IR (KBr): 3413, 1717, 1636, 1580, 1078; ^{1}H-NMR (500 MHz, CD_3OD): 5.92 (br s, H-1), 7.52 (s, H-3), 3.99 (dd, 9.0, 4.5, H-5), 2.71 (dd, 14.0, 4.5, H-6), 2.48 (dd, 14.0, 9.0, H-6), 6.11 (qd, 7.0, 1.0, H-8), 1.74 (dd, 7.0, 1.0, H_3-10), 3.71 (s, MeO-11), 4.81 (d, 8.0, H-1′), 3.41 (t, 8.5, H-3′), 3.71 (dd, 12.0, 6.0, H-6′), 3.90 (dd, 12.0, 2.0, H-6′), 2.29 (m, H-1″), 2.45 (m, H-2″), 2.59 (br dd, 8.0, 4.5, H-3″), 1.83 (br dt, 12.0, 6.0, H-4″), 1.53 (dt, 12.0, 8.0, H-4″), 1.23 (m, H-5″), 2.03 (dt, 12.0, 7.0, H-5″), 1.09 (d, 7.0, H_3-6″), 2.90 (m, H-8″), 4.27 (m, H_2-9″); ^{13}C-NMR (125 MHz, CD_3OD): 94.9 (C-1), 155.2 (C-3), 109.4 (C-4), 31.9 (C-5), 41.1 (C-6), 172.9 (C-7), 124.8 (C-8), 130.7 (C-9), 13.7 (C-10), 168.6 (C-11), 51.9 (OMe), 100.6 (C-1′), 74.8 (C-2′), 78.6 (C-3′), 71.6 (C-4′), 78.0 (C-5′), 62.8 (C-6′), 40.3 (C-1″), 55.2 (C-2″), 41.8 (C-3″), 30.9 (C-4″), 35.0 (C-5″), 21.9 (C-6″), 179.0 (C-7″), 47.3 (C-8″), 66.0 (C-9″), 177.0 (C-10″). *Syringa afghanica* (Oleaceae).[45]

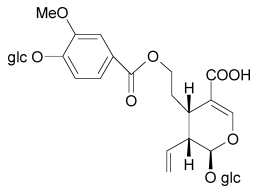
Group 3: Aromatic Conjugated Secoiridoids

45. Alboside IV



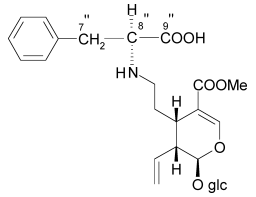
$C_{25}H_{30}O_{13}$: 538.1686; gum; $[\alpha]_D$ −51.5° (c=0.5, H_2O); UV (MeOH): 210, 238; IR (KBr): 3464, 1693, 1626, 1387, 1276, 1187, 1072, 1030; ^{1}H-NMR (400 MHz, $CDCl_3$): 5.50 (d, 6.5, H-1), 7.30 (s, H-3), 2.90 (br dd, 12.5, 6.5, H-5), 1.22 (ddd, 16.0, 12.5, 6.5, H-6), 1.66 (dt, 16.0, 6.5, H-6), 3.70 (m, H_2-7), 5.80 (ddd, 17.0, 10.0, 8.0, H-8), 2.75 (dd, 8.0, 6.5, H-9), 5.23 (dd, 10.0, 1.5, H-10), 5.50 (dd, 17.0, 1.5, H-10), 4.52 (d, 8.0, H-1′), 4.99 (dd, 12.2, 3.7, H-2′), 3.20—3.89 (m, H-2′, 3′, 4′, 5′, H_2-6′), 7.05 (d, 1.5, H-2″), 6.75 (d, 8.0, H-5″), 6.95 (dd, 8.0, 1.5, H-6″), 7.43 (d, 15.8, H-7″), 6.19 (d, 15.8, H-8″); ^{13}C-NMR (100 MHz, $CDCl_3$): 98.7 (C-1), 149.7 (C-3), 112.2 (C-4), 30.3 (C-5), 29.1 (C-6), 61.1 (C-7), 135.1 (C-8), 43.5 (C-9), 118.6 (C-10), 166.5 (C-11), 95.4 (C-1′), 73.1 (C-2′), 76.8 (C-3′), 70.1 (C-4′), 77.3 (C-5′), 62.7 (C-6′), 125.3 (C-1″), 113.8 (C-2″), 145.8 (C-3″), 148.8 (C-4″), 116.0 (C-5″), 121.4 (C-6″), 114.9 (C-7″), 145.1 (C-8″), 166.5 (C-9″). *Chioccoca alba* (Rubiaceae).[29]

46. 7-*O*-(4-β-D-Glucopyranosyloxy-3-methoxybenzoyl)-secologanolic acid



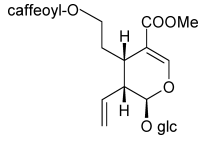
$C_{30}H_{40}O_{18}$: 688.2214; amorphous powder; $[\alpha]_D^{26}$ −96.4° (c=0.149, MeOH); UV (MeOH): 203 (3.26), 214 (4.28), 243 (4.02), 289 (3.56); ^{1}H-NMR (400 MHz, CD_3OD): 5.56 (d, 6.3, H-1), 7.46 (s, H-3), 2.98 (m, H-5), 1.94 (m, H-6), 2.19 (m, H-6), 4.35 (m, H_2-7), 5.83 (ddd, 17.6, 10.2, 8.8, H-8), 2.70 (m, H-9), 5.26 (br d, 10.2, H-10), 5.31 (br d, 17.6, H-10), 4.70 (d, 7.8, H-1′), 3.67 (m, H-6′, 6‴), 3.87 (m, H-6′, 6‴), 7.61 (d, 2.0, H-2″), 7.21 (d, 8.4, H-5″), 7.64 (dd, 8.4, 2.0, H-6″), 3.91 (s, MeO-3″), 5.02 (d, 7.3, H-1‴); ^{13}C-NMR (100 MHz, CD_3OD): 97.7 (C-1), 31.4 (C-5), 30.2 (C-6), 64.8 (C-7), 136.0 (C-8), 45.5 (C-9), 119.5 (C-10), 100.2 (C-1′), 74.8 (C-2′), 78.5 (C-3′), 71.7 (C-4′), 78.1 (C-5′), 62.9 (C-6′), 125.7 (C-1″), 114.3 (C-2″), 150.5 (C-3″), 152.2 (C-4″), 116.5 (C-5″), 124.7 (C-6″), 167.8 (C-7″), 102.0 (C-1‴), 74.7 (C-2‴), 78.4 (C-3‴), 71.3 (C-4‴), 78.0 (C-5‴), 62.5 (C-6‴), 56.8 (MeO-3″), the signals for C-3, C-4 and C-11 were not detected directly from the spectrum but their approximate values from HMBC were 153.8, 112.5 and 170.1, respectively. *Lonicera japonica* (Caprifoliaceae).[30]

47. L-Phenylalaninosecologanin



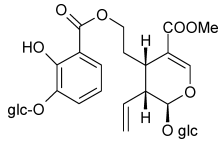
$C_{26}H_{35}NO_{11}$: 537.2210; amorphous powder; $[\alpha]_D^{26}$ −112.4° (c=0.214, MeOH); UV (MeOH): 209 (3.99), 234 (4.05); ^{1}H-NMR (400 MHz, CD_3OD): 5.51 (d, 6.6, H-1), 7.50 (d, 0.7, H-3), 2.65 (m, H-5), 1.85 (m, H_2-6), 2.88 (ddd, 12.2, 9.8, 5.4, H-7), 3.03 (ddd, 12.2, 9.5, 6.3, H-7), 5.71 (ddd, 17.2, 10.2, 8.5, H-8), 2.57 (m, H-9), 5.26 (dd, 10.2, 1.1, H-10), 5.29 (br d, 17.2, H-10), 3.69 (s, MeO-11), 4.67 (d, 7.8, H-1′), 3.18 (dd, 9.3, 7.8, H-2′), 3.24—3.38 (m, H-3′, 4′, 5′, 7″), 3.64 (dd, 12.0, 6.1, H-6′), 3.90 (dd, 12.0, 2.0, H-6′), 7.33 (m, H-2″, 3″, 5″, 6″), 7.27 (m, H-4″), 3.10 (dd, 14.5, 7.4, H-7″), 3.74 (dd, 7.4, 5.5, H-8″); ^{13}C-NMR (100 MHz, CD_3OD): 97.5 (C-1), 154.5 (C-3), 110.1 (C-4), 32.1 (C-5), 27.9 (C-6), 46.9 (C-7), 134.9 (C-8), 45.3 (C-9), 120.4 (C-10), 169.3 (C-11), 52.0 (OMe), 100.3 (C-1′), 74.7 (C-2′), 78.1 (C-3′), 71.4 (C-4′), 78.6 (C-5′), 62.9 (C-6′), 137.1 (C-1″), 130.0 (C-2″, 3″, 5″, 6″), 128.5 (C-4″), 37.6 (C-7″), 64.9 (C-8″), 172.6 (C-9″). *Lonicera japonica* (Caprifoliaceae).[30]

48. Grandifloroside-11-methyl ester



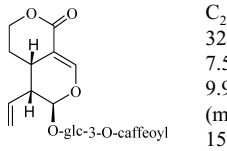
$C_{26}H_{32}O_{13}$: 552.1842; amorphous powder; $[\alpha]_D^{26}$ −94.0° (c=0.66, MeOH); UV (MeOH): 222 (4.26), 234 (4.25), 302sh (4.07), 328 (4.17); IR (KBr): 3394, 1693, 1632, 1609, 1516, 1443, 1074; ^{1}H-NMR (500 MHz, CD_3OD): 5.57 (d, 6.5, H-1), 7.49 (d, 0.5, H-3), 2.93 (br q, 6.5, H-5), 1.87 (td, 13.5, 7.0, H-6), 2.06 (td, 13.5, 7.0, H-6), 4.17 (dt, 11.0, 7.0, H-7), 4.23 (dt, 11.0, 7.0, H-7), 5.80 (ddd, 17.0, 10.5, 8.5, H-8), 2.67 (dt, 8.5, 6.5, H-9), 5.27 (dd, 10.5, 1.5, H-10), 5.32 (dd, 17.0, 1.5, H-10), 3.68 (s, MeO), 4.70 (d, 8.0, H-1′), 3.19 (dd, 9.0, 8.0, H-2′), 3.36 (t, 9.0, H-3′), 3.26 (t, 9.0, H-4′), 3.32 (ddd, 9.0, 6.0, 2.0, H-5′), 3.66 (dd, 12.0, 6.0, H-6′), 3.90 (dd, 12.0, 2.0, H-6′), 7.03 (d, 2.0, H-2″), 6.78 (d, 8.0, H-5″), 6.94 (dd, 8.0, 2.0, H-6″), 7.53 (d, 16.0, H-7″), 6.22 (d, 16.0, H-8″); ^{13}C-NMR (125 MHz, CD_3OD): 97.7 (C-1), 153.6 (C-3), 111.5 (C-4), 31.6 (C-5), 30.2 (C-6), 64.1 (C-7), 135.7 (C-8), 45.4 (C-9), 119.6 (C-10), 169.2 (C-11), 51.8 (OMe), 100.2 (C-1′), 74.7 (C-2′), 78.0 (C-3′), 71.6 (C-4′), 78.4 (C-5′), 62.8 (C-6′), 127.7 (C-1″), 115.1 (C-2″), 146.8 (C-3″), 149.6 (C-4″), 116.5 (C-5″), 122.9 (C-6″), 146.9 (C-7″), 115.1 (C-8″), 169.2 (C-9″). *Adina racemosa* (Rubiaceae).[10]

49. Depressine



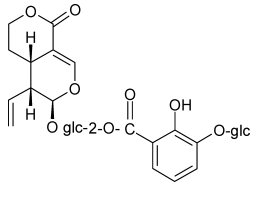
$C_{30}H_{40}O_{18}$: 688.2214; UV (MeOH): 220, 235, 317; ^{1}H-NMR (500 MHz, CD_3OD): 5.59 (d, 6.6, H-1), 7.50 (d, 0.5, H-3), 2.98 (br td, 7.3, 7.0, 5.5, 0.5, H-5), 2.14 (m, 13.0, 7.0, 6.5, 6.0, H-6), 1.99 (m, 13.0, 7.3, 7.0, 5.5, H-6), 4.42 (m, H-7), 5.82 (ddd, 17.0, 10.0, 8.5, H-8), 2.69 (ddd, 8.5, 6.6, 5.5, H-9), 5.32 (dd, 17.4, 1.2, H-10), 5.27 (dd, 10.6, 1.2, H-10), 3.63 (s, OMe), 4.70 (d, 8.0, H-1′), 3.20—3.40 (m, H-2′, 3′, 4′, 5′), 3.89 (dd, 11.8, 1.9, H-6′), 3.68 (dd, 11.8, 6.5, H-6′)[a], 7.41 (dd, 8.3, 1.9, H-4″), 6.88 (t, 8.3, H-5″), 7.55 (dd, 8.3, 1.9, H-6″), 4.91 (d, 7.5, H-1‴), 3.20—3.40 (m, H-2‴, 3‴, 4‴, 5‴), 3.89 (dd, 11.8, 1.9, H-6‴), 3.64 (dd, 12.0, 6.5, H-6‴)[a]; ^{13}C-NMR (125 MHz, CD_3OD): 98.0 (C-1), 153.9 (C-3), 108.0 (C-4), 30.0 (C-5), 31.7 (C-6), 66.4 (C-7), 136.9 (C-8), 46.5 (C-9), 118.0 (C-10), 169.2 (C-11), 50.2 (OMe), 101.0 (C-1′), 75.1 (C-2′), 77.7 (C-3′)[a], 71.9 (C-4′), 78.3 (C-5′)[b], 62.8 (C-6′)[c], 113.0 (C-1″), 152.7 (C-2″), 147.4 (C-3″), 125.0 (C-4″), 120.3 (C-5″), 124.2 (C-6″), 170.9 (C-7″), 104.3 (C-1‴), 75.1 (C-2‴), 77.8 (C-3‴)[a], 71.9 (C-4‴), 78.4 (C-5‴)[b], 62.7 (C-6‴)[c]. *Gentiana depressa* (Gentianaceae).[31]

50. 3′-*O*-Caffeoylsweroside



$C_{25}H_{28}O_{12}$: 520.1580; white amorphous solid; $[\alpha]_D$ −134.0° (c=0.10, MeOH); UV (MeOH): 219 (4.13), 240 (4.12), 297 (3.99), 328 (4.09); IR (KBr): 3360, 2930, 1693, 1610, 1520, 1445, 1408, 1280, 1070; ^{1}H-NMR (270 MHz, CD_3OD): 5.56 (d, 1.7, H-1), 7.55 (d, 2.3, H-3), 3.03-3.10 (m, H-5), 1.63—1.70 (m, H_2-6), 4.25—4.42 (m, H_2-7), 5.48 (m, H-8), 2.63—2.68 (m, H-9), 5.23 (dd, 9.9, 2.0, H-10), 5.26 (dd, 17.5, 2.0, H-10), 4.76 (d, 7.3, H-1′), 3.38—3.42 (m, H-2′, 5′), 5.01 (t, 8.9, H-3′), 3.49 (t, 8.9, H-4′), 3.65 (m, H-6′), 3.86 (dd, 11.9, 2.0, H-6′), 7.00 (d, 2.0, H-2″), 6.73 (d, 8.2, H-5″), 6.90 (dd, 8.2, 2.0, H-6″), 7.54 (d, 15.9, H-7″), 6.28 (d, 15.9, H-8″); ^{13}C-NMR (67.8 MHz, CD_3OD): 98.9 (C-1), 154.8 (C-3), 106.7 (C-4), 29.2 (C-5), 26.7 (C-6), 70.5 (C-7), 134.0 (C-8), 44.6 (C-9), 121.7 (C-10), 169.2 (C-11), 100.5 (C-1′), 74.0 (C-2′), 79.5 (C-3′), 70.6 (C-4′), 79.0 (C-5′), 63.2 (C-6′), 128.6 (C-1″), 115.9 (C-2″), 147.6 (C-3″), 150.3 (C-4″), 117.3 (C-5″), 123.7 (C-6″), 147.8 (C-7″), 116.1 (C-8″), 169.8 (C-9″). *Anthocephalus chinensis* (Rubiaceae).[32]

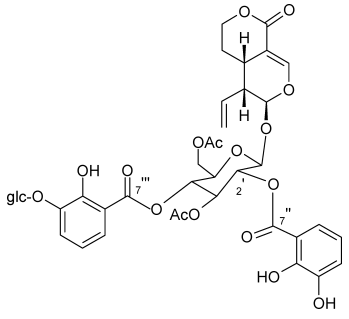
51. Gentiotrifloroside



$C_{29}H_{36}O_{17}$: 656.1952; colorless powder; $[\alpha]_D^{20}$ −109.5° (c=0.5, MeOH); UV (MeCN-H_2O): 212, 247, 318; ^{1}H-NMR (500 MHz, CD_3OD): 5.46 (d, 1.5, H-1), 7.13 (d, 2.5, H-3), 2.68 (m, H-5), 1.51 (m, H_α-6), 1.67 (m, H_β-6), 4.09 (m, H_α-7), 4.30 (m, H_β-7), 5.40 (dt, 17.1, 9.8, H-8), 2.62 (ddd, 9.8, 5.5, 1.5, H-9), 5.22 (dd, 9.8, 1.9, H-10), 5.26 (dd, 17.1, 1.9, H-10), 5.0 (d, 8.0, H-1′), 5.03 (dd, 8.9, 8.2, H-2′), 3.52 (t, 9.0, H-3′), 3.43 (t, 8.2 H-4′), 3.47 (m, H-5′), 3.72 (dd, 10.2, 5.6, H-6′), 3.94 (dd, 11.9, 1.8, H-6′), 7.42 (dd, 8.0, 1.5, H-4″), 6.84 (t, 8.0, H-5″), 7.54 (dd, 8.0, 1.5, H-6″), 4.95 (d, 7.4, H-1‴), 3.79 (dd, 8.7, 8.5, H-2‴), 3.50 (t, 7.7, H-3‴), 3.40 (t, 9.2, H-4‴), 3.45 (m, H-5‴), 3.69 (dd, 10.3, 5.6, H-6‴), 3.90 (dd, 12.1, 2.1, H-6‴); ^{13}C-NMR (125 MHz, CD_3OD): 97.7, (C-1), 153.4 (C-3), 105.7 (C-4), 28.8 (C-5), 25.7 (C-6), 69.7 (C-7), 132.7 (C-8), 43.3 (C-9), 121.0 (C-10), 167.1 (C-11), 97.1 (C-1′), 75.7 (C-2′), 75.1 (C-3′), 71.4 (C-4′), 78.3 (C-5′), 62.6 (C-6′), 114.4 (C-1″), 153.1 (C-2″), 147.4 (C-3″), 124.9 (C-4″), 120.5 (C-5″), 124.7 (C-6″), 170.7 (C-7″), 103.4 (C-1‴), 75.1 (C-2‴), 77.8 (C-3‴),

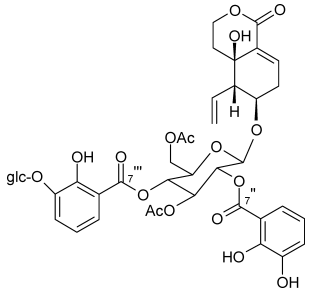
71.8 (C-4‴), 78.7 (C-5‴), 62.6 (C-6‴). *Gentiana triflora*, *G. rigescens* (Gentianaceae).[33]

52. Macrophylloside A



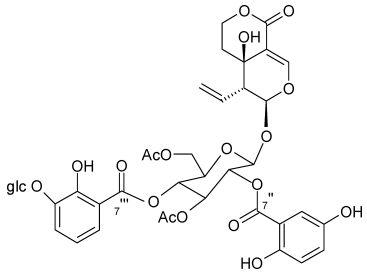
$C_{40}H_{44}O_{22}$: 876.2323; amorphous powder, mp 135—137 °C; $[\alpha]_D^{20}$ −17.0° (c=0.722, MeOH); UV (MeOH): 237 (4.42), 255 (3.80), 325 (1.25); IR (KBr): 3520—3250, 1735, 1675, 1605, 1500; ^{1}H-NMR (?, CD_3OD): 5.40 (br s, H-1), 7.27 (d, 1.7, H-3), 2.68 (m, H-5), 1.53 (m, H-6), 1.67 (m, H-6), 4.02 (br t, 11.1, H-7), 4.27 (m, H-7), 5.42 (m, H-8), 2.68 (m, H-9), 5.31 (dd, 17.1, 1.9, H-10), 5.26 (dd, 10.0, 1.9, H-10), 5.37 (d, 8.1, H-1′), 5.38 (dd, 8.1, 9.5, H-2′), 5.80 (t, 9.5, H-3′), 5.48 (t, 9.5, H-4′), 4.27 (m, H-5′), 4.36 (dd, 12.6, 4.7, H-6′), 4.29 (dd, 12.6, 2.3, H-6′), 7.03 (dd, 8.0, 1.4, H-4″), 6.72 (t, 8.0, H-5″), 7.22 (dd, 8.0, 1.4, H-6″), 7.46 (dd, 8.1, 1.4, H-4‴), 6.88 (t, 8.1, H-5‴), 7.52 (dd, 8.1, 1.4, H-6‴), 4.93 (d, 7.4, H-1⁗), 3.56 (m, H-2⁗), 3.52 (m, H-3⁗), 3.44 (t, 9.0, H-4⁗), 3.45 (m, H-5⁗), 4.06 (br d, 10.9, H-6⁗), 3.72 (dd, 10.9, 4.4, H-6⁗), 2.09, 1.88 (each s, 2×Ac); ^{13}C-NMR (?, CD_3OD): 97.7 (C-1), 153.1 (C-3), 106.1 (C-4), 28.7 (C-5), 25.6 (C-6), 69.4 (C-7), 132.5 (C-8), 43.1 (C-9), 121.4 (C-10), 167.0 (C-11), 96.7 (C-1′), 72.8 (C-2′), 72.7 (C-3′), 71.2 (C-4′), 73.2 (C-5′), 63.4 (C-6′), 112.9 (C-1″), 151.2 (C-2″), 147.2 (C-3″), 121.0 (C-4″), 120.8 (C-5″), 122.7 (C-6″), 170.4 (C-7″), 114.5 (C-1‴), 152.6 (C-2‴), 147.3 (C-3‴), 124.9 (C-4‴), 120.4 (C-5‴), 124.2 (C-6‴), 169.4 (C-7‴), 103.2 (C-1⁗), 74.9 (C-2⁗), 77.7 (C-3⁗), 71.0 (C-4⁗), 78.3 (C-5⁗), 62.4 (C-6⁗), 20.5, 20.6, 171.4, 172.2 (2×Ac). *Gentiana macrophylla* (Gentianaceae).[34]

53. Macrophylloside B



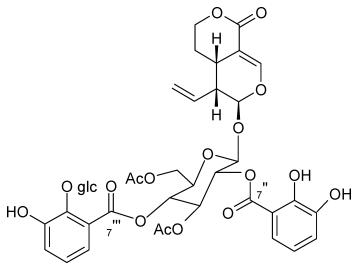
$C_{40}H_{44}O_{23}$: 892.2272; amorphous powder, mp 123—127 °C; $[\alpha]_D^{20}$ −9.0° (c=0.385, MeOH); UV (MeOH): 237 (4.42), 256 (3.81), 325 (1.21); IR (KBr): 3520—3230, 1745, 1680, 1605, 1507; ^{1}H-NMR (?, CD_3OD): 5.60 (br s, H-1), 7.14 (d, 1.7, H-3), 1.78 (m, H-6), 1.73 (br d, 12.5, H-6), 4.70 (br t, 11.0, H-7), 4.26 (m, H-7), 5.40 (m, H-8), 2.97 (m, H-9), 5.32 (dd, 17.0, 1.9, H-10), 5.28 (dd, 10.2, 1.9, H-10), 5.33 (d, 8.1, H-1′), 5.38 (dd, 9.5, 8.1, H-2′), 5.82 (t, 9.5, H-3′), 5.49 (t, 9.5, H-4′), 4.24 (m, H-5′), 4.37 (dd, 12.6, 4.6, H-6′), 4.29 (dd, 12.6, 1.8, H-6′), 7.05 (dd, 8.1, 1.5, H-4″), 6.72 (t, 8.1, H-5″), 7.26 (dd, 8.1, 1.5, H-6″), 7.45 (dd, 8.1, 1.5, H-4‴), 6.88 (t, 8.1, H-5‴), 7.51 (dd, 8.1, 1.5, H-6‴), 4.90 (d, 7.4, H-1⁗), 3.54 (m, H-2⁗), 3.49 (m, H-3⁗), 3.43 (t, 9.0, H-4⁗), 3.44 (m, H-5⁗), 3.91 (br d, 11.1, H-6⁗), 3.70 (dd, 11.1, 4.6, H-6⁗); ^{13}C-NMR (?, CD_3OD): 100.1 (C-1), 153.3 (C-3), 109.5 (C-4), 64.2 (C-5), 33.5 (C-6), 65.8 (C-7), 133.1 (C-8), 51.8 (C-9), 121.8 (C-10), 166.8 (C-11), 98.7 (C-1′), 72.6 (C-2′), 73.1 (C-3′), 70.7 (C-4′), 73.3 (C-5′), 63.2 (C-6′), 112.7 (C-1″), 151.7 (C-2″), 147.3 (C-3″), 121.0 (C-4″), 120.4 (C-5″), 122.8 (C-6″), 171.1 (C-7″), 114.5 (C-1‴), 152.6 (C-2‴), 147.5 (C-3‴), 124.9 (C-4‴), 120.5 (C-5‴), 124.2 (C-6‴), 169.3 (C-7‴), 103.3 (C-1⁗), 74.8 (C-2⁗), 77.7 (C-3⁗), 71.2 (C-4⁗), 78.3 (C-5⁗), 62.4 (C-6⁗), 20.5, 20.6, 171.4, 172.2 (2×Ac). *Gentiana macrophylla* (Gentianaceae).[34]

54. 2′-Gentisoylgelidoside



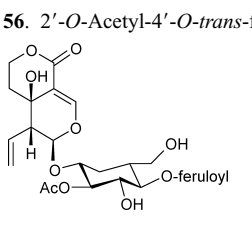
$C_{40}H_{44}O_{23}$: 892.2272; gum; $[\alpha]_D^{20}$ −8.0° (c=0.005, MeOH); IR (KBr): 3580—3240, 1680; ^{1}H-NMR (500 MHz, CD_3OD): 5.56 (d, 1.2, H-1), 7.08 (s, H-3), 1.78 (ddd, 13.0, 12.5, 5.1, H_α-6), 1.71 (br d, 13.0, H_β-6), 4.26 (m, H_α-7), 4.68 (ddd, 12.5, 11.6, 3.2, H_β-7), 5.38 (ddd, 17.0, 10.2, 8.5, H-8), 2.93 (dd, 8.5, 1.2, H-9), 5.32 (dd, 10.2, 1.9, H-10), 5.27 (dd, 17.0, 1.9, H-10), 5.25 (d, 8.0, H-1′), 5.29 (dd, 9.3, 8.0, H-2′), 5.79 (dd, 9.3, 9.3, H-3′), 5.45 (dd, 9.3, 9.3, H-4′), 4.19 (m, H-5′), 4.31 (dd, 12.3, 4.7, H-6′), 4.22 (dd, 12.3, 1.8, H-6′), 6.76 (d, 9.0, H-3″), 6.99 (dd, 9.0, 3.0, H-4″), 7.11 (d, 3.0, H-6″), 7.48 (dd, 8.1, 1.4, H-4‴), 6.86 (t, 8.1, H-5‴), 7.46 (dd, 8.1, 1.4, H-6‴), 4.84 (d, 7.5, H-1⁗), 3.37 (dd, 9.0, 7.5, H-2⁗), 3.49 (dd, 9.0, 9.0, H-3⁗), 3.43 (dd, 9.0, 9.0, H-4⁗), 3.38 (m, H-5⁗), 3.85 (dd, 12.1, 1.5, H-6⁗), 3.67 (dd, 12.1, 4.9, H-6⁗), 2.00 (s, Ac), 1.86 (s, Ac); ^{13}C-NMR (125 MHz, CD_3OD): 102.2 (C-1), 153.3 (C-3), 109.5 (C-4), 64.2 (C-5), 33.6 (C-6), 65.7 (C-7), 133.1 (C-8), 51.9 (C-9), 121.7 (C-10), 166.9 (C-11), 98.9 (C-1′), 73.0 (C-2′), 70.4 (C-3′), 72.6 (C-4′), 73.1 (C-5′), 63.1 (C-6′), 112.6 (C-1″), 156.2 (C-2″), 114.9 (C-3″), 119.9 (C-4″), 151.0 (C-5″), 126.5 (C-6″), 114.6 (C-1‴), 153.3 (C-2‴), 147.4 (C-3‴), 124.9 (C-4‴), 120.3 (C-5‴), 124.2 (C-6‴), 169.2 (C-7‴), 103.3 (C-1⁗), 74.6 (C-2⁗), 77.4 (C-3⁗), 71.0 (C-4⁗), 78.1 (C-5⁗), 62.4 (C-6⁗), 20.1, 20.3, 171.1, 172.2 (2×Ac). *Gentiana siphonantha* (Gentianaceae).[35]

55. Isomacrophylloside



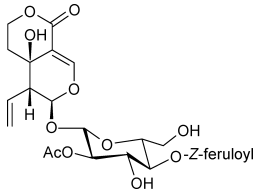
$C_{40}H_{44}O_{22}$: 876.2323; colorless gum; $[\alpha]_D^{20}$ −12.0° (c=0.003, MeOH); UV (MeOH): 240 (4.5), 254 (3.9), 326 (1.2); IR (KBr): 3510—3220, 1735, 1675, 1595, 1485; ^{1}H-NMR (500 MHz, CD_3OD): 5.36 (d, 1.0, H-1), 7.24 (d, 1.9, H-3), 2.66 (m, H-5), 1.65 (m, H-6), 1.52 (dddd, 12.9, 12.0, 11.8, 3.4, H-6), 4.27 (m, H-7), 4.00 (ddd, 12.0, 11.8, 1.7, H-7), 5.42 (ddd, 17.2, 10.1, 9.3, H-8), 2.66 (m, H-9), 5.23 (dd, 10.1, 2.0, H-10), 5.29 (dd, 17.2, 2.1, H-10), 5.40 (m, H-1′, 2′), 5.76 (t, 9.5, H-3′), 5.38 (t, 9.5, H-4′), 4.23 (m, H-5′), 4.34 (dd, 12.5, 1.7, H-6′), 4.25 (dd, 12.5, 4.4, H-6′), 7.00 (dd, 8.0, 1.5, H-4″), 6.70 (t, 8.0, H-5″), 7.21 (dd, 8.0, 1.5, H-6″), 7.15 (dd, 7.2, 2.2, H-4‴), 7.07 (dd, 8.2, 7.2, H-5‴), 7.11 (dd, 8.2, 2.2, H-6‴), 4.86 (d, 7.7, H-1⁗), 3.49 (dd, 9.3, 7.7, H-2⁗), 3.43 (dd, 9.3, 9.0, H-3⁗), 3.40 (t, 9.0, H-4⁗), 3.30 (m, H-5⁗), 3.84 (dd, 12.1, 2.3, H-6⁗), 3.71 (dd, 12.1, 5.3, H-6⁗), 1.93, 2.07 (each s, 2×OAc); ^{13}C-NMR (125 MHz, CD_3OD): 97.7 (C-1), 153.1 (C-3), 106.0 (C-4), 28.7 (C-5), 25.7 (C-6), 69.4 (C-7), 132.6 (C-8), 43.2 (C-9), 121.4 (C-10), 166.9 (C-11), 96.6 (C-1′), 72.8 (C-2′), 72.9 (C-3′), 70.8 (C-4′), 73.3 (C-5′), 63.4 (C-6′), 113.0 (C-1″), 151.3 (C-2″), 147.3 (C-3″), 121.0 (C-4″), 120.7 (C-5″), 123.0 (C-6″), 170.5 (C-7″), 126.2 (C-1‴), 151.8 (C-2‴), 144.9 (C-3‴), 126.4 (C-4‴), 122.7 (C-5‴), 122.4 (C-6‴), 167.1 (C-7‴), 106.1 (C-1⁗), 75.1 (C-2⁗), 77.7 (C-3⁗), 70.9 (C-4⁗), 78.8 (C-5⁗), 62.2 (C-6⁗). *Gentiana tibetica*.[21]

56. 2′-*O*-Acetyl-4′-*O*-*trans*-feruloylswertiamarin



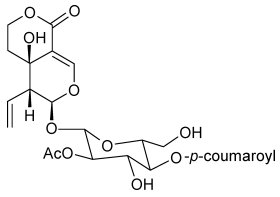
$C_{28}H_{32}O_{14}$: 592.1791; amorphous powder; $[\alpha]_D^{25}$ −150.0° (c=1.09, MeOH); UV (MeOH): 235 (4.36), 300sh (4.20), 328 (4.37); IR (nujol): 3600—3100, 1734, 1717, 1699, 1684, 1653, 1617, 1516; ^{1}H-NMR (400 MHz, CD_3OD): 5.66 (d, 1.5, H-1), 7.55 (s, H-3), 1.75 (ddd, 14.2, 2.9, 1.4, H-6), 1.85 (ddd, 14.2, 12.7, 5.3, H-6), 4.33 (ddd, 10.7, 5.3, 1.4, H-7), 4.74 (ddd, 12.7, 10.7, 2.9, H-7), 5.41 (ddd, 16.1, 9.0, 7.8, H-8), 2.92 (ddd, 7.8, 2.0, 1.5, H-9), 5.29 (ddd, 9.0, 6.3, 2.0, H-10), 5.35 (dd, 16.1, 6.3, H-10), 4.90 (d, 8.3, H-1′), 4.80 (dd, 9.8, 8.3, H-2′), 3.91 (dd, 9.8, 9.8, H-3′), 4.92 (dd, 9.8, 9.8, H-4′), 3.67 (ddd, 9.8, 6.8, 2.0, H-5′), 3.58 (dd, 12.2, 6.8, H-6′), 3.66 (br d, 12.2, H-6′), 7.19 (d, 2.0, H-2″), 6.81 (d, 8.3, H-5″), 7.08 (dd, 8.3, 2.0, H-6″), 7.67 (d, 16.1, H-7″), 6.39 (d, 16.1, H-8″), 3.88 (s, MeO-3″), 2.06 (s, AcO-2′); ^{13}C-NMR (100 MHz, CD_3OD): 99.6 (C-1), 153.1 (C-3), 110.4 (C-4), 64.2 (C-5), 33.4 (C-6), 66.2 (C-7), 133.2 (C-8), 52.2 (C-9), 121.5 (C-10), 167.8 (C-11), 98.7 (C-1′), 75.0 (C-2′), 73.1 (C-3′), 71.9 (C-4′), 76.8 (C-5′), 62.2 (C-6′), 127.6 (C-1″), 111.8 (C-2″), 149.4 (C-3″), 150.9 (C-4″), 116.5 (C-5″), 124.3 (C-6″), 147.8 (C-7″), 114.8 (C-8″), 168.2 (C-9″), 56.5 (MeO-3″), 21.0, 173.1 (Ac). *Swertia mileensis* (Gentianaceae).[36]

57. 2′-*O*-Acetyl-4′-*O*-*cis*-feruloylswertiamarin



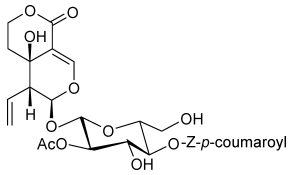
$C_{28}H_{32}O_{14}$: 592.1791; amorphous powder; $[\alpha]_D^{25}$ −62.0° (c=0.55, MeOH); UV (MeOH): 233.5 (4.30), 328 (4.19); IR (nujol): 3600—3100, 1734, 1717, 1699, 1684, 1653, 1616, 1516; ^{1}H-NMR (400 MHz, CD_3OD): 5.65 (d, 1.5, H-1), 7.54 (s, H-3), 1.85 (ddd, 14.2, 12.7, 4.9, H-6), 1.75 (ddd, 14.2, 3.4, 2.0, H-6), 4.74 (ddd, 12.7, 11.2, 3.4, H_a-7), 4.33 (ddd, 11.2, 4.9, 2.0, H_e-7), 5.41 (ddd, 16.6, 8.3, 8.3, H-8), 2.93 (ddd, 8.3, 2.0, 1.5, H-9), 5.41 (dd, 16.6, 5.4, H-10), 5.29 (ddd, 8.3, 5.4, 2.0, H-10), 4.89 (d, 8.3, H-1′), 4.79 (dd, 9.3, 8.3, H-2′), 3.86 (dd, 9.3, 9.3, H-3′), 4.91 (dd, 9.3, 9.3, H-4′), 3.63 (ddd, 9.3, 5.4, 2.0, H-5′), 3.58 (dd, 10.7, 5.4, H-6′), 3.66 (dd, 10.7, 2.0, H-6′), 2.06 (s, AcO-2′), 7.78 (d, 2.0, H-2″), 6.76 (d, 8.3, H-5″), 7.14 (dd, 8.3, 2.0, H-6″), 6.91 (d, 12.7, H-7″), 5.80 (d, 12.7, H-8″); ^{13}C-NMR (100 MHz, CD_3OD): 99.6 (C-1), 153.2 (C-3), 110.4 (C-4), 64.2 (C-5), 33.4 (C-6), 66.2 (C-7), 133.2 (C-8), 52.2 (C-9), 121.5 (C-10), 167.8 (C-11), 98.7 (C-1′), 75.0 (C-2′), 73.1 (C-3′), 71.6 (C-4′), 76.7 (C-5′), 62.2 (C-6′), 129.3 (C-1″), 115.0 (C-2″), 148.4 (C-3″), 149.8 (C-4″), 115.6 (C-5″)[a], 127.1 (C-6″), 146.8 (C-7″), 115.5 (C-8″)[a], 167.0 (C-9″), 56.4 (MeO-3″), 21.0, 173.1 (Ac). *Swertia mileensis* (Gentianaceae).[36]

58. 2′-*O*-Acetyl-4′-*O*-*trans*-*p*-coumaroylswertiamarin



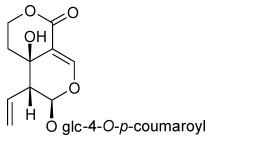
$C_{27}H_{30}O_{13}$: 562.1686; amorphous powder; $[\alpha]_D^{25}$ −159.0° (c=0.82, MeOH); UV (MeOH): 230 (4.19), 300sh (4.21), 315 (4.29); IR (nujol): 3600—3100, 1733, 1710, 1684, 1671, 1610, 1603, 1514; ^{1}H-NMR (400 MHz, CD_3OD): 5.68 (d, 1.5, H-1), 7.56 (s, H-3), 1.76 (ddd, 14.2, 2.8, 1.4, H-6), 1.86 (ddd, 14.2, 12.7, 5.2, H-6), 4.34 (ddd, 11.0, 5.2, 1.4, H-7), 4.75 (ddd, 12.7, 11.0, 2.8, H-7), 5.42 (ddd, 16.0, 8.2, 7.6, H-8), 2.93 (ddd, 7.6, 1.5, 1.5, H-9), 5.30 (ddd, 8.2, 4.0, 1.5, H-10), 5.37 (dd, 16.0, 4.0, H-10), 4.92 (d, 8.6, H-1′), 4.81 (dd, 9.5, 8.6, H-2′), 3.92 (dd, 9.5, 9.5, H-3′), 4.93 (dd, 9.5, 9.5, H-4′), 3.67 (ddd, 9.5, 6.6, 2.0, H-5′), 3.59 (dd, 12.5, 6.6, H-6′), 3.67 (dd, 12.5, 2.0, H-6′), 2.07 (s, AcO-2′), 7.48 (d, 8.5, H-2″, 6″), 6.81 (d, 8.5, H-3″, 5″), 7.68 (d, 16.0, H-7″), 6.37 (d, 16.0, H-8″); ^{13}C-NMR (100 MHz, CD_3OD): 99.6 (C-1), 153.2 (C-3), 110.5 (C-4), 64.2 (C-5), 33.4 (C-6), 66.2 (C-7), 133.2 (C-8), 52.2 (C-9), 121.5 (C-10), 167.8 (C-11), 98.7 (C-1′), 75.0 (C-2′), 73.1 (C-3′), 72.0 (C-4′), 76.8 (C-5′), 62.2 (C-6′), 127.1 (C-1″), 131.3 (C-2″, 6″), 116.9 (C-3″, 5″), 161.5 (C-4″), 147.6 (C-7″), 114.5 (C-8″), 168.3 (C-9″), 21.0, 173.1 (Ac). *Swertia mileensis* (Gentianaceae).[36]

59. 2′-*O*-Acetyl-4′-*O*-*cis*-*p*-coumaroylswertiamarin



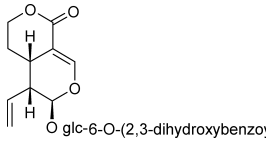
$C_{27}H_{30}O_{13}$: 562.1686; amorphous powder; $[\alpha]_D^{25}$ −60.0° (c=1.99, MeOH); UV (MeOH): 229 (4.37), 312.5 (4.25); IR (nujol): 3600—3100, 1734, 1710, 1700, 1684, 1616, 1603, 1514; ^{1}H-NMR (400 MHz, CD_3OD): 5.65 (d, 1.5, H-1), 7.54 (s, H-3), 1.85 (ddd, 14.2, 12.7, 5.2, H-6), 1.75 (ddd, 14.2, 2.8, 1.4, H-6), 4.32 (ddd, 11.2, 5.2, 1.4, H_e-7), 4.74 (ddd, 12.7, 11.2, 2.8, H_a-7), 5.40 (ddd, 16.0, 9.0, 8.4, H-8), 2.92 (ddd, 8.4, 1.5, 1.5, H-9), 5.28 (ddd, 9.0, 4.0, 1.5, H-10), 5.35 (dd, 16.0, 4.0, H-10), 4.88 (d, 8.3, H-1′), 4.79 (dd, 9.3, 8.3, H-2′), 3.85 (dd, 9.3, 9.3, H-3′), 4.90 (dd, 9.3, 9.3, H-4′), 3.60 (ddd, 9.3, 5.9, 2.0, H-5′), 3.56 (dd, 10.7, 5.9, H-6′), 3.65 (br d, 10.7, H-6′), 7.68 (d, 8.8, H-2″, 6″), 6.74 (d, 8.8, H-3″, 5″), 6.92 (d, 12.7, H-7″), 5.80 (d, 12.7, H-8″), 2.06 (s, AcO-2′); ^{13}C-NMR (100 MHz, CD_3OD): 99.6 (C-1), 153.1 (C-3), 110.4 (C-4), 64.2 (C-5), 33.4 (C-6), 66.2 (C-7), 133.2 (C-8), 52.2 (C-9), 121.4 (C-10), 167.8 (C-11), 98.7 (C-1′), 75.0 (C-2′), 73.0 (C-3′), 71.5 (C-4′), 76.7 (C-5′), 62.2 (C-6′), 127.4 (C-1″), 134.0 (C-2″, 6″), 115.9 (C-3″, 5″), 160.3 (C-4″), 146.4 (C-7″), 115.6 (C-8″), 167.0 (C-9″), 21.0, 173.0 (Ac). *Swertia mileensis* (Gentianaceae).[36]

60. 4′-*O*-*trans*-*p*-Coumaroylswertiamarin



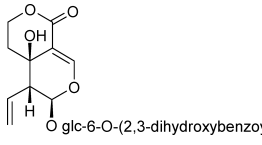
$C_{25}H_{28}O_{12}$: 520.1580; amorphous powder; $[\alpha]_D^{21}$ −100.0° (c=0.23, MeOH); UV (MeOH): 231 (4.28), 315 (4.32); IR (nujol): 3600—3100, 1720, 1700, 1615, 1520; ^{1}H-NMR (400 MHz, CD_3OD): 5.75 (d, 1.5, H-1), 7.64 (s, H-3), 1.76 (ddd, 14.0, 2.2, 1.2, H-6), 1.93 (ddd, 14.0, 13.1, 5.1, H-6), 4.35 (ddd, 10.6, 5.1, 1.2, H_e-7), 4.77 (ddd, 13.1, 10.6, 2.2, H_a-7), 5.46 (ddd, 16.9, 9.5, 9.3, H-8), 2.95 (dd, 9.3, 1.5, H-9), 5.30 (dd, 9.5, 2.4, H-10), 5.38 (dd, 16.9, 2.4, H-10), 4.73 (d, 8.1, H-1′), 3.31 (dd, 9.3, 8.1, H-2′), 3.67 (dd, 9.3, 9.3, H-3′), 4.86 (dd, 9.3, 9.3, H-4′), 3.60 (m, H-5′), 3.56 (dd, 12.0, 5.6, H-6′), 3.65 (dd, 12.0, 2.0, H-6′), 7.47 (d, 8.5, H-2″, 6″), 6.81 (d, 8.5, H-3″, 5″), 7.67 (d, 15.9, H-7″), 6.37 (d, 15.9, H-8″); ^{13}C-NMR (100 MHz, CD_3OD): 99.2 (C-1), 154.6 (C-3), 109.0 (C-4), 64.3 (C-5), 33.8 (C-6), 66.0 (C-7), 133.8 (C-8), 52.0 (C-9), 121.2 (C-10), 168.0 (C-11), 100.1 (C-1′), 74.6 (C-2′), 75.6 (C-3′), 72.3 (C-4′), 76.7 (C-5′), 62.3 (C-6′), 127.1 (C-1″), 131.3 (C-2″, 6″), 116.9 (C-3″, 5″), 161.5 (C-4″), 147.4 (C-7″), 114.7 (C-8″), 168.5 (C-9″). *Swertia mileensis* (Gentianaceae).[36]

61. 6′-*O*-(2,3-Dihydroxybenzoyl)sweroside



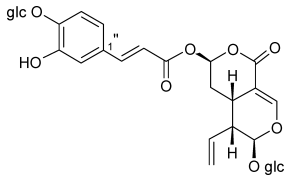
$C_{23}H_{26}O_{12}$: 494.1424; white amorphous powder, mp 171—173 °C (dec); $[\alpha]_D^{20}$ −19.0° (c=0.002, MeOH); UV (MeOH): 237 (4.31), 254 (3.17), 327 (1.21); IR (KBr): 3500—3320, 1715, 1690, 1608, 1490; ^{1}H-NMR (500 MHz, CD_3OD): 5.43 (d, 1.7, H-1), 7.67 (d, 2.4, H-3), 3.08 (m, H-5), 1.62 (dddd, 13.4, 13.2, 13.0, 4.2, H_α-6), 1.70 (m, H_β-6), 4.41 (m, H_α-7), 4.32 (ddd, 13.4, 13.2, 4.2, H_β-7), 5.47 (ddd, 17.1, 10.2, 9.7, H-8), 2.64 (m, H-9), 5.20 (dd, 17.1, 1.6, H-10), 5.18 (dd, 10.2, 1.6, H-10), 4.71 (d, 7.9, H-1′), 3.21 (dd, 9.0, 7.9, H-2′), 3.42 (dd, 9.0, 9.0, H-3′), 3.40 (dd, 9.0, 9.0, H-4′), 3.63 (m, H-5′), 4.68 (dd, 12.0, 2.0, H-6′), 4.51 (dd, 12.0, 5.7, H-6′), 6.99 (d, 8.0, 1.7, H-4″), 6.72 (dd, 8.0, 8.0, H- 5″), 7.33 (dd, 8.0, 1.7, H-6″); ^{13}C-NMR (125 MHz, CD_3OD): 98.6 (C-1), 153.9 (C-3), 106.6 (C-4), 28.4 (C-5), 25.9 (C-6), 69.7 (C-7), 133.1 (C-8), 43.9 (C-9), 120.9 (C-10), 168.4 (C-11), 100.1 (C-1′), 74.6 (C-2′), 75.5 (C-3′), 71.6 (C-4′), 77.7 (C-5′), 65.1 (C-6′), 115.2 (C-1″), 151.3 (C-2″), 147.3 (C-3″), 121.8 (C-4″), 120.1 (C-5″), 121.2 (C-6″), 171.5 (C-7″). *Gentiana algida* (Gentianaceae).[37]

62. 6′-*O*-(2,3-Dihydroxybenzoyl)swertiamarin



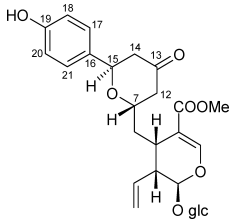
$C_{23}H_{26}O_{13}$: 510.1373; white amorphous powder, mp 154—156 °C (dec); $[\alpha]_D^{20}$ −8.0° (c=0.004, MeOH); UV (MeOH): 238 (4.21), 256 (3.03), 328 (1.11); IR (KBr): 3500—3330, 1711, 1685, 1610, 1495; ^{1}H-NMR (500 MHz, CD_3OD): 5.51 (d, 1.3, H-1), 7.60 (s, H-3), 1.86 (ddd, 13.7, 13.4, 5.1, H_α-6), 1.69 (br d, 13.7, H_β-6), 4.30 (ddd, 10.9, 5.1, 1.4, H_α-7), 4.71 (ddd, 13.4, 10.9, 2.7, H_β-7), 5.36 (ddd, 17.0, 10.0, 9.6, H-8), 2.84 (dd, 9.6, 1.3, H-9), 5.25 (dd, 17.0, 2.0, H-10), 5.18 (dd, 10.2, 2.0, H-10), 4.66 (d, 7.9, H-1′), 3.21 (dd, 9.0, 7.9, H-2′), 3.43 (dd, 9.0, 9.0, H-3′), 3.40 (dd, 9.0, 9.0, H-4′), 3.66 (m, H-5′), 4.69 (dd, 11.9, 2.3, H-6′), 4.52 (dd, 11.9, 6.0, H-6′), 6.99 (dd, 8.0, 2.0, H-4″), 6.72 (dd, 8.0, 8.0, H-5″), 7.33 (dd, 8.0, 1.7, H-6″); ^{13}C-NMR (125 MHz, CD_3OD): 99.3 (C-1), 153.9 (C-3), 109.3 (C-4), 64.3 (C-5), 33.6 (C-6), 65.9 (C-7), 133.4 (C-8), 51.9 (C-9), 120.7 (C-10), 168.6 (C-11), 100.4 (C-1′), 74.4 (C-2′), 75.4 (C-3′), 71.3 (C-4′), 77.6 (C-5′), 64.9 (C-6′), 114.0 (C-1″), 151.2 (C-2″), 147.6 (C-3″), 121.9 (C-4″), 120.3 (C-5″), 121.2 (C-6″), 171.4 (C-7″). *Gentiana algida* (Gentianaceae).[37]

63. 7β-[(*E*)-4′-*O*-(β-D-Glucopyranosyl)caffeoyloxy]sweroside



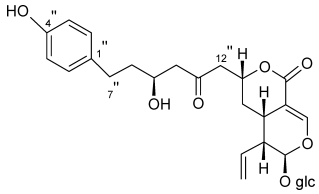
$C_{31}H_{38}O_{18}$: 698.2057; yellow powder, mp 136—138 °C, $[\alpha]_D^{20}$ −176.0° (*c*=2.1, MeOH); UV (MeOH): 219, 244, 297, 321; ^{1}H-NMR (200 MHz, CD_3OD): 5.61 (d, 1.7, H-1), 7.68 (d, 2.6, H-3), — (H-5), 2.05 (ddd, 13.8, 5.8, 2.6, H-6), 1.92 (dt, 13.8, 13.8, 2.2, H-6), 6.71 (t, 2.2, H-7), 5.51 (unresolved, H-8), 2.75 (ddd, 9.1, 5.8, 1.7, H-9), 5.29 (unresolved, H-10), 5.34 (dd, 8.6, 2.3, H-10), 4.57 (d, 7.4, H-1′), 7.16 (d, 1.8, H-2″), 7.21 (d, 8.4, H-5″), 7.09 (dd, 8.4, 1.8, H-6″), 7.67 (d, 16.0, H-7″), 6.43 (d, 16.0, H-8″), 4.81 (d, 7.0, H-1‴); ^{13}C-NMR (50 MHz, CD_3OD): 98.6 (C-1), 155.2 (C-3), 104.6 (C-4), 23.0 (C-5), 29.0 (C-6), 93.4 (C-7), 133.1 (C-8), 43.4 (C-9), 121.4 (C-10), 166.0 (C-11), 100.3 (C-1′), 74.7 (C-2′), 77.7 (C-3′), 71.5 (C-4′), 78.4 (C-5′), 62.6 (C-6′), 130.8 (C-1″), 116.1 (C-2″), 149.3 (C-3″), 148.5 (C-4″), 116.1 (C-5″), 122.7 (C-6″), 148.0 (C-7″), 118.0 (C-8″), 166.4 (C-9″), 103.4 (C-1‴), 75.1 (C-2‴), 78.4 (C-3‴), 71.5 (C-4‴), 78.1 (C-5‴), 62.5 (C-6‴). *Halenia corniculata* (Gentianaceae).[38]

64. Hydrachoside A



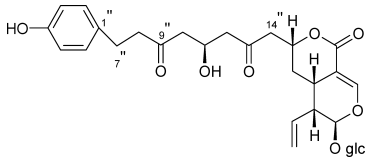
$C_{27}H_{34}O_{12}$: 550.2050; colorless syrup; $[\alpha]_D^{25}$ −31.2° (*c*=0.02, MeOH); UV (MeOH): 227 (4.34), 279 (3.24); IR (neat): 3396, 1694, 1710 br, 1621, 1519; ^{1}H-NMR (500 MHz, CD_3OD): 5.51 (d, 5.5, H-1), 7.44 (s, H-3), 2.94 (dd, 9.0, 6.0, H-5), 1.78 (dd, 9.0, 6.0, H_2-6), 3.25 (m, H-7), 5.71 (dd, 17.0, 10.2, H-8), 2.67 (m, H-9), 5.27 (d, 17.0, H-10), 5.24 (d, 10.2, H-10), 2.57 (dd, 14.0, 6.0, H-12), 2.66 (m, H-12), 1.67 (m, H-14), 1.91 (m, H-14), 4.01 (dd, 9.3, 4.8, H-15), 7.04 (d, 8.5, H-17, 21), 6.70 (d, 8.5, H-18, 20), 3.69 (s, MeO-11), 4.68 (d, 7.5, H-1′), 3.18 (dd, 9.0, 7.5, H-2′), 3.30 (m, H-3′), 4.30 (dd, 7.5, 6.5, H-4′), 3.34 (d, 7.5, H-5′), 3.65 (dd, 12.0, 7.5, H-6′), 3.90 (dd, 12.0, 2.0, H-6′); ^{13}C-NMR (125 MHz, CD_3OD): 97.9 (C-1), 153.5 (C-3), 112.0 (C-4), 29.9 (C-5), 36.0 (C-6), 71.6 (C-7), 135.7 (C-8), 45.9 (C-9), 120.0 (C-10), 169.2 (C-11), 31.7 (C-12), 210.3 (C-13), 37.1 (C-14), 72.7 (C-15), 133.6 (C-16), 130.5 (C-17, 21), 116.2 (C-18, 20), 156.5 (C-19), 51.7 (OMe), 100.2 (C-1′), 74.7 (C-2′), 78.5 (C-3′), 72.1 (C-4′), 78.0 (C-5′), 62.8 (C-6′). *Hydrangea chinensis* (Saxifragaceae).[39]

65. Hydramacroside A



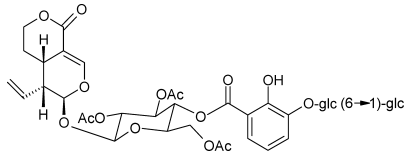
$C_{28}H_{36}O_{12}$: 564.2206; colorless crystals, mp 141—144 °C; $[\alpha]_D$ −129.5° (MeOH); UV (EtOH): 227 (4.3), 240 (4.2), 280 (3.3); IR (KBr): 3400, 1700, 1617; ^{1}H-NMR (500 MHz, DMSO-d_6): 5.43 (d, 1.3, H-1), 7.48 (d, 2.3, H-3), 3.12 (m, H-5), 1.27 (m, H-6), 1.82 (m, H-6), 4.75 (m, H-7), 5.44 (m, H-8), 2.64 (m, H-9), 5.23 (dd, 9.9, 2.3, H-10), 5.29 (dd, 17.2, 2.3, H-10), 4.50 (d, 7.7, H-1′), 6.97 (d, 8.6, H-2″, 6″), 6.65 (d, 8.6, H-3″, 5″), 2.42 (m, H-7″), 2.58 (m, H-7″), 1.57 (m, H_2-8″), 3.89 (m, H-9″), 2.51 (m, H_2-10″), 2.75 (dd, 17.1, 5.2, H-12″), 2.87 (dd, 17.1, 6.7, H-12″); ^{13}C-NMR (125 MHz, DMSO-d_6): 95.3 (C-1), 151.4 (C-3), 104.2 (C-4), 26.3 (C-5), 29.3 (C-6), 74.1 (C-7), 132.1 (C-8), 41.3 (C-9), 120.3 (C-10), 164.5 (C-11), 97.8 (C-1′), 73.0 (C-2′), 76.1 (C-3′), 69.9 (C-4′), 77.2 (C-5′), 60.9 (C-6′), 132.0 (C-1″), 129.0 (C-2″, 6″), 114.9 (C-3″, 5″), 155.1 (C-4″), 30.3 (C-7″), 39.4 (C-8″), 65.8 (C-9″), 50.6 (C-10″), 206.7 (C-11″), 48.3 (C-12″). *Hydrangea macrophylla* var. *thunbergii* (Saxifragaceae).[40]

66. Hydramacroside B



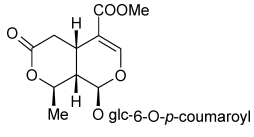
$C_{30}H_{38}O_{13}$: 606.2312; colorless crystals, mp 154—157 °C; $[\alpha]_D$ −106.8° (MeOH); UV (EtOH): 227 (4.2), 240 (4.1), 278 (3.5); IR (KBr): 3400, 1707, 1617; ^{1}H-NMR (500 MHz, DMSO-d_6): 5.43 (d, 1.6, H-1), 7.48 (d, 2.3, H-3), 3.10 (m, H-5), 1.33 (m, H-6), 1.81 (m, H-6), 4.77 (m, H-7), 5.43 (m, H-8), 2.64 (m, H-9), 5.23 (dd, 9.9, 2.3, H-10), 5.29 (dd, 17.2, 2.3, H-10), 6.97 (d, 8.6, H-2″, 6″), 6.64 (d, 8.6, H-3″, 5″), 2.65 (m, H_2-7″), 2.68 (m, H_2-8″), 2.50 (m, H_2-10″, 12″), 4.34 (m, H-11″), 2.75 (dd, 17.5, 5.3, H-14″), 2.87 (dd, 17.5, 7.3, H-14″); ^{13}C-NMR (125 MHz, DMSO-d_6): 95.6 (C-1), 151.7 (C-3), 104.5 (C-4), 26.2 (C-5), 29.6 (C-6), 74.4 (C-7), 132.1 (C-8), 41.6 (C-9), 120.6 (C-10), 164.8 (C-11), 98.1 (C-1′), 73.3 (C-2′), 76.4 (C-3′), 70.2 (C-4′), 77.5 (C-5′), 61.2 (C-6′), 131.4 (C-1″), 129.2 (C-2″, 6″), 115.2 (C-3″, 5″), 155.6 (C-4″), 28.3 (C-7″), 44.8 (C-8″), 208.8 (C-9″), 50.1 (C-10″), 63.5 (C-11″), 50.6 (C-12″), 206.5 (C-13″), 48.5 (C-14″). *Hydrangea macrophylla* var. *thunbergii* (Saxifragaceae).[40]

67. 6‴″-*O*-Glucosyltrifloroside



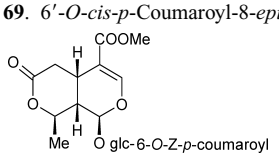
$C_{41}H_{52}O_{25}$: 944.2797; $[\alpha]_D$ −9.5° (*c*=1.12, MeOH); UV (MeOH): 211 (4.08), 246 (3.93), 314 (3.27); ^{1}H-NMR (200 MHz, CD_3OD): 7.59 (d, 2.5, H-3), 7.50 (dd, 7.8, 1.2, H-4″), 6.91 (t, 8.0, H-5″), 7.48 (dd, 7.4, 1.2, H-6″), 1.90 (s, Ac), 1.96 (s, Ac), 2.01 (s, Ac); ^{13}C-NMR (50 MHz, CD_3OD): 98.6 (C-1), 153.3 (C-3), 106.7 (C-4), 28.7 (C-5), 25.8 (C-6), 70.0 (C-7), 132.8 (C-8), 43.4 (C-9), 121.4 (C-10), 168.0 (C-11), 97.6 (C-1′), 73.0 (C-2′), 72.3 (C-3′), 71.3 (C-4′), 73.3 (C-5′), 63.3 (C-6′), 114.4 (C-1″), 153.3 (C-2″), 147.2 (C-3″), 124.8 (C-4″), 120.6 (C-5″), 124.2 (C-6″), 169.5 (C-7″), 102.9 (C-1‴), 75.2 (C-2‴), 77.6 (C-3‴), 71.6 (C-4‴), 77.6 (C-5‴), 69.8 (C-6‴), 104.8 (C-1⁗), 74.8 (C-2⁗), 78.0 (C-3⁗), 71.6 (C-4⁗), 78.0 (C-5⁗), 62.7 (C-6⁗), 20.4, 20.5, 20.6, 171.0, 171.4, 172.2 (3×Ac). *Gentiana linearis* (Gentianaceae).[41]

68. 6′-*O*-*trans*-*p*-Coumaroyl-8-*epi*-kingiside



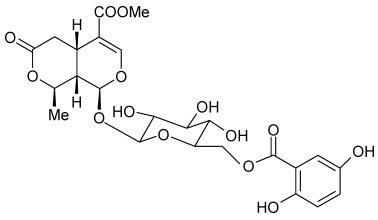
$C_{26}H_{30}O_{13}$: 550.1686; isolated as a mixture with *cis*-*p*-coumaroyl isomer, oil; $[\alpha]_D^{25}$ −43.8° (*c*=1.2, MeOH); UV (MeOH): 230 (3.82), 313 (3.75); ^{1}H-NMR (400 MHz, CD_3OD): 5.26 (d, 7.4, H-1), 7.49 (s, H-3), 2.98 (m, H-5), 2.26 (dd, 16.4, 11.3, H-6), 2.75 (m, H-6), 4.24—4.38 (m, H-8), 1.95—2.05 (m, H-9), 1.37 (d, 6.3, H_3-10), 4.66 (d, 7.8, H-1′), 3.30—4.50 (H-2′, 3′, 4′, 5′, 6′), 7.41 (d, 8.6, H-2″, 6″), 6.74 (d, 8.6, H-3″, 5″), 7.55 (d, 16.0, H-7″), 6.28 (d, 16.0, H-8″), 3.72 (s, MeO-11); ^{13}C-NMR (100 MHz, CD_3OD): 96.8 (C-1), 154.4 (C-3), 109.6 (C-4), 28.1 (C-5), 34.6 (C-6), 174.7 (C-7), 75.9 (C-8), 41.9 (C-9), 21.7 (C-10), 168.9 (C-11), 101.0 (C-1′), 74.9 (C-2′), 78.5 (C-3′), 71.7 (C-4′), 77.9 (C-5′), 62.9 (C-6′), 126.8 (C-1″), 131.3 (C-2″, 6″), 115.9 (C-3″, 5″), 161.3 (C-4″), 145.3 (C-7″), 114.6 (C-8″), 168.0 (C-9″). *Jasminum odoratissimum* (Oleaceae).[18]

69. 6′-*O*-*cis*-*p*-Coumaroyl-8-*epi*-kingiside



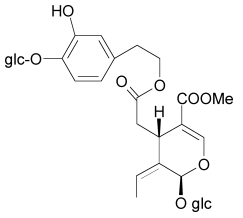
$C_{26}H_{30}O_{13}$: 550.1686; isolated as a mixture with *trans*-*p*-coumaroyl isomer, oil; ^{1}H-NMR (400 MHz, CD_3OD): 5.21 (d, 7.4, H-1), 7.49 (s, H-3), 2.98 (m, H-5), 2.26 (dd, 16.4, 11.3, H-6), 2.75 (m, H-6), 4.24—4.38 (m, H-8), 1.95—2.05 (m, H-9), 1.37 (d, 6.3, H_3-10), 4.62 (d, 7.8, H-1′), 3.30—4.50 (m, H-2′, 3′, 4′, 5′, 6′), 7.56 (d, 8.6, H-2″, 6″), 6.70 (d, 8.6, H-3″, 5″), 6.78 (d, 12.8, H-7″), 5.72 (d, 12.8, H-8″), 3.71 (s, MeO-11); ^{13}C-NMR (100 MHz, CD_3OD): 96.8 (C-1), 154.4 (C-3), 109.8 (C-4), 28.1 (C-5), 34.6 (C-6), 174.5 (C-7), 76.1 (C-8), 41.9 (C-9), 21.7 (C-10), 168.9 (C-11), 101.0 (C-1′), 74.9 (C-2′), 78.5 (C-3′), 71.7 (C-4′), 77.9 (C-5′), 62.9 (C-6′), 127.4 (C-1″), 133.8 (C-2″, 6″), 116.8 (C-3″, 5″), 161.3 (C-4″), 147.2 (C-7″), 116.1 (C-8″), 167.8 (C-9″). *Jasminum odoratissimum* (Oleaceae).[18]

70. 6′-Gentisoyl-8-*epi*-kingiside



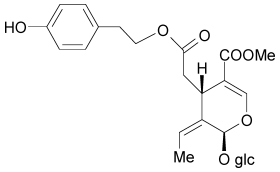
$C_{24}H_{28}O_{14}$: 540.1478; gum; $[\alpha]_D^{20}$ −3.0° (c=0.002, MeOH); IR (KBr): 3550—3230, 1690; ^{1}H-NMR (500 MHz, CD_3OD): 5.28 (d, 7.4, H-1), 7.52 (d, 1.4, H-3), 2.99 (m, H-5), 2.18 (dd, 16.5, 11.4, H_α-6), 2.77 (dd, 16.5, 4.2, H_β-6), 4.27 (dq, 7.1, 6.3, H-8), 2.06 (ddd, 7.4, 7.3, 7.1, H-9), 1.36 (d, 6.3, H_3-10), 3.71 (s, OMe), 4.76 (d, 7.8, H-1′), 3.22 (dd, 9.0, 7.8, H-2′), 3.42 (dd, 9.0, 9.0, H-3′), 3.40 (dd, 9.0, 9.0, H-4′), 3.62 (m, H-5′), 4.73 (dd, 11.9, 2.4, H-6′), 4.60 (dd, 11.9, 5.9, H-6′), 6.78 (d, 8.6, H-3″), 6.98 (dd, 8.6, 2.8, H-4″), 7.24 (d, 2.8, H-6″); ^{13}C-NMR (125 MHz, CD_3OD): 96.5 (C-1), 154.2 (C-3), 109.5 (C-4), 28.6 (C-5), 34.6 (C-6), 174.5 (C-7), 75.5 (C-8), 41.8 (C-9), 21.4 (C-10), 168.2 (C-11), 51.9 (OMe), 101.0 (C-1′), 74.6 (C-2′), 77.7 (C-3′), 71.7 (C-4′), 75.7 (C-5′), 64.6 (C-6′), 113.3 (C-1″), 155.9 (C-2″), 115.3 (C-3″), 119.3 (C-4″), 150.9 (C-5″), 125.2 (C-6″), 170.7 (C-7″). *Gentiana siphonantha* (Gentianaceae).[35]

71. 6″-*O*-*β*-D-Glucopyranosyloleuropein



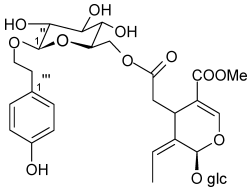
$C_{31}H_{42}O_{18}$: 702.2370; white amorphous powder; $[\alpha]_D^{27}$ −149.0° (c=0.73, MeOH); UV (MeOH): 226 (4.06), 240sh (4.00), 275.5 (3.35); IR (KBr): 3397, 1707, 1630, 1508, 1076; ^{1}H-NMR (500 MHz, CD_3OD): 5.86 (br s, H-1), 7.50 (s, H-3), 3.95 (dd, 8.5, 4.5, H-5), 2.46 (dd, 14.0, 8.5, H-6), 2.68 (dd, 14.0, 4.5, H-6), 6.07 (qd, 7.5, 1.0, H-8), 1.65 (dd, 7.5, 1.5, H_3-10), 4.78 (d, 8.0, H-1′), 3.30—3.50 (m, H-2′, 3′, 4′, 5′, H-2‴, 3‴, 4‴, 5‴), 3.67 (dd, 12.0, 6.0, H-6′ or H-6‴), 3.72 (dd, 12.0, 5.0, H-6′ or H-6‴), 3.88 (dd, 12.0, 2.0, H-6′, 6‴), 6.75 (d, 2.0, H-2″), 7.12 (d, 8.5, H-5″), 6.67 (dd, 8.5, 2.0, H-6″), 2.82 (t, 6.5, H_2-7″), 4.13, 4.25 (each dt, 10.5, 6.5, H_2-8″), 4.72 (d, 8.0, H-1‴); ^{13}C-NMR (125 MHz, CD_3OD): 95.3 (C-1), 155.2 (C-3), 109.4 (C-4), 31.9 (C-5), 41.2 (C-6), 173.2 (C-7), 124.9 (C-8), 130.6 (C-9), 13.6 (C-10), 168.7 (C-11), 52.0 (OMe), 101.0 (C-1′), 75.0 (C-2′), 77.7 (C-3′), 71.3 (C-4′), 78.3 (C-5′), 62.8 (C-6′), 135.4 (C-1″), 117.8 (C-2″), 148.6 (C-3″), 145.6 (C-4″), 119.5 (C-5″), 121.5 (C-6″), 35.5 (C-7″), 66.7 (C-8″), 104.8 (C-1‴), 74.8 (C-2‴), 78.0 (C-3‴), 71.6 (C-4‴), 78.4 (C-5‴), 62.5 (C-6‴). *Jasminum polyanthum* (Oleaceae).[42]

72. (8*Z*)-Ligstroside



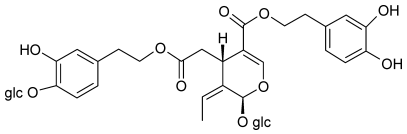
$C_{25}H_{32}O_{12}$: 524.1893; amorphous powder; $[\alpha]_D^{26}$ −81.3° (c=0.2, MeOH); UV (MeOH): 225 (4.25), 276 (3.41); ^{1}H-NMR (400 MHz, CD_3OD): 6.23 (br s, H-1), 7.45 (d, 1.2, H-3), 3.66 (m, H-5, H-6′), 2.62 (dd, 15.6, 8.1, H-6), 2.89 (dd, 15.6, 3.8, H-6), 5.48 (dq, 7.1, 1.0, H-8), 1.71 (dd, 7.1, 1.7, H_3-10), 3.68 (s, MeO-11), 4.64 (d, 7.8, H-1′), 3.19 (dd, 8.8, 7.8, H-2′), 3.27—3.38 (m, H-3′, 4′, 5′), 3.91 (dd, 12.0, 2.0, H-6′), 7.04 (d, 8.5, H-2″, 6″), 6.72 (d, 8.5, H-3″, 5″), 2.81 (t, 6.8, H_2-7″), 4.19 (m, H_2-8″); ^{13}C-NMR (100 MHz, CD_3OD): 93.7 (C-1), 154.2 (C-3), 112.3 (C-4), 33.6 (C-5), 37.8 (C-6), 173.8 (C-7), 126.1 (C-8), 132.2 (C-9), 13.4 (C-10), 168.6 (C-11), 51.8 (OMe), 100.1 (C-1′), 74.7 (C-2′), 78.1 (C-3′), 71.6 (C-4′), 78.4 (C-5′), 62.8 (C-6′), 130.1 (C-1″), 131.0 (C-2″, 6″), 116.3 (C-3″, 5″), 157.1 (C-4″), 35.2 (C-7″), 66.7 (C-8″). *Syringa reticulata* (Oleaceae).[43]

73. (8*Z*)-Nüzhenide



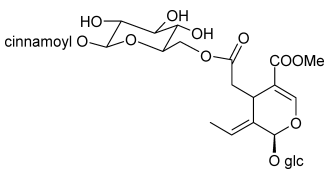
$C_{31}H_{42}O_{17}$: 686.2421; amorphous powder; $[\alpha]_D^{26}$ −101.1° (c=1.0, MeOH); UV (MeOH): 225 (4.10), 276 (3.24); ^{1}H-NMR (400 MHz, CD_3OD): 6.24 (s, H-1), 7.46 (d, 1.5, H-3), 3.70 (m, H-5, H-6′, H-8‴), 2.73 (dd, 15.7, 7.8, H-6), 2.93 (dd, 15.7, 4.0, H-6), 5.67 (br q, 7.1, H-8), 1.75 (dd, 7.1, 1.7, H_3-10), 4.67 (d, 7.8, H-1′), 3.20 (m, H-2′, 2″), 3.27—3.45 (m, H-3′, 4′, 5′, 3″, 4″, 5″), 3.90 (dd, 12.0, 2.0, H-6′), 7.05 (d, 8.5, H-2‴, 6‴), 6.69 (d, 8.5, H-3‴, 5‴), 2.84 (br t, 7.8, H_2-7‴), 3.96 (dt, 9.5, 7.8, H-8‴), 4.29 (d, 7.8, H-1″), 4.42 (dd, 12.0, 2.0, H-6″), 4.16 (dd, 12.0, 5.6, H-6″), 3.66 (s, MeO-11); ^{13}C-NMR (100 MHz, CD_3OD): 93.7 (C-1), 154.2 (C-3), 112.2 (C-4), 33.6 (C-5), 37.7 (C-6), 173.6 (C-7), 126.2 (C-8), 132.1 (C-9), 13.5 (C-10), 168.6 (C-11), 51.8 (OMe), 100.1 (C-1′), 74.7 (C-2′), 78.0 (C-3′), 71.6 (C-4′), 78.4 (C-5′), 62.8 (C-6′), 104.5 (C-1″), 75.0 (C-2″), 78.1 (C-3″), 71.6 (C-4″), 75.4 (C-5″), 64.8 (C-6″), 130.8 (C-1‴), 131.0 (C-2‴, 6‴), 116.2 (C-3‴, 5‴), 156.9 (C-4‴), 36.5 (C-7‴), 72.3 (C-8‴). *Syringa reticulata* (Oleaceae).[43]

74. Angustifoliside C



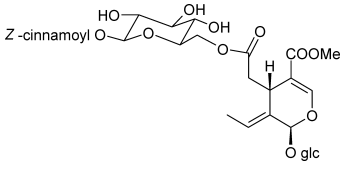
$C_{38}H_{48}O_{20}$: 824.2738; amorphous powder; UV (MeOH): 230, 281; IR (KBr): 3400, 1715, 1700, 1630, 1520; ^{1}H-NMR (600 MHz, CD_3OD): 5.89 (br s, H-1), 7.48 (s, H-3), 3.98 (dd, 9.5, 4.5, H-5), 2.44 (dd, 14.2, 9.5, H-6), 2.72 (dd, 14.5, 4.5, H-6), 6.19 (br t, 7.0, H-8), 1.72 (dd, 7.0, 1.5, H_3-10), 4.81 (d, 7.9, H-1′), 5.18 (dd, 9.2, 7.8, H-2′), 3.25—3.52 (m, H-3′), 3.68 (dd, 12.0, 1.5, H-6′), 3.86 (dd, 12.0, 5.0, H-6′), 6.86 (d, 1.7, H-2″), 6.78 (d, 8.0, H-5″), 6.56 (dd, 8.0, 1.7, H-6″), 2.87 (t, 7.0, H_2-7″), 4.29 (t, 7.0, H-8″), 4.41 (t, 7.0, H-8″), 7.09 (d, 1.7, H-2‴), 7.13 (d, 8.0, H-5‴), 6.77 (dd, 8.0, 1.7, H-6‴), 2.78 (t, 6.7, H_2-7‴), 4.15 (dt, 11.0, 6.7, H-8‴), 4.26 (dt, 11.0, 6.7, H-8‴), 4.74 (d, 7.6, H-1⁗), 3.25—3.52 (m, H-3⁗), 3.68 (dd, 12.0, 1.5, H-6⁗), 3.89 (dd, 12.0, 5.5, H-6⁗); ^{13}C-NMR (150 MHz, CD_3OD): 94.7 (C-1), 155.0 (C-3), 109.8 (C-4), 31.8 (C-5), 41.1 (C-6), 173.2 (C-7), 126.7 (C-8), 130.5 (C-9), 13.6 (C-10), 168.2 (C-11), 100.8 (C-1′), 74.7 (C-2′), 78.4 (C-3′), 71.4 (C-4′), 78.1 (C-5′), 62.7 (C-6′), 133.1 (C-1″), 116.6 (C-2″), 146.5 (C-3″), 148.2 (C-4″), 117.3 (C-5″), 121.0 (C-6″), 36.4 (C-7″), 67.3 (C-8″), 131.9 (C-1‴), 117.9 (C-2‴), 145.2 (C-3‴), 144.8 (C-4‴), 119.8 (C-5‴), 122.9 (C-6‴), 36.0 (C-7‴), 66.7 (C-8‴), 104.5 (C-1⁗), 74.9 (C-2⁗), 78.2 (C-3⁗), 71.3 (C-4⁗), 77.9 (C-5⁗), 62.5 (C-6⁗). *Fraxinus angustifolia* (Oleaceae).[44]

75. Safghanoside A



$C_{32}H_{40}O_{17}$: 696.2265; colorless amorphous powder; $[\alpha]_D^{27}$ −143.0° (c=0.96, MeOH); UV (MeOH): 218 (4.27), 223 (4.28), 241.5 (4.16), 279.5 (4.32); IR (KBr): 3403, 1716, 1635, 1448, 1076; ^{1}H-NMR (500 MHz, CD_3OD): 5.91 (br s, H-1), 7.51 (s, H-3), 4.00 (dd, 9.0, 5.0, H-5), 2.50 (dd, 14.0, 9.0, H-6), 2.75 (dd, 14.0, 5.0, H-6), 6.09 (qd, 7.0, 1.0, H-8), 1.73 (dd, 7.0, 2.0, H_3-10), 3.71 (s, MeO-11), 4.81 (d, 8.0, H-1′), 3.46 (t, 8.0, H-3′), 3.68 (dd, 12.0, 5.5, H-6′), 3.87 (dd, 12.0, 1.5, H-6′), 5.60 (d, 8.0, H-1″), 4.25 (dd, 12.0, 5.0, H-6″), 4.32 (dd, 12.0, 2.0, H-6″), 7.41—7.63 (m, H-2‴, 3‴, 4‴, 5‴, 6‴), 7.81 (d, 16.0, H-7′‴), 6.58 (d, 16.0, H-8′‴); ^{13}C-NMR (125 MHz, CD_3OD): 95.2 (C-1), 155.2 (C-3), 109.4 (C-4), 31.8 (C-5), 41.2 (C-6), 173.0 (C-7), 125.0 (C-8), 130.5 (C-9), 13.7 (C-10), 168.8 (C-11), 52.0 (OMe), 100.9 (C-1′), 74.0 (C-2′), 78.0 (C-3′), 71.2 (C-4′), 77.8 (C-5′), 62.8 (C-6′), 95.8 (C-1″), 74.7 (C-2″), 78.4 (C-3″), 71.5 (C-4″), 76.1 (C-5″), 64.7 (C-6″), 135.6 (C-1‴), 129.5 (C-2‴, 6‴), 130.1 (C-3‴, 5‴), 131.9 (C-4‴), 147.8 (C-7‴), 118.3 (C-8‴), 167.0 (C-9‴). *Syringa afghanica* (Oleaceae).[45]

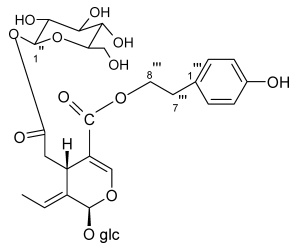
76. Safghanoside B



$C_{32}H_{40}O_{17}$: 696.2265; colorless amorphous powder; $[\alpha]_D^{26}$ −158.0° (c=0.33, MeOH); UV (MeOH): 217sh (4.14), 225 (4.17), 240 (4.19), 277 (3.99); IR (KBr): 3393, 1733, 1716, 1635, 1437, 1074; ^{1}H-NMR (500 MHz, CD_3OD): 5.90 (br s, H-1), 7.50 (s, H-3), 4.00 (dd, 8.0, 5.0, H-5), 2.51 (dd, 14.0, 8.0, H-6), 2.74 (dd, 14.0, 5.0, H-6), 6.09 (br q, 7.0, H-8), 1.73 (dd, 7.0, 1.5, H_3-10), 3.68 (s, OMe), 4.80 (d, 8.0, H-1′), 3.42 (t, 8.0, H-3′), 3.67 (dd, 12.0, 5.5, H-6′), 3.87 (dd, 12.0, 1.5, H-6′), 5.53 (d, 8.0, H-1″), 4.23 (dd, 12.0, 5.0, H-6″), 4.32 (dd, 12.0, 2.0, H-6″), 7.33—7.65 (m, H-2‴, 3‴, 4‴, 5‴, 6‴), 7.09 (d, 12.5, H-7‴), 6.04 (d, 12.5, H-8‴); ^{13}C-NMR (125 MHz, CD_3OD): 95.2 (C-1), 155.2 (C-3), 109.4 (C-4), 31.7 (C-5), 41.2 (C-6), 173.0 (C-7), 125.0 (C-8), 130.5 (C-9),

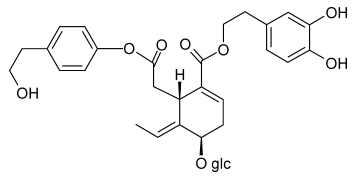
13.7 (C-10), 168.7 (C-11), 52.0 (OMe), 100.9 (C-1′), 73.9 (C-2′), 78.0 (C-3′), 71.2 (C-4′), 76.1 (C-5′), 62.7 (C-6′), 95.6 (C-1″), 74.7 (C-2″), 78.4 (C-3″), 71.5 (C-4″), 77.9 (C-5″), 64.7 (C-6″), 136.0 (C-1‴), 131.3 (C-2‴, 6‴), 129.1 (C-3‴, 5‴), 130.4 (C-4‴), 146.3 (C-7‴), 119.5 (C-8‴), 166.0 (C-9‴). *Syringa afghanica* (Oleaceae).[45]

77. Safghanoside C



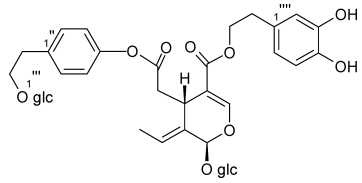
$C_{30}H_{40}O_{17}$: 672.2265; colorless amorphous powder; $[\alpha]_D^{27}$ −102.0° (c=0.83, MeOH); UV (MeOH): 227 (4.18), 238sh (4.11), 277 (3.26), 285sh (3.15); IR (KBr): 3393, 1740, 1716, 1635, 1517, 1076; ^{1}H-NMR (500 MHz, CD_3OD): 5.93 (br s, H-1), 7.45 (s, H-3), 3.98 (dd, 9.0, 3.0, H-5), 2.54 (dd, 15.0, 9.0, H-6), 2.73 (dd, 15.0, 3.0, H-6), 6.10 (br q, 7.0, H-8), 1.76 (dd, 7.0, 1.0, H_3-10), 4.80 (d, 8.0, H-1′), 3.41 (t, 9.0, H-3′), 3.66 (dd, 12.0, 5.5, H-6′, 6″), 3.81 (dd, 12.0, 1.0, H-6′), 5.44 (d, 8.0, H-1″), 3.89 (dd, 12.0, 2.0, H-6″), 7.07 (d, 8.0, H-2‴, 6‴), 6.71 (d, 8.0, H-3‴, 5‴), 2.86 (t, 7.0, H_2-7‴), 4.25, 4.28 (each dt, 10.0, 7.0, H_2-8‴); ^{13}C-NMR (125 MHz, CD_3OD): 95.4 (C-1)[a], 155.3 (C-3), 109.4 (C-4), 31.3 (C-5), 40.5 (C-6), 171.9 (C-7), 125.5 (C-8), 130.2 (C-9, 1‴), 13.9 (C-10), 168.3 (C-11), 100.9 (C-1′), 73.9 (C-2′)[b], 78.5 (C-3′)[c], 71.0 (C-4′)[d], 78.0 (C-5′, 5″), 62.8 (C-6′), 95.7 (C-1″)[a], 74.8 (C-2″)[b], 78.7 (C-3″)[c], 71.5 (C-4″)[d], 62.4 (C-6″), 131.0 (C-2‴, 6‴), 116.3 (C-3‴, 5‴), 157.1 (C-4‴), 35.4 (C-7‴), 66.5 (C-8‴). *Syringa afghanica* (Oleaceae).[45]

78. Safghanoside D



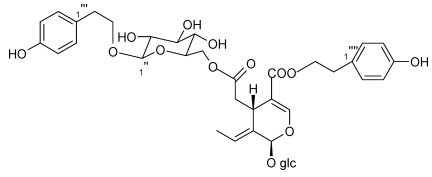
$C_{32}H_{38}O_{14}$: 646.2261; colorless amorphous powder; $[\alpha]_D^{27}$ −129.0° (c=1.05, MeOH); UV (MeOH): 220 (4.26), 230sh (4.24), 282.5 (3.49); IR (KBr): 3389, 1743, 1697, 1635, 1508, 1074; ^{1}H-NMR (500 MHz, CD_3OD): 6.01 (br s, H-1), 7.52 (s, H-3), 4.07 (dd, 9.0, 4.0, H-5), 2.66 (dd, 14.0, 9.0, H-6), 2.87 (dd, 14.0, 4.0, H-6), 6.16 (br q, 7.0, H-8), 1.74 (dd, 7.0, 2.0, H_3-10), 4.82 (d, 8.0, H-1′), 3.41 (t, 8.0, H-3′), 3.63 (dd, 12.0, 5.0, H-6′), 3.83 (dd, 12.0, 1.0, H-6′), 7.24 (d, 8.0, H-2″, 6″), 6.99 (d, 8.0, H-3″, 5″), 2.81 (t, 7.0, H_2-7″), 3.74 (t, 7.0, H_2-8″), 6.67 (d, 2.0, H-2‴), 6.68 (d, 8.0, H-5‴), 6.56 (dd, 8.0, 2.0, H-6‴), 2.80 (t, 6.5, H_2-7‴), 4.27, 4.30 (each dt, 11.0, 6.5, H_2-8‴); ^{13}C-NMR (125 MHz, CD_3OD): 95.3 (C-1), 155.3 (C-3), 109.5 (C-4), 31.8 (C-5), 41.0 (C-6), 171.7 (C-7), 125.1 (C-8), 130.6 (C-9), 13.8 (C-10), 168.2 (C-11), 101.0 (C-1′), 74.8 (C-2′), 77.9 (C-3′), 71.4 (C-4′), 78.4 (C-5′), 62.7 (C-6′), 138.2 (C-1″), 131.0 (C-2″, 6″), 122.6 (C-3″, 5″), 150.5 (C-4″), 39.6 (C-7″), 64.1 (C-8″), 131.0 (C-1‴), 116.4 (C-2‴), 146.3 (C-3‴), 144.9 (C-4‴), 117.0 (C-5‴), 121.3 (C-6‴), 35.5 (C-7‴), 66.4 (C-8‴). *Syringa afghanica* (Oleaceae).[45]

79. Safghanoside E



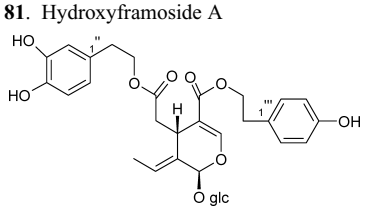
$C_{38}H_{48}O_{19}$: 808.2789; colorless amorphous powder; $[\alpha]_D^{26}$ −104.0° (c=0.69, MeOH); UV (MeOH): 220 (4.23), 243sh (4.08), 282sh (3.44); IR (KBr): 3383, 1740, 1697, 1522, 1074; ^{1}H-NMR (500 MHz, CD_3OD): 6.01 (br s, H-1), 7.52 (s, H-3), 4.07 (dd, 9.0, 5.0, H-5), 2.66 (dd, 14.0, 9.0, H-6), 2.87 (dd, 14.0, 5.0, H-6), 6.17 (qd, 7.0, 1.0, H-8), 1.75 (dd, 7.0, 2.0, H_3-10), 4.81 (d, 8.0, H-1′), 3.41 (t, 8.0, H-3′), 3.63 (dd, 12.0, 5.0, H-6′)[a], 3.82 (dd, 12.0, 2.0, H-6′)[b], 7.29 (d, 8.0, H-2″, 6″), 6.98 (d, 8.0, H-3″, 5″), 2.94 (t, 7.0, H_2-7″), 3.76, 4.09 (each dt, 10.0, 7.0, H_2-8″), 4.30 (d, 8.0, H-1‴), 3.66 (dd, 12.0, 5.0, H-6‴)[a], 3.86 (dd, 12.0, 2.0, H-6‴)[b], 6.67 (d, 2.0, H-2⁗), 6.68 (d, 8.0, H-5⁗), 6.56 (dd, 8.0, 2.0, H-6⁗), 2.81 (t, 7.0, H_2-7⁗), 4.28 (m, H_2-8⁗); ^{13}C-NMR (125 MHz, CD_3OD): 95.4 (C-1), 155.3 (C-3), 109.5 (C-4), 31.8 (C-5), 41.1 (C-6), 171.7 (C-7), 125.1 (C-8), 130.7 (C-9), 13.8 (C-10), 168.2 (C-11), 101.1 (C-1′), 74.8 (C-2′)[a], 78.0 (C-3′), 71.5 (C-4′)[b], 78.2 (C-5′)[c], 62.7 (C-6′)[d], 138.0 (C-1″), 131.0 (C-2″, 6″), 122.5 (C-3″, 5″), 150.6 (C-4″), 36.6 (C-7″), 71.5 (C-8″), 104.4 (C-1‴), 75.2 (C-2‴)[a], 78.0 (C-3‴), 71.7 (C-4‴)[b], 78.4 (C-5‴)[c], 62.8 (C-6‴)[d], 131.0 (C-1⁗), 116.4 (C-2⁗), 146.3 (C-3⁗), 145.0 (C-4⁗), 117.0 (C-5⁗), 121.3 (C-6⁗), 35.6 (C-7⁗), 66.4 (C-8⁗). *Syringa afghanica* (Oleaceae).[45]

80. Safghanoside F



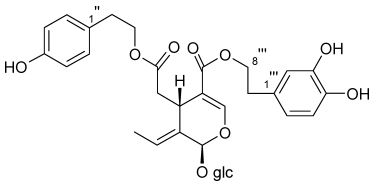
$C_{38}H_{48}O_{18}$: 792.2840; colorless amorphous powder; $[\alpha]_D^{27}$ −101.0° (c=0.27, MeOH); UV (MeOH): 225.5 (4.27), 265sh (3.43), 286.5sh (3.33); IR (KBr): 3407, 1749, 1734, 1635, 1508, 1078; ^{1}H-NMR (500 MHz, CD_3OD): 5.90 (br s, H-1), 7.46 (s, H-3), 3.97 (dd, 9.0, 4.0, H-5), 2.43 (dd, 14.0, 9.0, H-6), 2.69 (dd, 14.0, 4.0, H-6), 6.08 (qd, 7.0, 1.0, H-8), 1.72 (dd, 7.0, 1.0, H_3-10), 4.79 (d, 8.0, H-1′), 3.40 (t, 9.0, H-3′), 3.28 (m, H-5′), 3.66 (dd, 12.0, 5.5, H-6′), 3.88 (dd, 12.0, 1.5, H-6′), 4.28 (d, 8.0, H-1″), 3.46 (m, H-5″), 4.20 (dd, 12.0, 5.5, H-6″), 4.35 (dd, 12.0, 2.0, H-6″), 7.05 (d, 8.5, H-2‴, 6‴), 6.70 (d, 8.5, H-3‴, 5‴), 2.81 (m, H_2-7‴), 3.68, 3.94 (each ddd, 9.5, 8.0, 6.5, H_2-8‴), 7.03 (d, 8.5, H-2⁗, 6⁗), 6.68 (d, 8.5, H-3⁗, 5⁗), 2.83 (br t, 7.0, H_2-7⁗), 4.22 (dt, 14.0, 7.0, H_2-8⁗); ^{13}C-NMR (125 MHz, CD_3OD): 95.2 (C-1), 155.2 (C-3), 109.6 (C-4), 31.7 (C-5), 41.2 (C-6), 173.0 (C-7), 125.0 (C-8), 130.7 (C-9), 13.8 (C-10), 168.2 (C-11), 100.9 (C-1′), 74.8 (C-2′), 78.0 (C-3′), 71.5 (C-4′)[a], 78.5 (C-5′), 62.7 (C-6′), 104.5 (C-1″), 75.0 (C-2″), 78.0 (C-3″), 71.7 (C-4″)[a], 75.3 (C-5″), 65.1 (C-6″), 130.3 (C-1‴), 131.1 (C-2‴, 6‴), 116.2 (C-3‴, 5‴)[b], 157.1 (C-4‴)[c], 36.4 (C-7‴), 72.3 (C-8‴), 130.5 (C-1⁗), 131.1 (C-2⁗, 6⁗), 116.3 (C-3⁗, 5⁗)[b], 156.8 (C-4⁗)[c], 35.3 (C-7⁗), 66.5 (C-8⁗). *Syringa afghanica* (Oleaceae).[45]

81. Hydroxyframoside A



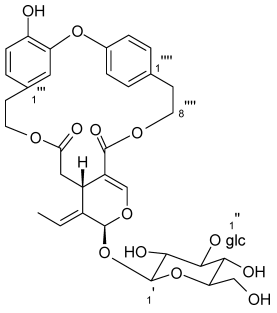
$C_{32}H_{38}O_{14}$: 646.2261; isolated as a mixture with hydroxyframoside B in a ratio 2 : 1; powder; UV (MeOH): 240, 282, 326; IR (KBr): 3419, 1700, 1684, 1628, 1516; ^{1}H-NMR (500 MHz, CD_3OD): 5.90 (br s, H-1), 7.47 (s, H-3), 3.94 (dd, 9.4, 4.5, H-5), 2.39 (dd, 14.2, 9.4, H-6), 2.64 (dd, 14.2, 4.5, H-6), 6.08 (qd, 7.1, 1.0, H-8), 1.66 (dd, 7.1, 1.5, H_3-10), 4.80 (d, 7.8, H-1′), 3.20—3.40 (obscured by solvent peak, H-2′, 4′, 5′), 3.41 (t, 8.8, H-3′), 3.68 (dd, 11.9, 5.5, H-6′), 3.89 (dd, 11.9, 1.7, H-6′) 6.67 (d, 2.1, H-2″), 6.70 (d, 8.0, H-5″), 6.55 (dd, 8.0, 2.1, H-6″), 2.77 (t, 7.1, H_2-7″), 4.10 (dt, 10.7, 7.1, H-8″), 4.21 (dt, 10.7, 7.1, H-8″), 7.07 (d, 8.6, H-2‴, 6‴), 6.71 (d, 8.6, H-3‴, 5‴), 2.87 (t, 6.7, H_2-7‴), 4.27 (dt, 10.8, 6.7, H-8‴), 4.31 (dt, 10.8, 6.7, H-8‴); ^{13}C-NMR (125 MHz, CD_3OD): 94.5 (C-1), 154.4 (C-3), 108.8 (C-4), 31.0 (C-5), 40.5 (C-6), 172.5 (C-7), 124.1 (C-8), 130.0 (C-9), 12.9 (C-10), 167.5 (C-11), 100.2 (C-1′), 74.1 (C-2′), 77.7 (C-3′), 70.8 (C-4′), 77.3 (C-5′), 62.0 (C-6′), 129.5 (C-1″)[a], 116.4 (C-2″), 145.5 (C-3″), 144.2 (C-4″), 115.8 (C-5″), 120.6 (C-6″), 34.7 (C-7″), 66.2 (C-8″), 129.7 (C-1‴)[a], 130.3 (C-2‴, 6‴), 115.5 (C-3‴, 5‴), 156.3 (C-4‴), 34.6 (C-7‴), 65.7 (C-8‴). *Fraxinus ornus* (Oleaceae).[46]

82. Hydroxyframoside B



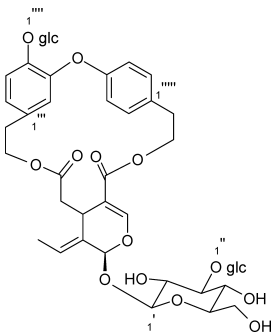
$C_{32}H_{38}O_{14}$: 646.2261; isolated as a mixture with hydroxy framoside A in a ratio 1 : 2; powder; ^{1}H-NMR (500 MHz, CD_3OD): 5.90 (br s, H-1), 7.48 (s, H-3), 3.94 (dd, 9.4, 4.6, H-5), 2.39 (dd, 14.2, 9.4, H-6), 2.65 (dd, 14.2, 4.6, H-6), 6.07 (qd, 7.1, 1.0, H-8), 1.64 (dd, 7.1, 1.5, H_3-10), 4.80 (d, 7.8, H-1′), 3.20—3.40 (obscured by solvent peak, H-2′, 4′, 5′), 3.41 (t, 8.8, H-3′), 3.68 (dd, 11.9, 5.5, H-6′), 3.89 (dd, 11.9, 1.7, H-6′), 7.05 (d, 8.6, H-2″, 6″), 6.72 (d, 8.6, H-3″, 5″), 2.82 (t, 7.2, H_2-7″), 4.09 (dt, 10.7, 7.2, H-8″), 4.22 (dt, 10.7, 7.2, H-8″), 6.68 (d, 2.0, H-2‴), 6.69 (d, 8.0, H-5‴), 6.56 (dd, 8.0, 2.0, H-6‴), 2.81 (t, 6.7, H_2-7‴), 4.27 (dt, 10.8, 6.7, H-8‴), 4.31 (dt, 10.8, 6.7, H-8‴); ^{13}C-NMR (125 MHz, CD_3OD): 94.5 (C-1), 154.4 (C-3), 108.9 (C-4), 31.1 (C-5), 40.5 (C-6), 172.5 (C-7), 124.1 (C-8), 130.0 (C-9), 12.9 (C-10), 167.5 (C-11), 100.2 (C-1′), 74.1 (C-2′), 77.7 (C-3′), 70.8 (C-4′), 77.3 (C-5′), 62.1 (C-6′), 129.3 (C-1″)[a], 130.3 (C-2″, 6″), 115.6 (C-3″, 5″), 156.3 (C-4″), 34.8 (C-7″), 66.2 (C-8″), 129.8 (C-1‴)[a], 116.3 (C-2‴), 145.5 (C-3‴), 144.2 (C-4‴), 115.7 (C-5‴), 120.6 (C-6‴), 34.5 (C-7‴), 65.6 (C-8‴). *Fraxinus ornus* (Oleaceae).[46]

83. Insularoside-3′-*O*-β-D-glucoside



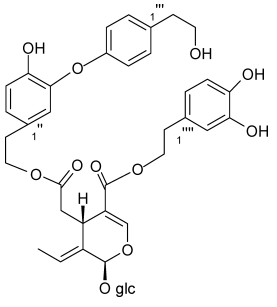
$C_{38}H_{46}O_{18}$: 790.2683; colorless amorphous powder; $[\alpha]_D^{23}$ −84.0° (c=0.15, MeOH); UV (MeOH): 231sh (4.33), 272.3 (3.64), 280sh (3.58); IR (KBr): 3403, 1731, 1709, 1622, 1506, 1076; ^{1}H-NMR (500 MHz, CD_3OD): 5.86 (br s, H-1), 7.54 (s, H-3), 3.79 (dd, 10.5, 3.5, H-5), 2.16 (dd, 15.0, 10.5, H-6), 2.31 (dd, 15.0, 3.5, H-6), 6.03 (qd, 7.0, 1.0, H-8), 1.61 (dd, 7.0, 1.5, H_3-10), 4.82 (d, 8.0, H-1′), 3.49 (dd, 8.5, 8.0, H-2′), 3.60 (t, 8.5, H-3′), 3.42 (dd, 9.5, 8.5, H-4′), 3.30—3.38 (m, H-5′), 3.63 (dd, 12.0, 5.5 H-6′)[a], 3.88 (dd, 12.0, 2.5, H-6′)[b], 4.58 (d, 8.0, H-1″), 3.27 (dd, 9.0, 8.0, H-2″), 3.38 (t, 9.0, H-3″), 3.28 (t, 9.0, H-4″), 3.30—3.38 (m, H-5″), 3.66 (dd, 12.0, 5.5, H-6″)[a], 3.87 (dd, 12.0, 2.5, H-6″)[b], 6.52 (d, 2.0, H-2‴), 6.84 (d, 8.0, H-5‴), 6.76 (dd, 8.0, 2.0, H-6‴), 2.75 (br t, 5.5, H_2-7‴), 4.01 (ddd, 11.0, 6.0, 5.0, H-8‴), 4.27 (ddd, 11.0, 6.0, 4.5, H-8‴), 7.20 (d, 8.0, H-2⁗, 6⁗), 6.92 (d, 8.0, H-3⁗, 5⁗), 2.91 (ddd, 15.0, 5.0, 3.5, H-7⁗), 3.01 (ddd, 15.0, 9.0, 4.0, H-7⁗)), 4.47 (ddd, 10.5, 9.0, 3.5, H-8⁗), 4.52 (ddd, 10.5, 5.0, 4.0, H-8⁗); ^{13}C-NMR (125 MHz, CD_3OD): 95.1 (C-1), 155.3 (C-3), 109.8 (C-4), 31.4 (C-5), 40.9 (C-6), 172.6 (C-7), 125.1 (C-8), 130.0 (C-9), 13.7 (C-10), 167.9 (C-11), 100.5 (C-1′), 74.2 (C-2′), 87.6 (C-3′), 69.9 (C-4′), 77.9 (C-5′)[a], 62.6 (C-6′)[b], 105.3 (C-1″), 75.6 (C-2″), 78.2 (C-3″), 71.6 (C-4″), 78.1 (C-5″)[a], 62.7 (C-6″)[b], 132.2 (C-1‴), 120.1 (C-2‴), 147.0 (C-3‴), 147.7 (C-4‴), 117.7 (C-5‴), 125.0 (C-6‴), 34.8 (C-7‴), 66.4 (C-8‴), 135.5 (C-1⁗), 131.6 (C-2⁗, 6⁗), 120.9 (C-3⁗, 5⁗), 157.5 (C-4⁗), 35.9 (C-7⁗), 66.0 (C-8⁗). *Fraxinus insularis* (Oleaceae).[47]

84. Insularoside-3′,4‴-di-*O*-β-D-glucoside



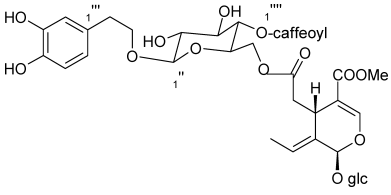
$C_{44}H_{56}O_{23}$: 952.3211; colorless amorphous powder; $[\alpha]_D^{23}$ −72.0° (c=0.12, MeOH); UV (MeOH): 230 (4.29), 273sh (3.39), 278sh (3.31); IR (KBr): 3413, 1716, 1646, 1508, 1074; ^{1}H-NMR (500 MHz, CD_3OD): 5.86 (br s, H-1), 7.54 (s, H-3), 3.79 (dd, 10.5, 3.5, H-5), 2.15 (dd, 15.0, 10.5, H-6), 2.32 (dd, 15.0, 3.5, H-6), 6.03 (qd, 7.0, 1.0, H-8), 1.62 (dd, 7.0, 1.5, H_3-10), 4.84 (d, 7.5, H-1′), 3.49 (dd, 9.0, 7.5, H-2′), 3.60 (t, 9.0, H-3′), 3.42 (t, 9.0, H-4′), 3.28—3.42 (m, H-5′), 3.64 (dd, 12.0, 6.0 H-6′)[a], 3.89 (dd, 12.0, 2.0, H-6′)[b], 4.58 (d, 7.5, H-1″), 3.27 (dd, 9.0, 7.5, H-2″), — (H-3″, 4″), 3.28—3.42 (m, H-5″), 3.66 (dd, 12.0, 6.0, H-6″)[a], 3.87 (dd, 12.0, 2.0, H-6″)[b], 6.56 (d, 2.5, H-2‴), 7.20 (d, 8.5, H-5‴), 6.88 (dd, 8.5, 2.5, H-6‴), 2.79 (br t, 4.5, H_2-7‴), 4.03 (dt, 11.0, 5.5, H-8‴), 4.27 (dt, 11.0, 5.5, H-8‴), 4.99 (d, 7.5, H-1⁗), 3.50 (dd, 9.0, 7.5, H-2⁗), — (H-3⁗, 4⁗), 3.28—3.42 (m, H-5⁗), 3.69 (dd, 12.0, 5.5, H-6⁗)[a], 3.87 (dd, 12.0, 2.0, H-6⁗)[b], 7.21 (d, 8.0, H-2⁗⁗, 6⁗⁗), 6.96 (d, 8.0, H-3⁗⁗, 5⁗⁗), 3.02 (ddd, 14.0, 9.0, 4.0, H-7⁗⁗), 2.92 (ddd, 14.0, 5.5, 3.0, H-7⁗⁗), 4.46 (ddd, 12.0, 9.0, 3.0, H-8⁗⁗), 4.54, (ddd, 12.0, 5.5, 4.0, H-8⁗⁗); ^{13}C-NMR (125 MHz, CD_3OD): 95.2 (C-1), 155.3 (C-3), 109.8 (C-4), 31.4 (C-5), 40.9 (C-6), 172.5 (C-7), 125.2 (C-8), 130.0 (C-9), 13.7 (C-10), 167.9 (C-11), 100.6 (C-1′), 74.2 (C-2′), 87.6 (C-3′), 70.0 (C-4′), 77.9 (C-5′)[a], 62.6 (C-6′), 105.3 (C-1″), 75.6 (C-2″), 78.2 (C-3″)[a], 71.6 (C-4″), 78.1 (C-5″)[a], 62.6 (C-6″), 135.6 (C-1‴), 120.3 (C-2‴), 151.0 (C-3‴), 147.9 (C-4‴), 119.2 (C-5‴), 124.8 (C-6‴), 34.9 (C-7‴), 66.1 (C-8‴), 103.0 (C-1⁗), 74.9 (C-2⁗), 78.3 (C-3⁗)[a], 71.4 (C-4⁗), 78.0 (C-5⁗)[a], 62.6 (C-6⁗)[b], 136.0 (C-1⁗⁗), 131.7 (C-2⁗⁗, 6⁗⁗), 121.4 (C-3⁗⁗, 5⁗⁗), 157.0 (C-4⁗⁗), 35.9 (C-7⁗⁗), 66.0 (C-8⁗⁗). *Fraxinus insularis* (Oleaceae).[47]

85. Insuloside



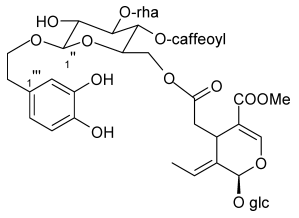
$C_{40}H_{46}O_{16}$: 782.2981; colorless amorphous powder; $[\alpha]_D^{26}$ −111.0° (c=0.13, MeOH); UV (MeOH): 222 (4.42), 278sh (3.80), 282 (3.81); IR (KBr): 3409, 1706, 1628, 1506, 1076; ^{1}H-NMR (500 MHz, CD_3OD): 5.85 (br s, H-1), 7.45 (s, H-3), 3.87 (dd, 9.0, 4.5, H-5), 2.30 (dd, 14.0, 9.0, H-6), 2.59 (dd, 14.0, 4.5, H-6), 6.05 (qd, 7.5, 1.0, H-8), 1.58 (dd, 7.5, 1.5, H_3-10), 4.77 (d, 7.5, H-1′), 3.29 (dd, 9.0, 7.5, H-2′), — (H-3′, 4′), 3.30—3.40 (m, H-5′), 3.64 (dd, 12.0, 6.0 H-6′), 3.86 (dd, 12.0, 1.5, H-6′), 6.79 (d, 2.0, H-2″), 6.87 (d, 8.0, H-5″), 6.89 (dd, 8.0, 2.0, H-6″), 7.12 (d, 8.5, H-2‴, 6‴), 6.83 (d, 8.5, H-3‴, 5‴), 2.75 (br t, 7.0, H_2-7‴), 3.71 (t, 7.5, H_2-8‴), 6.67 (d, 2.0, H-2⁗), 6.67 (d, 8.0, H-5⁗), 6.53 (dd, 8.0, 2.0, H-6⁗), 2.77 (br t, 6.5, H_2-7⁗), 4.07 (dt, 10.5, 6.5, H-8⁗), 4.19 (dt, 10.5, 6.5, H-8⁗); ^{13}C-NMR (125 MHz, CD_3OD): 95.2 (C-1), 155.1 (C-3), 109.6 (C-4), 31.9 (C-5), 41.4 (C-6), 173.2 (C-7), 124.9 (C-8), 130.5 (C-9), 13.6 (C-10), 168.1 (C-11), 100.9 (C-1′), 74.8 (C-2′), 78.0 (C-3′), 71.5 (C-4′), 78.5 (C-5′), 62.8 (C-6′), 131.0 (C-1″), 122.6 (C-2″), 145.1 (C-3″), 148.4 (C-4″), 118.2 (C-5″), 126.4 (C-6″), 35.2 (C-7″), 66.4 (C-8″), 134.5 (C-1‴), 131.1 (C-2‴, 6‴), 118.2 (C-3‴, 5‴), 157.9 (C-4‴), 39.5 (C-7‴), 64.4 (C-8‴), 131.5 (C-1⁗), 117.0 (C-2⁗), 146.3 (C-3⁗), 145.0 (C-4⁗), 116.4 (C-5⁗), 121.3 (C-6⁗), 35.6 (C-7⁗), 66.7 (C-8⁗). *Fraxinus insularis* (Oleaceae).[47]

86. Desrhamnosyloleoacteoside



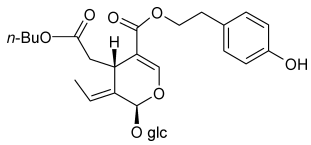
$C_{40}H_{48}O_{21}$: 864.2687; amorphous powder; $[\alpha]_D^{22}$ −94.0° (c=0.26, MeOH); UV (MeOH): 221 (4.34), 232 (4.29), 291.5 (4.04), 302sh (4.03), 332.5 (4.16); IR (KBr): 3419, 1732, 1699, 1630, 1609, 1522, 1076; ^{1}H-NMR (500 MHz, CD_3OD): 5.89 (br s, H-1), 7.48 (s, H-3), 3.73 (dd, 9.0, 4.5, H-5), 2.45 (dd, 14.5, 9.0, H-6), 2.71 (dd, 14.5, 4.5, H-6), 6.05 (qd, 7.0, 1.0, H-8), 1.69 (dd, 7.0, 1.5, H_3-10), 4.80 (d, 8.0, H-1′), 3.69 (dd, 12.0, 6.0, H-6′), 3.87 (dd, 12.0, 2.0 H-6′), 4.39 (d, 8.0, H-1″), 3.32 (dd, 9.0, 8.0, H-2″), 4.07 (dd, 12.0, 3.0, H-6″), 4.18 (dd, 12.0, 5.0, H-6″), 6.68 (d, 2.0, H-2‴), 6.67 (d, 8.0, H-5‴), 6.56 (dd, 8.0, 2.0, H-6‴), 2.80 (m, H_2-7‴), 3.97 (dt, 11.0, 7.0, H-8‴), 3.72 (dt, 11.0, 8.0, H-8‴), 7.05 (d, 2.0, H-2⁗), 6.78 (d, 8.0, H-5⁗), 6.96 (dd, 8.0, 2.0, H-6⁗), 7.59 (d, 16.0, H-7⁗), 6.28 (d, 16.0, H-8⁗); ^{13}C-NMR (125 MHz, CD_3OD): 95.4 (C-1), 155.1 (C-3), 109.4 (C-4), 31.5 (C-5), 41.3 (C-6), 172.8 (C-7), 125.0 (C-8), 130.7 (C-9), 13.7 (C-10), 168.7 (C-11), 52.0 (OMe), 101.0 (C-1′), 74.8 (C-2′), 78.0 (C-3′), 71.5 (C-4′), 78.4 (C-5′), 62.8 (C-6′), 104.5 (C-1″), 73.2 (C-2″), 75.2 (C-3″), 72.6 (C-4″), 75.7 (C-5″), 64.6 (C-6″), 131.5 (C-1‴), 116.4 (C-2‴), 146.2 (C-3‴), 144.7 (C-4‴), 117.2 (C-5‴), 121.3 (C-6‴), 36.7 (C-7‴), 72.4 (C-8‴), 127.8 (C-1⁗), 114.8 (C-2⁗), 149.8 (C-3⁗), 146.9 (C-4⁗), 116.6 (C-5⁗), 123.1 (C-6⁗), 147.8 (C-7⁗), 115.3 (C-8⁗), 168.4 (C-9⁗). *Fraxinus insularis* (Oleaceae).[47]

87. Isooleoacteoside



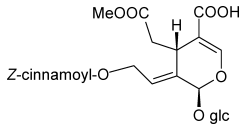
$C_{46}H_{58}O_{25}$: 1010.3266; colorless amorphous powder; $[\alpha]_D^{23}$ −124.0° (c=0.28, MeOH); UV (MeOH): 222 (3.98), 234 (4.29), 291 (4.28), 331 (4.60); IR (KBr): 3406, 1731, 1705, 1634, 1609, 1520, 1285, 1074, 814; ^{1}H-NMR (500 MHz, CD_3OD): 5.90 (br s, H-1), 7.48 (s, H-3), 3.98 (dd, 8.5, 4.0, H-5), 2.45 (dd, 14.5, 8.5, H-6), 2.71 (dd, 14.5, 4.0, H-6), 6.05 (br q, 7.0, H-8), 1.67 (dd, 7.5, 1.5, H_3-10), 3.67 (s, MeO-11), 4.82 (d, 7.5, H-1′), 3.60—3.70 (m, H-6′), 3.80—3.90 (m, H-6′), 4.34 (d, 8.0, H-1″), 4.05 (dd, 12.0, 3.0, H-6″), 4.18 (dd, 12.0, 5.0, H-6″), 6.68 (d, 2.0, H-2‴), 6.67 (d, 8.0, H-5‴), 6.56 (dd, 8.0, 2.0, H-6‴), 2.79 (br t, 7.5, H_2-7‴), 3.74—3.84 (m, H-8‴), 3.90 (m, H-8‴), 5.19 (br s, H-1⁗), 1.09 (d, 6.5, H_3-6⁗), 7.05 (d, 2.0, H-2⁗), 6.78 (d, 8.5, H-5⁗), 6.96 (dd, 8.5, 2.0, H-6⁗), 7.60 (d, 16.0, H-7⁗), 6.26 (d, 16.0, H-8⁗); ^{13}C-NMR (125 MHz, CD_3OD): 95.3 (C-1), 155.1 (C-3), 109.4 (C-4), 31.4 (C-5), 41.2 (C-6), 173.4 (C-7), 125.0 (C-8), 130.6 (C-9), 13.7 (C-10), 168.7 (C-11), 52.0 (OMe), 100.9 (C-1′), 74.8 (C-2′), 78.0 (C-3′), 71.5 (C-4′), 78.3 (C-5′), 62.8 (C-6′), 104.7 (C-1″), 76.2 (C-2″), 81.3 (C-3″), 70.5 (C-4″, 5‴), 73.1 (C-5″), 64.3 (C-6″), 131.4 (C-1‴), 116.6 (C-2‴), 144.2 (C-3‴), 146.2 (C-4‴), 117.2 (C-5‴), 121.3 (C-6‴), 36.7 (C-7‴), 72.4 (C-8‴), 103.1 (C-1⁗), 72.1 (C-2⁗), 72.5 (C-3⁗), 73.9 (C-4⁗), 18.5 (C-6⁗), 127.6 (C-1⁗), 114.6 (C-2⁗), 150.0 (C-3⁗), 146.9 (C-4⁗), 116.4 (C-5⁗), 123.3 (C-6⁗), 148.3 (C-7⁗), 115.2 (C-8⁗), 168.2 (C-9⁗). *Jasminum nudiflorum* (Oleaceae).[27]

88. Butyl isoligustrosidate



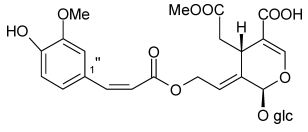
$C_{28}H_{38}O_{12}$: 566.2363; powder; $[\alpha]_D^{27}$ −145.0° (c=0.17, MeOH); UV (EtOH): 226 (3.89), 238 (3.78), 246 (3.60); IR (KBr): 3400, 2950, 1710, 1630, 1515, 1075, 810, 770; ^{1}H-NMR (300 MHz, CD_3OD): 5.91 (s, H-1), 7.47 (s, H-3), 3.98 (dd, 9.5, 4.3, H-5), 2.40 (dd, 14.0, 9.5, H-6), 2.65 (dd, 14.0, 4.3, H-6), 6.09 (q, 6.5, H-8), 1.72 (d, 6.5, H_3-10), 4.83 (d, 7.7, H-1′), 4.06 (t, 7.3, H_2-1″), 1.60 (quin, 7.3, H_2-2″), 1.38 (sex, 7.3, H_2-3″), 0.93 (t, 7.3, H_3-4″), 7.06 (d, 8.4, H-2‴, 6‴), 6.71 (d, 8.4, H-3‴, 5‴), 2.86 (t, 6.6, H_2-7‴), 4.28 (m, H_2-8‴); ^{13}C-NMR (75 MHz, CD_3OD): 95.2 (C-1), 155.1 (C-3), 109.5 (C-4), 31.8 (C-5), 41.2 (C-6), 173.3 (C-7), 124.7 (C-8), 130.6 (C-9), 13.7 (C-10), 168.1 (C-11), 100.8 (C-1′), 74.8 (C-2′), 77.9 (C-3′), 71.5 (C-4′), 78.4 (C-5′), 62.8 (C-6′), 65.7 (C-1″), 31.8 (C-2″), 20.2 (C-3″), 14.1 (C-4″), 130.2 (C-1‴), 131.0 (C-2‴, 6‴), 116.3 (C-3‴, 5‴), 157.0 (C-4‴), 35.3 (C-7‴), 66.6 (C-8‴). *Fraxinus malacophylla* (Oleaceae).[125]

89. Isojasminoside



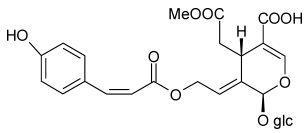
$C_{26}H_{30}O_{13}$: 550.1686; yellowish solid; $[\alpha]_D^{25}$ −91.0° (c=0.13, MeOH); UV (MeOH): 227 (3.90), 276 (3.72); IR (KBr): 3424, 1700, 1638, 1394, 1070; ^{1}H-NMR (300 MHz, CD_3OD): 5.92 (br s, H-1), 7.41 (s, H-3), 4.05 (m, H-5), 2.88 (dd, 15.6, 3.9, H_α-6), 2.50 (dd, 15.6, 10.4, H_β-6), 6.08 (t, 6.6, H-8), 4.82 (m, H_2-10), 3.62 (s, MeO-7), 4.99 (d, 7.7, H-1′), 3.30—3.90 (m, H-2′—H_2-6′), 7.34 (m, H-2″, 6″), 7.57 (m, H-3″, 4″, 5″), 7.00 (d, 12.8, H-7″), 5.96 (d, 12.8, H-8″), ^{13}C-NMR (75.4 MHz, CD_3OD): 94.0 (C-1), 153.4 (C-3), 109.9 (C-4), 32.9 (C-5), 40.9 (C-6), 173.4 (C-7), 123.6 (C-8), 134.9 (C-9), 61.8 (C-10), 171.0 (C-11), 100.9 (C-1′), 74.8 (C-2′), 78.4 (C-3′), 71.4 (C-4′), 77.9 (C-5′), 62.7 (C-6′), 136.2 (C-1″), 130.8 (C-2″, 6″), 129.1 (C-3″, 5″), 130.1 (C-4″), 144.2 (C-7″), 120.2 (C-8″), 167.6 (C-9″). *Jasminum amplexicaule* (Oleaceae).[48]

90. Jaslanceoside C



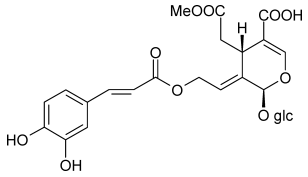
$C_{27}H_{32}O_{15}$: 596.1741; hygroscopic solid; $[\alpha]_D^{25}$ −58.0° (c=0.25, MeOH); UV (MeOH): 216 (3.96), 232 (3.86), 299 (3.62), 323 (3.77); IR (KBr): 3470, 2930, 1700, 1640, 1530, 1070, 792, 768; ^{1}H-NMR (300 MHz, CD_3OD): 5.93 (br s, H-1), 7.46 (s, H-3), 4.08 (m, H-5), 2.90 (m, H_α-6), 2.50 (m, H_β-6), 6.15 (t, 7.0, H-8), 5.95, 4.85 (H_2-10), 4.81 (d, 7.8, H-1′), 3.30—3.90 (m, H-2′, 3′, 4′, 5′, 6′), 7.78 (d, 1.8, H-2″), 6.77 (d, 8.4, H-5″), 7.09 (dd, 8.4, 1.8, H-6″), 6.84 (d, 13.0, H-7″), 5.77 (d, 13.0, H-8″), 3.65 (s, MeO-7), 3.85 (s, MeO-3″); ^{13}C-NMR (75 MHz, CD_3OD): 94.2 (C-1), 153.3 (C-3), — (C-4), 33.1 (C-5), 41.2 (C-6), 173.8 (C-7), 123.9 (C-8), 135.0 (C-9), 61.8 (C-10), 169.0 (C-11), 101.0 (C-1′), 74.8 (C-2′), 78.5 (C-3′), 71.5 (C-4′), 78.0 (C-5′), 62.8 (C-6′), 128.2 (C-1″), 112.0 (C-2″), 150.8 (C-3″), 149.6 (C-4″), 116.4 (C-5″), 126.9 (C-6″), 145.7 (C-7″), 115.1 (C-8″), 168.1 (C-9″), 52.9 (MeO-7), 56.7 (MeO-3″). *Jasminum lanceolarium* (Oleaceae).[49]

91. Jaslanceoside D



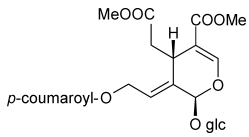
$C_{26}H_{30}O_{14}$: 566.1635; amorphous powder; $[\alpha]_D^{25}$ −92.0° (c=0.25, MeOH); UV (MeOH): 224 (4.02), 298 (3.77), 312 (3.82); IR (neat): 3376, 2920, 1714, 1644, 1606, 1514, 1258, 1164, 1078, 950, 836, 796; ^{1}H-NMR (300 MHz, CD_3OD): 5.95 (br s, H-1), 7.48 (s, H-3), 4.07 (m, H-5), 2.90 (m, H_α-6), 2.52 (m, H_β-6), 6.17 (t, 7.0, H-8), 4.95, 4.87 (H_2-10), 4.82 (d, 7.8, H-1′), 3.30—3.90 (m, H-2′, 3′, 4′, 5′, 6′), 7.61 (d, 8.5, H-2″, 6″), 6.76 (d, 8.5, H-3″, 5″), 6.86 (d, 12.6, H-7″), 5.76 (d, 12.6, H-8″), 3.65 (s, MeO-7); ^{13}C-NMR (75 MHz, CD_3OD): 94.2 (C-1), 153.8 (C-3), 111.2 (C-4), 33.0 (C-5), 41.1 (C-6), 173.7 (C-7), 124.0 (C-8), 134.8 (C-9), 61.7 (C-10), 169.1 (C-11), 101.0 (C-1′), 74.8 (C-2′), 78.5 (C-3′), 71.5 (C-4′), 78.0 (C-5′), 62.8 (C-6′), 52.4 (OMe), 127.7 (C-1″), 133.8 (C-2″, 6″), 116.1 (C-3″, 5″), 160.2 (C-4″), 145.2 (C-7″), 116.5 (C-8″), 168.2 (C-9″). *Jasminum lanceolarium* (Oleaceae).[49]

92. Jaslanceoside E



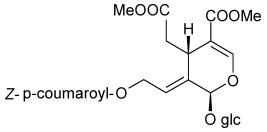
$C_{26}H_{30}O_{15}$: 582.1584; amorphous solid; $[\alpha]_D^{25}$ −85.0° (c=0.1, MeOH); UV (MeOH): 221 (4.94), 2.62 (4.52), 266 (4.53), 332 (3.99); ^{1}H-NMR (300 MHz, CD_3OD): 5.94 (br s, H-1), 7.42 (s, H-3), 4.10 (m, H-5), 2.92 (dd, 15.1, 3.6, H_α-6), 2.50 (dd, 15.1, 10.5, H_β-6), 6.14 (t, 6.6, H-8), 4.92 (H_2-10), 4.82 (overlapped, H-1′), 3.30—3.90 (m, H-2′, 3′, 4′, 5′, 6′), 7.04 (d, 2.0, H-2″), 6.77 (d, 8.1, H-5″), 6.94 (dd, 8.1, 2.0, H-6″), 7.55 (d, 15.9, H-7″), 6.25 (d, 15.9, H-8″), 3.65 (s, MeO-7); ^{13}C-NMR (75 MHz, CD_3OD): 94.0 (C-1), 152.6 (C-3), — (C-4), 33.1 (C-5), 41.1 (C-6), 173.7 (C-7), 123.8 (C-8), 135.1 (C-9), 61.9 (C-10), 168.9 (C-11), 100.9, (C-1′), 74.8 (C-2′), 78.4 (C-3′), 71.4 (C-4′), 77.9 (C-5′), 62.7 (C-6′), 127.7 (C-1″), 114.9 (C-2″), 149.6 (C-3″), 147.1 (C-4″), 116.5 (C-5″), 123.0 (C-6″), 146.8 (C-7″), 115.2 (C-8″), 168.9 (C-9″). *Jasminum lanceolarium* (Oleaceae).[49]

93. 10-*trans*-(*p*-Coumaroyloxy)oleoside dimethyl ester



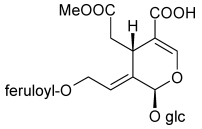
$C_{27}H_{32}O_{14}$: 580.1791; isolated as a mixture with *cis*-isomer; oil; $[\alpha]_D^{25}$ −165.8° (c=1.0, MeOH); UV (MeOH): 231 (4.03), 300 (3.73), 312 (3.75); ^{1}H-NMR (400 MHz, CD_3OD): 5.98 (s, H-1), 7.54 (s, H-3), 4.08 (m, H-5), 2.52—2.57 (H-6), 2.75—2.85 (H-6), 6.18 (t, 6.1, H-8), 4.90 (m, H_2-10), 4.73 (overlapped with solvent peak, H-1′), 3.30—4.50 (m, H-2′, 3′, 4′, 5′, 6′), 7.45 (d, 8.7, H-2″, 6″), 6.80 (d, 8.7, H-3″, 5″), 7.61 (d, 16.0, H-7″), 6.31 (d, 16.0, H-8″), 3.66 (s, MeO-7); ^{13}C-NMR (100 MHz, CD_3OD): 94.2 (C-1), 153.9 (C-3), 110.0 (C-4), 33.0 (C-5), 41.1 (C-6), 173.7 (C-7), 124.0 (C-8), 135.0 (C-9), 62.0 (C-10), 167.6 (C-11), 101.0 (C-1′), 74.9 (C-2′), 78.6 (C-3′), 71.6 (C-4′), 78.0 (C-5′), 62.8 (C-6′), 127.2 (C-1″), 131.3 (C-2″, 6″), 117.0 (C-3″, 5″), 161.4 (C-4″), 145.2 (C-7″), 116.6 (C-8″), 168.4 (C-9″). *Jasminum odoratissimum* (Oleaceae).[18]

94. 10-*cis*-(*p*-Coumaroyloxy)oleoside dimethyl ester



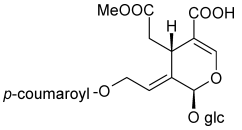
$C_{27}H_{32}O_{14}$: 580.1791; isolated as a mixture with *trans*-isomer, oil; ^{1}H-NMR (400 MHz, CD_3OD): 5.97 (s, H-1), 7.54 (s, H-3), 4.08 (m, H-5), 2.52—2.57 (H-6), 2.75—2.85 (H-6), 6.14 (t, 7.8, H-8), 4.90 (m, H_2-10), 4.73 (overlapped with solvent peak, H-1′), 3.30—4.50 (m, H-2′, 3′, 4′, 5′, 6′), 7.58 (d, 8.7, H-2″, 6″), 6.76 (d, 8.7, H-3″, 5″), 6.86 (d, 12.8, H-7″), 6.30 (d, 12.8, H-8″), 3.63 (s, MeO); ^{13}C-NMR (100 MHz, CD_3OD): 94.2 (C-1), 153.9 (C-3), 110.0 (C-4), 33.0 (C-5), 41.1 (C-6), 173.7 (C-7), 124.0 (C-8), 135.0 (C-9), 62.0 (C-10), 167.6 (C-11), 101.0 (C-1′), 74.9 (C-2′), 78.6 (C-3′), 71.6 (C-4′), 78.0 (C-5′), 62.8 (C-6′), 127.7 (C-1″), 133.8 (C-2″, 6″), 116.1 (C-3″, 5″), 160.2 (C-4″), 146.7 (C-7″), 118.8 (C-8″), 168.9 (C-9″). *Jasminum odoratissimum* (Oleaceae).[18]

95. Jaslanceoside A



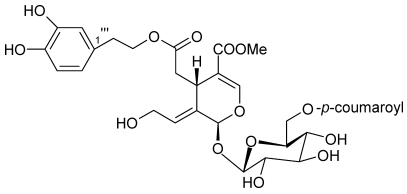
$C_{27}H_{32}O_{15}$: 596.1741; amorphous solid; $[\alpha]_D^{25}$ −129.0° (c=0.25, MeOH); UV (MeOH): 202 (4.24), 218 (4.13), 232 (4.04), 293 (3.75), 326 (3.94); IR (neat): 3470, 2930, 1710, 1635, 1520, 1445, 1275, 1165, 1074; ^{1}H-NMR (300 MHz, CD_3OD): 5.95 (br s, H-1), 7.46 (s, H-3), 4.09 (dd, 9.8, 3.3, H-5), 2.90 (dd, 15.3, 3.3, H_α-6), 2.50 (dd, 15.3, 9.8, H_β-6), 6.17 (t, 6.5, H-8), 4.95, 4.85 (H_2-10), 4.81 (overlapped, H-1′), 3.30—3.90 (m, H-2′, 3′, 4′, 5′, 6′), 3.65 (s, MeO-7), 7.17 (d, 1.5, H-2″), 6.81 (d, 8.1, H-5″), 7.06 (dd, 8.1, 1.5, H-6″), 7.62 (d, 16.0, H-7″), 6.34 (d, 16.0, H-8″), 3.88 (s, MeO-3″); ^{13}C-NMR (75 MHz, CD_3OD): 94.2 (C-1), 153.3 (C-3), — (C-4), 33.1 (C-5), 41.2 (C-6), 173.8 (C-7), 124.0 (C-8), 135.0 (C-9), 62.0 (C-10), 169.0 (C-11), 52.4 (OMe-7), 101.0 (C-1′), 74.8 (C-2′), 78.5 (C-3′), 71.5 (C-4′), 78.0 (C-5′), 62.8 (C-6′), 127.8 (C-1″), 112.0 (C-2″), 150.8 (C-3″), 149.5 (C-4″), 115.4 (C-5″), 124.2 (C-6″), 147.2 (C-7″), 116.6 (C-8″), 168.1 (C-9″), 56.7 (MeO-3″). *Jasminum lanceolarium* (Oleaceae).[50]

96. Jaslanceoside B



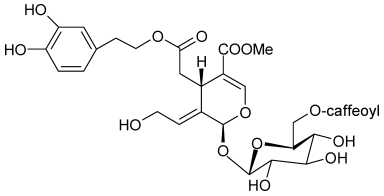
$C_{26}H_{30}O_{14}$: 566.1635; amorphous powder; $[\alpha]_D^{25}$ −171.0° (c=0.2, MeOH); UV (MeOH): 201 (4.15), 212 (4.71), 229 (4.26), 299 (4.17), 314 (4.24); IR (neat): 3240, 2900, 1708, 1694, 1636, 1606, 1514, 1446, 1204, 1168, 1078, 1042, 992, 838; ^{1}H-NMR (300 MHz, CD_3OD): 5.95 (br s, H-1), 7.48 (s, H-3), 4.08 (dd, 9.7, 3.5, H-5), 2.82 (dd, 15.3, 3.5, H_α-6), 2.51 (dd, 15.3, 9.7, H_β-6), 6.17 (t, 6.5, H-8), 4.95, 4.87 (H_2-10), 4.82 (overlapped, H-1′), 3.30—3.90 (m, H-2′, 3′, 4′, 5′, 6′), 3.65 (s, MeO-7), 7.45 (d, 8.8, H-2″, 6″), 6.80 (d, 8.8, H-3″, 5″), 7.61 (d, 16.0, H-7″), 6.31 (d, 16.0, H-8″); ^{13}C-NMR (75 MHz, CD_3OD): 94.2 (C-1), 153.9 (C-3), — (C-4), 33.0 (C-5), 41.1 (C-6), 173.7 (C-7), 124.2 (C-8), 134.9 (C-9), 62.0 (C-10), 169.1 (C-11), 52.4 (MeO-7), 101.0 (C-1′), 74.8 (C-2′), 78.5 (C-3′), 71.5 (C-4′), 78.0 (C-5′), 62.8 (C-6′), 127.2 (C-1″), 131.3 (C-2″, 6″), 117.0 (C-3″, 5″), 161.4 (C-4″), 146.9 (C-7″), 115.1 (C-8″), 168.2 (C-9″). *Jasminum lanceolarium* (Oleaceae).[50]

97. Fraxicarboside A



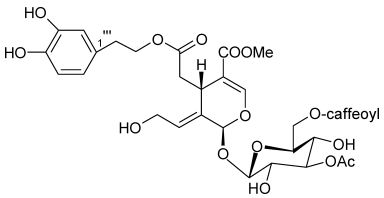
$C_{34}H_{38}O_{16}$: 702.2159; white amorphous powder; UV (MeOH): 233, 329; IR (KBr): 3450—3350, 2950, 1715, 1646, 1570, 1490, 1470, 1300, 1070, 975, 776; ^{1}H-NMR (600 MHz, CD_3OD): 5.92 (br s, H-1), 7.63 (s, H-3), 3.78 (dd, 9.5, 4.5, H-5), 2.47 (dd, 14.5, 8.5, H-6), 2.59 (dd, 14.5, 4.3, H-6), 6.21 (t, 7.3, H-8), 3.96 (dd, 9.2, 7.5, H-10), 4.38 (dd, 12.5, 7.5, H-10), 3.71 (s, OMe), 4.76 (d, 8.0, H-1′), 3.13 (dd, 8.5, 8.0, H-2′), 3.29 (dd, 9.2, 8.5, H-3′), 3.26 (dd, 9.8, 8.2, H-4′), 3.34 (ddd, 9.8, 5.3, 2.1, H-5′), 4.48 (dd, 11.5, 5.3, H-6′), 4.69 (dd, 11.5, 2.1, H-6′), 7.36 (d, 8.6, H-2″, 6″), 6.87 (d, 8.6, H-3″, 5″), 7.68 (d, 16.0, H-7″), 6.44 (d, 16.0, H-8″), 6.67 (d, 2.0, H-2‴), 6.63 (d, 8.0, H-5‴), 6.51 (dd, 8.0, 2.0, H-6‴), 2.80 (t, 7.3, H_2-7‴), 4.13 (t, 7.3, H_2-8‴); ^{13}C-NMR (90 MHz, CD_3OD): 94.7 (C-1), 155.1 (C-3), 108.9 (C-4), 31.8 (C-5), 41.9 (C-6), 173.3 (C-7), 128.1 (C-8), 130.2 (C-9), 60.6 (C-10), 168.1 (C-11), 51.8 (OMe), 99.2 (C-1′), 74.5 (C-2′), 77.4 (C-3′), 71.1 (C-4′), 74.1 (C-5′), 66.1 (C-6′), 126.8 (C-1″), 130.6 (C-2″, 6″), 116.4 (C-3″, 5″), 160.3 (C-4″), 144.6 (C-7″), 115.8 (C-8″), 169.8 (C-9″), 131.1 (C-1‴), 115.8 (C-2‴), 146.5 (C-3‴), 145.1 (C-4‴), 116.8 (C-5‴), 122.1 (C-6‴), 35.9 (C-7‴), 71.1 (C-8‴). *Fraxinus oxycarba* (Oleaceae).[51]

98. Fraxicarboside B



$C_{34}H_{38}O_{17}$: 718.2108; white amorphous powder; UV (MeOH): 230, 335; IR (KBr): 3400—3370, 2955, 1700, 1630, 1580, 1500, 1440, 1270, 1160, 1070, 975, 860, 785; ^{1}H-NMR (600 MHz, CD_3OD): 5.83 (br s, H-1), 7.75 (s, H-3), 3.76 (dd, 9.2, 4.5, H-5), 2.36 (dd, 14.2, 9.0, H-6), 2.63 (dd, 14.2, 4.5, H-6), 6.32 (br t, 7.0, H-8), 3.88 (dd, 9.2, 7.5, H-10), 4.25 (dd, 12.5, 7.5, H-10), 3.68 (s, OMe), 4.86 (d, 7.8, H-1′), 3.41 (dd, 8.2, 7.8, H-2′), 3.48 (dd, 9.0, 8.2, H-3′), 3.33 (dd, 10.0, 8.5, H-4′), 3.39 (ddd, 9.8, 5.3, 2.1, H-5′), 4.53 (dd, 12.2, 5.5, H-6′), 4.76 (dd, 12.2, 2.0, H-6′), 7.11 (d, 2.2, H-2″), 6.79 (d, 8.2, H-5″), 7.05 (dd, 8.2, 2.2, H-6″), 7.58 (d, 15.7, H-7″), 6.29 (d, 15.7, H-8″), 6.71 (d, 2.3, H-2‴), 6.67 (d, 8.0, H-5‴), 6.58 (dd, 8.0, 2.5, H-6‴), 2.79 (t, 7.5, H_2-7‴), 4.10 (t, 7.5, H_2-8‴); ^{13}C-NMR (90 MHz, CD_3OD): 95.1 (C-1), 154.5 (C-3), 109.1 (C-4), 30.6 (C-5), 40.8 (C-6), 171.8 (C-7), 128.9 (C-8), 131.3 (C-9), 59.1 (C-10), 168.7 (C-11), 52.1 (OMe), 98.7 (C-1′), 75.3 (C-2′), 77.1 (C-3′), 70.5 (C-4′), 75.1 (C-5′), 66.2 (C-6′), 127.8 (C-1″), 115.1 (C-2″), 148.7 (C-3″), 146.9 (C-4″), 117.3 (C-5″), 122.7 (C-6″), 145.6 (C-7″), 115.9 (C-8″), 168.6 (C-9″), 130.7 (C-1‴), 116.2 (C-2‴), 146.6 (C-3‴), 145.9 (C-4‴), 117.1 (C-5‴), 121.3 (C-6‴), 35.4 (C-7‴), 72.1 (C-8‴). *Fraxinus oxycarba* (Oleaceae).[51]

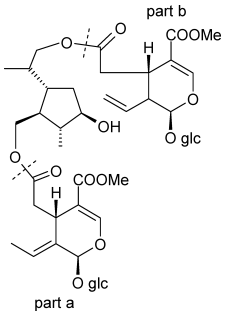
99. Fraxicarboside C



$C_{36}H_{40}O_{18}$: 760.2214; white amorphous powder; UV (MeOH): 222, 245, 330; IR (KBr): 3410—3350, 2948, 1688, 1635, 1590, 1514, 1444, 1265, 1115, 1112, 1060, 915, 830, 780; ^{1}H-NMR (600 MHz, CD_3OD): 5.90 (br s, H-1), 7.54 (s, H-3), 3.85 (dd, 9.0, 4.5, H-5), 2.39 (dd, 14.5, 9.0, H-6), 2.48 (dd, 14.5, 4.5, H-6), 6.28 (t, 7.5, H-8), 3.83 (dd, 9.2, 7.5, H-10), 4.19 (dd, 12.5, 7.5, H-10), 3.72 (s, OMe), 5.02 (d, 7.9, H-1′), 3.47 (t, 9.5, H-2′), 5.13 (dd, 9.5, 9.0, H-3′), 3.43 (dd, 10.0, 8.5, H-4′), 3.89 (ddd, 9.8, 5.3, 2.1, H-5′), 4.41 (dd, 12.5, 5.7, H-6′), 4.64 (dd, 12.5, 2.5, H-6′), 1.99 (s, AcO-4′), 7.07 (d, 2.0, H-2″), 6.83 (d, 8.5, H-5″), 6.98 (dd, 8.5, 2.0, H-6″), 7.62 (d, 16.1, H-7″), 6.33 (d, 16.1, H-8″), 6.65 (d, 1.9, H-2‴), 6.70 (d, 8.0, H-5‴), 6.53 (dd, 8.0, 2.0, H-6‴), 2.89 (t, 7.5, H_2-7‴), 4.10 (t, 7.5, H_2-8‴); ^{13}C-NMR (90 MHz, CD_3OD): 94.7 (C-1), 154.8 (C-3), 109.3 (C-4), 30.8 (C-5), 41.1 (C-6), 173.2 (C-7), 129.3 (C-8), 131.9 (C-9), 59.4 (C-10), 167.6 (C-11), 52.4 (OMe), 97.8 (C-1′), 74.9 (C-2′), 79.5 (C-3′), 68.6 (C-4′), 74.6 (C-5′), 65.1 (C-6′), 127.1 (C-1″), 115.2 (C-2″), 148.6 (C-3″), 147.3 (C-4″), 116.7 (C-5″), 123.4 (C-6″), 147.8 (C-7″), 116.5 (C-8″), 169.6 (C-9″), 21.3, 171.0 (Ac), 130.8 (C-1‴), 116.9 (C-2‴), 146.2 (C-3‴), 144.8 (C-4‴), 117.5 (C-5‴), 121.8 (C-6‴), 36.1 (C-7‴), 72.6 (C-8‴). *Fraxinus oxycarba* (Oleaceae).[51]

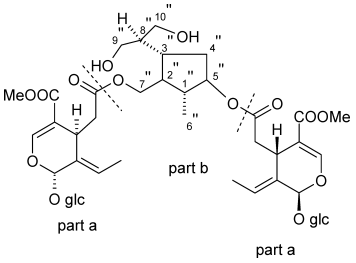
Group 4: Bis-, Tris- and Tetrakis-Secoiridoids:
A. Terpene conjugated

100. Jasuroside G



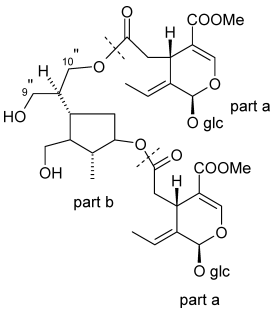
$C_{44}H_{64}O_{23}$: 960.3837; amorphous powder; $[\alpha]_D^{25}$ −116.0° (c=0.2, MeOH); UV (MeOH): 236 (4.58); IR (neat): 3408, 2930, 1710, 1632, 1442, 1386, 1344, 1306, 1190, 1162, 1078, 1046, 948, 926, 854, 816, 770; ^{1}H-NMR (300 MHz, CD_3OD): part a: 5.94 (s, H-1), 7.53 (s, H-3), 4.00 (m, H-5), 2.49 (dd, 14.0, 9.0, H-6), 2.73 (dd, 14.0, 4.8, H-6), 6.11 (q, 6.6, H-8), 1.75 (d, 6.6, H_3-10), 3.72 (s, MeO-11), 4.81 (d, 7.8, H-1′), 3.30—3.90 (m, H-2′, 3′, 4′, 5′, 6′), 1.80 (m, H-1″) 1.86 (m, H-2″), 1.70 (m, H-3″), 1.84 (m, H-4″), 1.96 (m, H-4″), 3.98 (m, H-5″), 0.99 (d, 6.9, H_3-6″), 4.17 (m, H-7″), 3.90 (m, H-7″), 1.65 (m, H-8″), 1.03 (d, 6.3, H_3-9″), 3.41 (m, H-10″), 3.59 (m, H-10″); part b: 5.47 (s, H-1), 7.48 (s, H-3), 3.23 (m, H-5), 2.33 (dd, 16.0, 9.0, H-6), 2.89 (dd, 16.0, 6.6, H-6), 5.65 (m, H-8), 3.88 (m, H-9), 5.24 (m, H_2-10), 3.67 (s, MeO-11), 4.60 (d, 7.8, H-1′), 3.30—3.90 (m, H-2′, 3′, 4′, 5′, 6′); ^{13}C-NMR (75.4 MHz, CD_3OD): part a: 95.0 (C-1), 155.1 (C-3), 109.3 (C-4), 31.9 (C-5), 41.3 (C-6), 173.2 (C-7), 124.7 (C-8), 130.7 (C-9), 13.7 (C-10), 168.6 (C-11), 52.0 (MeO-11), 100.7 (C-1′), 74.6 (C-2′), 78.3 (C-3′), 71.5 (C-4′), 77.9 (C-5′), 62.7 (C-6′), 46.7 (C-1″), 48.1 (C-2″), 42.6 (C-3″), 37.6 (C-4″), 79.4 (C-5″), 18.3 (C-6″), 68.9 (C-7″), 37.6 (C-8″), 16.2 (C-9″), 68.9 (C-10″); part b: 97.5 (C-1), 153.7 (C-3), 109.9 (C-4), 29.0 (C-5), 35.5 (C-6), 174.3 (C-7), 134.5 (C-8), 45.4 (C-9), 120.7 (C-10), 168.7 (C-11), 51.8 (MeO-11), 100.0 (C-1′), 74.7 (C-2′), 78.4 (C-3′), 71.6 (C-4′), 78.0 (C-5′), 62.9 (C-6′). *Jasminum urophyllum* (Oleaceae).[28)]

101. Molihuaside A



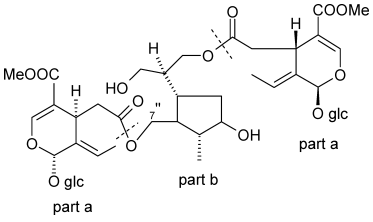
$C_{44}H_{64}O_{24}$: 976.3786; yellowish powder, mp 121—124 °C; $[\alpha]_D^{25}$ −203.4° (c=0.23, MeOH); UV (EtOH): 201 (3.76), 238 (4.29); IR (KBr): 3400, 1705, 1625, 1435, 1305, 1075; ^{1}H-NMR (400 MHz, CD_3OD): 5.93 (br s, H-1), 7.53 (s, H-3), 6.11 (br q, 7.0, H-8), 1.75 (br d, 7.0, H_3-10), 3.72 (s, MeO), 4.81 (d, 8.0, H-1′), 1.05 (d, 7.0, H_3-6″); ^{13}C-NMR (100 MHz, CD_3OD): part a: 95.1 (C-1), 155.2 (C-3), 109.4 (C-4), 31.9 (C-5), 41.3 (C-6), 173.1 (C-7), 124.9 (C-8), 130.8 (C-9), 13.8 (C-10), 168.7 (C-11), 52.0 (OMe), 100.8 (C-1′), 74.8 (C-2′), 78.4 (C-3′), 71.4 (C-4′), 77.9 (C-5′), 62.8 (C-6′); part b: 44.3 (C-1″), 49.6 (C-2″), 39.7 (C-3″), 34.8 (C-4″), 83.4 (C-5″), 19.1 (C-6″), 68.5 (C-7″), 47.5 (C-8″), 62.8 (C-9″), 61.9 (C-10″). *Jasminum sambac* (Oleaceae).[53)]

102. Molihuaside C



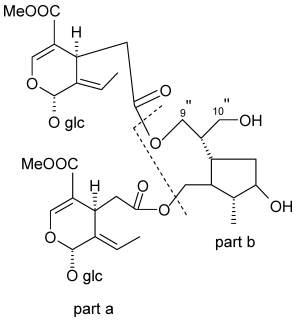
$C_{44}H_{64}O_{24}$: 976.3786; amorphous powder, mp 140—143 °C; $[\alpha]_D^{25}$ −180.9° (c=0.28, MeOH); IR (KBr): 3400, 1700, 1625, 1432, 1300, 1075; ^{1}H-NMR (400 MHz, CD_3OD): part a: 5.90, 5.94 (each br s, H-1), 7.48, 7.53 (each s, H-3), 6.09 (m, H-8), 1.74 (br s, H_3-10), 3.72 (s, OMe), 4.81 (br d, 7.0, H-1′); part b: 1.04 (d, 7.0, H_3-6″); ^{13}C-NMR (100 MHz, CD_3OD): part a: 95.2 (C-1), 155.1 (C-3), 109.4 (C-4), 31.9 (C-5), 41.3 (C-6), 173.1 (C-7), 124.9 (C-8), 130.8 (C-9), 13.7 (C-10), 168.6 (C-11), 52.0 (OMe), 100.8 (C-1′), 74.8 (C-2′), 78.4 (C-3′), 71.5 (C-4′), 78.0 (C-5′), 62.7 (C-6′); part b: 44.8 (C-1″), 52.2 (C-2″), 39.4 (C-3″), 35.1 (C-4″), 83.3 (C-5″), 19.0 (C-6″), 62.3 (C-7″), 43.3 (C-8″), 65.2 (C-9″), 64.5 (C-10″). *Jasminum sambac* (Oleaceae).[53)]

103. Molihuaside D



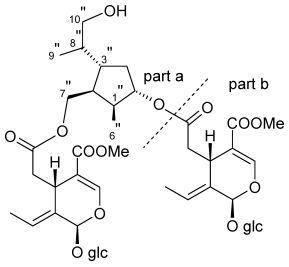
$C_{44}H_{64}O_{24}$: 976.3786; yellowish amorphous powder, mp 151—154 °C; $[\alpha]_D^{25}$ −153.3° (c=0.26, MeOH); UV (EtOH): 200 (4.11), 235 (4.24); IR (KBr): 3400, 1700, 1625, 1430, 1300, 1075; ^{1}H-NMR (400 MHz, CD_3OD): part a: 5.93 (br s, H-1), 7.52, 7.53 (each s, H-3), 6.10 (m, 7.0, H-8), 1.75 (br d, 7.0, H_3-10), 3.71 (s, OMe-11), 4.81 (d, 8.0, H-1′); part b: 1.04 (d, 6.0, H_3-6″); ^{13}C-NMR (100 MHz, CD_3OD): part a: 95.2 (C-1), 155.1 (C-3), 109.5 (C-4), 31.9 (C-5), 41.3 (C-6), 173.4 (C-7), 124.9 (C-8), 130.8 (C-9), 13.7 (C-10), 168.7 (C-11), 52.0 (OMe), 100.9 (C-1′), 74.8 (C-2′), 78.4 (C-3′), 71.5 (C-4′), 78.0 (C-5′), 62.8 (C-6′); part b: 46.6 (C-1″), 49.6 (C-2″), 39.0 (C-3″), 36.9 (C-4″), 79.6 (C-5″), 18.4 (C-6″), 68.4 (C-7″), 44.9 (C-8″), 64.5 (C-9″), 62.6 (C-10″). *Jasminum sambac* (Oleaceae).[53)]

104. Molihuaside E



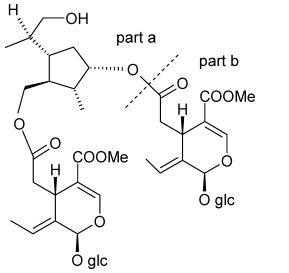
$C_{44}H_{64}O_{24}$: 976.3786; yellowish powder, mp 123—126 °C; $[\alpha]_D^{25}$ −190.8° (c=0.26, MeOH); UV (EtOH): 201 (3.88), 237 (4.36); IR (KBr): 3400, 1705, 1625, 1435, 1305, 1075; ^{1}H-NMR (400 MHz, CD_3OD): part a: 5.93 (br s, H-1), 7.53 (s, H-3), 2.49 (dd, 14.0, 9.0, H-6), 2.72 (dd, 14.0, 4.0, H-6), 6.11 (br q, 7.0, H-8), 1.75 (br d, 7.0, H_3-10), 3.72 (s, OMe), 4.81 (d, 8.0, H-1′); part b: 1.04 (d, 6.0, H_3-6″); ^{13}C-NMR (100 MHz, CD_3OD): part a: 95.1 (C-1), 155.1 (C-3), 109.4 (C-4), 31.9 (C-5), 41.3 (C-6), 173.2 (C-7), 124.8 (C-8), 130.6 (C-9), 13.8 (C-10), 168.6 (C-11), 52.0 (OMe), 100.8 (C-1′), 74.7 (C-2′), 78.4 (C-3′), 71.4 (C-4′), 77.9 (C-5′), 62.7 (C-6′); part b: 46.5 (C-1″), 49.4 (C-2″), 38.9 (C-3″), 36.8 (C-4″), 79.5 (C-5″), 18.4 (C-6″), 68.3 (C-7″), 44.8 (C-8″), 62.4 (C-9″), 64.4 (C-10″). *Jasminum sambac* (Oleaceae).[53)]

105. Jasuroside A



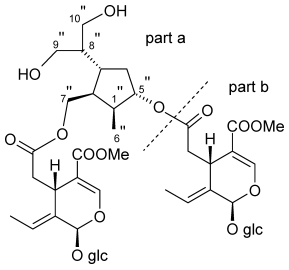
$C_{44}H_{64}O_{23}$: 960.3837; amorphous solid; $[\alpha]_D^{25}$ −235.0° (c=0.11, MeOH); UV (MeOH): 236 (4.58); IR (neat): 3424, 2964, 2916, 1736, 1712, 1636, 1442, 1394, 1308, 1162, 966, 922, 898, 862, 814, 792, 768; ^{1}H-NMR (300 MHz, CD_3OD): part a: 5.94 (s, H-1), 7.52 (s, H-3), 4.00 (dd, 6.6, 3.3, H-5), 2.52 (dd, 10.5, 6.6, H-6), 2.72 (dd, 10.5, 3.6, H-6), 6.11 (q, 5.4, H-8), 1.74 (d, 5.4, H_3-10), 3.72 (s, OMe), 4.80 (H-1′), 3.30—4.00 (H-2′, 3′, 4′, 5′, 6′), 1.95 (m, H-1″), 1.82 (m, H-2″), 1.84 (m, H-3″), 1.64 (m, H-4″), 2.08 (m, H-4″), 5.04 (dd, 6.6, 3.9, H-5″), 0.94 (d, 5.1, H_3-6″), 3.96 (dd, 8.6, 3.9, H-7″), 4.21 (m, H-7″), 1.65 (m, H-8″), 0.99 (d, 5.1, H_3-9″), 3.31 (m, H-10″), 3.59 (m, H-10″); part b: 5.95 (s, H-1), 7.52 (s, H-3), 4.00 (dd, 6.6, 3.5, H-5), 2.52 (dd, 10.5, 6.6, H-6), 2.72 (dd, 10.5, 3.5, H-6), 6.11 (q, 5.4, H-8), 1.74 (d, 5.4, H_3-10), 4.80 (H-1′), 3.30—4.00 (H-2′, 3′, 4′, 5′, 6′); ^{13}C-NMR (75.4 MHz, CD_3OD): part a: 95.2 (C-1), 155.2 (C-3), 109.4 (C-4), 32.1 (C-5), 41.5 (C-6), 173.4 (C-7), 124.7 (C-8), 130.8 (C-9), 13.8 (C-10), 168.7 (C-11), 51.9 (MeO-11), 100.8 (C-1′), 74.8 (C-2′), 78.6 (C-3′), 71.6 (C-4′), 78.0 (C-5′), 62.9 (C-6′), 41.8 (C-1″), 48.1 (C-2″), 42.6 (C-3″), 35.3 (C-4″), 80.0 (C-5″), 14.1 (C-6″), 67.2 (C-7″), 41.0 (C-8″), 16.3 (C-9″), 66.4 (C-10″); part b: 94.8 (C-1), 155.1 (C-3), 109.4 (C-4), 31.9 (C-5), 41.2 (C-6), 172.9 (C-7), 124.7 (C-8), 130.7 (C-9), 13.7 (C-10), 168.6 (C-11), 51.9 (OMe), 100.5 (C-1′), 74.8 (C-2′), 78.5 (C-3′), 71.6 (C-4′), 77.9 (C-5′), 62.9 (C-6′). *Jasminum urophyllum* (Oleaceae).[54]

106. Jasnudifloside A (Jasuroside A?)



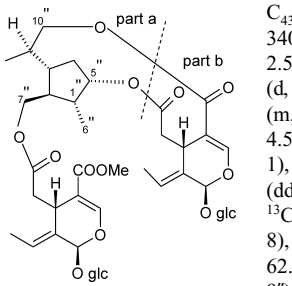
$C_{44}H_{64}O_{23}$: 960.3837; colorless amorphous powder; $[\alpha]_D^{20}$ −192.0° (c=0.78, MeOH); UV (MeOH): 237 (4.38); IR (KBr): 3406, 1732, 1709, 1632, 1078; ^{1}H-NMR (500 MHz, CD_3OD): part a: 5.96 (br s, H-1), 7.53 (s, H-3), 4.00 (dd, 9.0, 4.5, H-5), 2.52 (dd, 14.0, 9.0, H-6), 2.73 (dd, 14.0, 4.5, H-6), 6.11 (qd, 7.0, 1.0, H-8), 1.75 (dd, 7.0, 1.0, H_3-10), 3.72 (s, MeO-11), 4.80 (d, 8.5, H-1′), 3.27—3.41 (m, H-2′—H-5′), 3.65 (dd, 12.0, 6.0, H-6′), 3.89 (dd, 12.0, 2.0, H-6′), 1.96 (m, H-1″), 1.84 (m, H-2″), 1.81 (m, H-3″), 1.62 (ddd, 14.0, 5.5, 4.0, H-4″), 2.08 (ddd, 14.0, 9.0, 5.5, H-4″), 5.04 (td, 5.5, 4.0, H-5″), 0.93 (d, 7.0, H_3-6″), 3.96 (dd, 11.5, 5.0, H-7″), 4.21 (dd, 11.5, 4.0, H-7″), 1.66 (ddd, 14.0, 7.0, 4.0 H-8″), 0.99 (d, 7.0, H_3-9″), 3.34 (m, H-10″), 3.59 (dd, 10.0, 4.5, H-10″); part b: 5.95 (br s, H-1), 7.53 (s, H-3), 4.00 (dd, 9.0, 4.5, H-5), 2.52 (dd, 14.0, 9.0, H-6), 2.70 (dd, 14.0, 4.5, H-6), 6.12 (qd, 7.0, 1.0, H-8), 1.76 (dd, 7.0, 1.5, H_3-10), 3.72 (s, OMe), 4.81 (d, 7.5, H-1′), 3.27—3.41 (m, H-2′—H-5′), 3.66 (dd, 12.0, 6.0, H-6′), 3.90 (dd, 12.0, 2.0, H-6′); ^{13}C-NMR (125 MHz, CD_3OD): part a: 95.2 (C-1), 155.2 (C-3), 109.4 (C-4), 32.2 (C-5), 41.5 (C-6), 173.4 (C-7), 124.8 (C-8), 130.8 (C-9), 13.7 (C-10), 168.6 (C-11), 52.0 (OMe), 100.8 (C-1′), 74.8 (C-2′), 78.0 (C-3′), 71.6 (C-4′), 78.5 (C-5′), 62.9 (C-6′), 41.8 (C-1″), 48.1 (C-2″), 42.6 (C-3″), 35.4 (C-4″), 80.1 (C-5″), 14.2 (C-6″), 67.2 (C-7″), 41.1 (C-8″), 16.3 (C-9″), 66.5 (C-10″); part b: 94.8 (C-1), 155.3 (C-3), 109.4 (C-4), 31.9 (C-5), 41.3 (C-6), 173.0 (C-7), 125.0 (C-8), 130.8 (C-9), 13.8 (C-10), 168.9 (C-11), 52.0 (OMe), 100.5 (C-1′), 74.8 (C-2′), 78.0 (C-3′), 71.7 (C-4′), 78.6 (C-5′), 62.9 (C-6′). *Jasminum nudiflorum* (Oleaceae).[55]

107. Jasuroside C



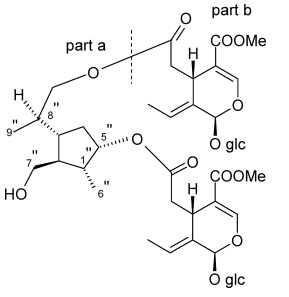
$C_{44}H_{64}O_{24}$: 976.3786; amorphous powder; $[\alpha]_D^{25}$ −185.0° (c=0.13, MeOH); UV (MeOH): 236 (4.58); IR (neat): 3404, 2924, 1710, 1634, 1442, 1386, 1354, 1262, 1192, 1162, 1076, 1044, 924, 902, 814, 768, 720; ^{1}H-NMR (300 MHz, CD_3OD): part a: 5.94 (s, H-1), 7.53 (s, H-3), 4.01 (m, H-5), 2.52 (dd, 13.8, 9.3, H-6), 2.72 (dd, 11.8, 4.2, H-6), 6.13 (q, 5.7, H-8), 1.75 (d, 5.4, H_3-10), 3.72 (s, MeO-11), 1.94 (m, H-1″), 1.90 (m, H-2″), 1.85 (m, H-3″), 1.65 (m, H-4″), 2.06 (m, H-4″), 5.02 (m, H-5″), 0.94 (d, 6.6, H_3-6″), 3.90 (m, H-7″), 4.21 (m, H-7″), 1.65 (m, H-8″), 3.67 (m, H-9″), 3.90 (m, H-9″), 3.40 (m, H-10″), 3.57 (m, H-10″), sugar protons-not reported; part b: 5.97 (s, H-1), 7.53 (s, H-3), 4.01 (m, H-5), 2.52 (dd, 11.8, 7.0, H-6), 2.72 (dd, 11.8, 4.2, H-6), 6.13 (q, 5.7, H-8), 1.75 (d, 5.7, H_3-10), sugar protons-not reported; ^{13}C-NMR (75.4 MHz, CD_3OD): part a: 95.3 (C-1), 155.4 (C-3), 109.5 (C-4), 32.2 (C-5), 41.6 (C-6), 173.5 (C-7), 124.9 (C-8), 130.9 (C-9), 13.9 (C-10), 168.8 (C-11), 52.1 (OMe), 100.9 (C-1′), 74.9 (C-2′), 78.7 (C-3′), 71.8 (C-4′), 78.1 (C-5′), 63.3 (C-6′), 41.8 (C-1″), 49.4 (C-2″), 38.9 (C-3″), 34.7 (C-4″), 80.2 (C-5″), 14.1 (C-6″), 66.7 (C-7″), 47.7 (C-8″), 62.0 (C-9″), 63.0 (C-10″); part b: 94.9 (C-1), 155.3 (C-3), 109.5 (C-4), 32.0 (C-5), 41.3 (C-6), 173.0 (C-7), 124.9 (C-8), 130.8 (C-9), 13.9 (C-10), 168.8 (C-11), 52.1 (OMe), 100.6 (C-1′), 74.9 (C-2′), 78.6 (C-3′), 71.7 (C-4′), 78.1 (C-5′), 63.6 (C-6′). *Jasminum urophyllum* (Oleaceae).[54]

108. Jasnudifloside C



$C_{43}H_{60}O_{22}$: 928.3575; colorless amorphous powder; $[\alpha]_D^{22}$ −238.0° (c=0.31, MeOH); UV (MeOH): 237 (4.39); IR (KBr): 3400, 1728, 1709, 1630, 1078; ^{1}H-NMR (500 MHz, CD_3OD): part a: 5.95 (br s, H-1), 7.54 (s, H-3), 4.01 (dd, 9.5, 4.5, H-5), 2.54 (dd, 14.0, 9.0, H-6), 2.73 (dd, 14.0, 4.5, H-6), 6.13 (qd, 7.0, 1.0, H-8), 1.75 (dd, 7.0, 1.0, H_3-10), 3.72 (s, MeO), 4.81 (d, 8.0, H-1′), 3.27—3.41 (m, H-2′—H-5′), 3.64 (dd, 11.5, 6.0, H-6′), 3.88 (dd, 11.5, 1.5, H-6′), 1.81 (m, H-1″, 3″), 1.91 (m, H-2″), 2.01 (br dd, 11.0, 4.5, H_2-4″), 4.91 (br t, 3.5, H_2-5″), 1.00 (d, 6.5, H_3-6″), 4.08 (dd, 11.5, 4.5, H-7″), 4.19 (dd, 11.5, 4.5, H-7″), 2.08 (m, H-8″), 0.97 (d, 7.0, H_3-9″), 4.12 (m, 11.5, 3.5, H-10″), 4.34 (dd, 11.4, 9.0, H-10″); part b: 5.87 (br s, H-1), 7.43 (s, H-3), 3.99 (dd, 9.5, 4.5, H-5), 2.37 (dd, 14.0, 4.5, H-6), 2.45 (dd, 14.0, 9.5, H-6), 6.07 (qd, 7.0, 1.0, H-8), 1.82 (dd, 7.0, 1.0, H_3-10), 4.81 (d, 8.0, H-1′), 3.27—3.41 (m, H-2′—H-5′), 3.67 (dd, 12.0, 6.5, H-6′), 3.90 (dd, 12.0, 2.0, H-6′); ^{13}C-NMR (125 MHz, CD_3OD): part a: 94.8 (C-1), 155.2 (C-3), 109.4 (C-4), 32.2 (C-5), 41.2 (C-6), 173.4 (C-7), 124.7 (C-8), 130.8 (C-9), 13.7 (C-10), 168.6 (C-11), 52.0 (OMe), 100.6 (C-1′), 74.8 (C-2′), 78.0 (C-3′), 71.6 (C-4′), 78.5 (C-5′), 62.8 (C-6′), 42.4 (C-1″), 50.6 (C-2″), 46.3 (C-3″), 32.0 (C-4″), 82.2 (C-5″), 13.2 (C-6″), 66.7 (C-7″), 37.1 (C-8″), 19.2 (C-9″), 67.9 (C-10″); part b: 95.2 (C-1), 153.3 (C-3), 111.3 (C-4), 31.7 (C-5), 43.9 (C-6), 173.6 (C-7), 123.6 (C-8), 132.3 (C-9), 13.2 (C-10), 168.8 (C-11), 100.9 (C-1′), 74.9 (C-2′), 78.0 (C-3′), 71.7 (C-4′), 78.7 (C-5′), 63.0 (C-6′). *Jasminum nudiflorum* (Oleaceae).[55]

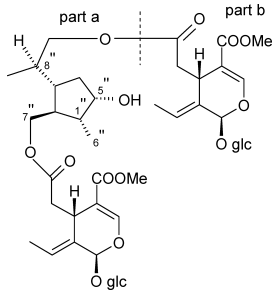
109. Jasnudifloside D



$C_{44}H_{64}O_{23}$: 960.3837; colorless amorphous powder; $[\alpha]_D^{25}$ −203.0° (c=1.05, MeOH); UV (MeOH): 237 (4.38); IR (KBr): 3423, 1731, 1709, 1632, 1078; ^{1}H-NMR (500 MHz, CD_3OD): part a: 5.93 (br s, H-1), 7.53 (s, H-3), 3.99 (dd, 9.0, 4.5, H-5), 2.49 (dd, 14.0, 9.0, H-6), 2.71 (dd, 14.0, 4.5, H-6), 6.10 (br q, 7.0, H-8), 1.74 (dd, 7.0, 1.5, H_3-10), 3.72 (s, MeO), 4.80 (d, 8.0, H-1′), 3.28-3.34 (m, H-2′, 4′, 5′), 3.41 (t, 9.0, H-3′), 3.66 (dd, 12.0, 5.0, H-6′), 3.87 (dd, 12.0, 2.0, H-6′), 2.00 (m, H-1″), 1.65 (m, H-2″), 1.82 (m, H-3″), 1.62 (m, H-4″), 2.02 (m, H-4″), 5.02 (br q, 5.5, H-5″), 0.95 (d, 7.0, H_3-6″), 3.60 (dd, 12.0, 5.0, H_2-7″), 1.89 (m, H-8″), 1.00 (d, 6.5, H_3-9″), 3.72 (dd, 11.0, 7.0, H-10″), 4.18 (dd, 11.0, 4.0, H-10″); part b: 5.96 (br s, H-1), 7.53 (s, H-3), 4.01 (dd, 9.0, 4.5, H-5), 2.50 (dd, 14.0, 9.0, H-6), 2.73 (dd, 14.0, 4.5, H-6), 6.10 (br q, 7.0, H-8), 1.75 (dd, 7.0, 1.5, H_3-10), 3.72 (s, MeO), 4.81 (d, 8.0, H-1′), 3.28—3.34 (m, H-2′, 4′, 5′), 3.41 (t, 9.0, H-3′), 3.67 (dd, 12.0, 5.0, H-6′), 3.88 (dd, 12.0, 2.0, H-6′); ^{13}C-NMR (125 MHz, CD_3OD): part a: 95.1 (C-1), 155.2 (C-3), 109.4 (C-4), 31.9 (C-5), 41.2 (C-6), 173.0 (C-7), 124.7 (C-8), 130.7 (C-9), 13.8 (C-10), 168.6 (C-11), 52.0 (OMe), 100.8 (C-1′), 74.8 (C-2′), 77.9 (C-3′), 71.5 (C-4′), 78.4 (C-5′), 62.8 (C-6′), 41.2 (C-1″), 51.2 (C-2″), 42.7 (C-3″), 34.7 (C-4″), 80.2 (C-5″), 14.2 (C-6″), 64.2 (C-7″), 37.5 (C-8″), 17.1 (C-9″), 69.2 (C-10″); part b: 95.3 (C-1), 155.2 (C-3), 109.4 (C-4), 31.9 (C-5), 41.6 (C-6), 173.2 (C-7), 124.8 (C-8), 130.8 (C-9), 13.8 (C-10), 168.6 (C-11), 52.0

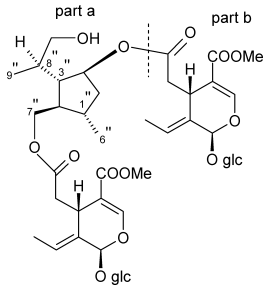
(OMe), 100.9 (C-1′), 74.8 (C-2′), 77.9 (C-3′), 71.5 (C-4′), 78.4 (C-5′), 62.8 (C-6′). *Jasminum nudiflorum* (Oleaceae).[26)]

110. Jasnudifloside E



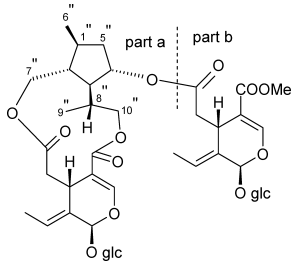
$C_{44}H_{64}O_{23}$: 960.3837; colorless amorphous powder; $[\alpha]_D^{24}$ −196.0° (c=0.67, MeOH); UV (MeOH): 237 (4.37); IR (KBr): 3409, 1733, 1707, 1638, 1078; ^{1}H-NMR (500 MHz, CD_3OD): part a: 5.93 (br s, H-1), 7.53 (s, H-3), 3.99 (dd, 9.0, 5.0, H-5), 2.49 (dd, 14.0, 9.0, H-6), 2.71 (dd, 14.0, 5.0, H-6), 6.11 (qd, 7.0, 1.0, H-8), 1.75 (br d, 7.0, H_3-10), 3.71 (s, MeO), 4.80 (d, 8.0, H-1′), 3.27—3.36 (m, H-2′, 4′, 5′), 3.41 (t, 9.0, H-3′), 3.66 (dd, 12.0, 5.5, H-6′), 3.88 (dd, 12.0, 2.0, H-6′), 1.82 (m, H-1″), 1.78 (m, H-2″), 1.71 (m, H-3″), 1.52 (ddd, 13.0, 7.0, 4.5, H-4″), 1.99 (ddd, 13.0, 9.0, 5.5, H-4″), 4.05 (br q, 5.0, H-5″), 1.00 (d, 7.0, H_3-6″), 3.95 (dd, 11.0, 5.5, H-7″), 4.16 (dd, 11.0, 4.0, H-7″), 1.90 (m, H-8″), 1.01 (d, 7.0, H_3-9″), 3.82 (dd, 11.0, 7.0, H-10″), 4.17 (dd, 11.0, 4.0, H-10″); part b: 5.94 (br s, H-1), 7.53 (s, H-3), 4.00 (dd, 9.0, 5.0, H-5), 2.50 (dd, 14.0, 9.0, H-6), 2.73 (dd, 14.0, 5.0, H-6), 6.12 (qd, 7.0, 1.0, H-8), 1.75 (br d, 7.0, H_3-10), 3.72 (s, MeO), 4.81 (d, 8.0, H-1′), 3.27—3.36 (m, H-2′, 4′, 5′), 3.41 (t, 9.0, H-3′), 3.66 (dd, 12.0, 5.5, H-6′), 3.89 (dd, 12.0, 2.0, H-6′); ^{13}C-NMR (125 MHz, CD_3OD): part a: 95.0 (C-1), 155.2 (C-3), 109.4 (C-4), 31.9 (C-5), 42.3 (C-6), 173.4 (C-7), 124.8 (C-8), 130.8 (C-9), 13.7 (C-10), 168.6 (C-11), 52.0 (OMe), 100.7 (C-1′), 74.8 (C-2′), 78.0 (C-3′), 71.5 (C-4′), 78.5 (C-5′), 62.8 (C-6′), 43.2 (C-1″), 47.7 (C-2″), 43.1 (C-3″), 37.5 (C-4″), 75.4 (C-5″), 14.0 (C-6″), 67.8 (C-7″), 38.1 (C-8″), 16.8 (C-9″), 69.4 (C-10″); part b: 95.2 (C-1), 155.2 (C-3), 109.4 (C-4), 32.1 (C-5), 42.3 (C-6), 173.4 (C-7), 124.8 (C-8), 130.8 (C-9), 13.8 (C-10), 168.6 (C-11), 52.0 (OMe), 100.8 (C-1′), 74.8 (C-2′), 78.0 (C-3′), 71.6 (C-4′), 78.5 (C-5′), 62.9 (C-6′). *Jasminum nudiflorum* (Oleaceae).[26)]

111. Nudifloside A



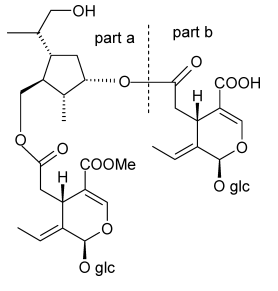
$C_{44}H_{64}O_{23}$: 960.3837; colorless amorphous powder; $[\alpha]_D^{26}$ −203.0° (c=1.27, MeOH); UV (MeOH): 237 (4.38); IR (KBr): 3425, 1731, 1713, 1634, 1078; ^{1}H-NMR (500 MHz, CD_3OD): part a: 5.94 (br s, H-1), 7.52 (s, H-3), 4.00 (dd, 9.0, 4.5, H-5), 2.48 (dd, 14.0, 9.0, H-6), 2.68 (dd, 14.0, 4.5, H-6), 6.14 (qd, 7.5, 1.0, H-8), 1.75 (dd, 7.0, 1.5, H_3-10), 3.71 (s, MeO), 4.81 (d, 8.0, H-1′), 3.28—3.36 (m, H-2′, 4′, 5′), 3.41 (t, 9.0, H-3′), 3.66 (dd, 12.0, 5.5, H-6′), 3.89 (dd, 12.0, 2.0, H-6′), 2.02 (m, H-1″), 1.64 (m, H-2″), 1.88 (m, H-3″), 4.98 (m, H-4″), 1.49 (ddd, 14.0, 11.5, 5.5, H-5″), 1.87 (br dd, 14.0, 6.5, H-5″), 1.08 (d, 7.0, H_3-6″), 3.98 (dd, 11.0, 7.0, H-7″), 4.15 (dd, 11.0, 5.5, H-7″), 1.82 (m, H-8″), 0.95 (d, 6.5, H_3-9″), 3.42 (dd, 11.0, 7.5, H-10″), 3.57 (dd, 11.0, 5.5, H-10″); part b: 5.97 (br s, H-1), 7.54 (s, H-3), 4.01 (dd, 9.0, 4.5, H-5), 2.49 (dd, 14.0, 9.0, H-6), 2.74 (dd, 14.0, 4.5, H-6), 6.20 (qd, 7.5, 1.0, H-8), 1.76 (dd, 7.5, 1.5, H_3-10), 3.72 (s, OMe), 4.81 (d, 8.0, H-1′), 3.28—3.36 (m, H-2′, 4′, 5′), 3.41 (t, 9.0, H-3′), 3.66 (dd, 12.0, 5.5, H-6′), 3.90 (dd, 12.0, 2.0, H-6′); ^{13}C-NMR (125 MHz, CD_3OD): part a: 95.0 (C-1), 155.2 (C-3), 109.3 (C-4), 31.9 (C-5), 41.3 (C-6), 173.1 (C-7), 124.7 (C-8), 130.6 (C-9), 13.8 (C-10), 168.6 (C-11), 52.0 (OMe), 100.7 (C-1′), 74.7 (C-2′), 77.9 (C-3′), 71.5 (C-4′), 78.5 (C-5′), 62.8 (C-6′), 37.8 (C-1″), 48.2 (C-2″), 52.7 (C-3″), 81.1 (C-4″), 41.7 (C-5″), 20.0 (C-6″), 69.2 (C-7″), 39.1 (C-8″), 15.0 (C-9″), 66.5 (C-10″); part b: 95.1 (C-1), 155.2 (C-3), 109.4 (C-4), 32.0 (C-5), 41.4 (C-6), 173.2 (C-7), 124.9 (C-8), 130.7 (C-9), 13.9 (C-10), 168.6 (C-11), 52.0 (OMe), 100.7 (C-1′), 74.8 (C-2′), 77.9 (C-3′), 71.6 (C-4′), 78.5 (C-5′), 63.0 (C-6′). *Jasminum nudiflorum* (Oleaceae).[26)]

112. Nudifloside B



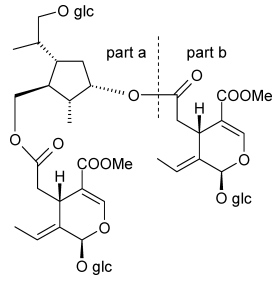
$C_{43}H_{60}O_{22}$: 928.3575; colorless amorphous powder; $[\alpha]_D^{23}$ −227.0° (c=1.07, MeOH); UV (MeOH): 237 (4.36); IR (KBr): 3410, 1728, 1709, 1634, 1076; ^{1}H-NMR (500 MHz, CD_3OD): part a: 5.89 (br s, H-1), 7.54 (s, H-3), 4.00 (dd, 12.0, 4.0, H-5), 2.34 (dd, 12.0, 4.0, H-6), 2.46 (t, 12.0, H-6), 6.08 (qd, 7.0, 0.5, H-8), 1.80 (dd, 7.0, 1.0, H_3-10), 4.90 (d, 8.0, H-1′), 3.26—3.44 (m, H-2′—H-5′), 3.66 (dd, 12.0, 6.0, H-6′), 3.88 (m, H-6′), 2.01 (m, H-1″), 1.57 (m, H-2″), 2.50 (m, H-3″), 4.89 (m, H-4″), 1.57 (m, H-5″), 1.82 (m, H-5″), 1.00 (d, 6.5, H_3-6″), 3.88 (m, H-7″), 4.15 (dd, 12.0, 2.5, H-7″), 2.45 (m, H-8″), 0.92 (d, 6.5, H_3-9″), 3.87 (m, H-10″), 4.44 (br t, 12.0, H-10″); part b: 5.92 (br s, H-1), 7.56 (s, H-3), 4.05 (dd, 8.0, 5.0, H-5), 2.50 (dd, 15.0, 8.0, H-6), 2.69 (dd, 15.0, 5.0, H-6), 6.13 (qd, 7.0, 0.5, H-8), 1.81 (dd, 7.0, 1.0, H_3-10), 3.73 (s, OMe), 4.74 (d, 8.0, H-1′), 3.26—3.44 (m, H-2′—H-5′), 3.64 (dd, 12.0, 6.0, H-6′), 3.88 (m, H-6′); ^{13}C-NMR (125 MHz, CD_3OD): part a: 95.0 (C-1), 153.6 (C-3), 110.0 (C-4), 32.3 (C-5), 43.6 (C-6), 173.5 (C-7), 124.1 (C-8), 131.2 (C-9), 13.1 (C-10), 168.8 (C-11), 100.9 (C-1′), 74.8 (C-2′), 77.7 (C-3′)[a], 71.6 (C-4′), 78.2 (C-5′), 62.8 (C-6′)[b], 36.1 (C-1″), 45.2 (C-2″), 47.5 (C-3″), 81.0 (C-4″), 41.0 (C-5″), 18.5 (C-6″), 65.3 (C-7″), 34.4 (C-8″), 11.7 (C-9″), 68.0 (C-10″); part b: 95.6 (C-1), 155.1 (C-3), 109.7 (C-4), 31.8 (C-5), 42.1 (C-6), 173.1 (C-7), 124.7 (C-8), 131.3 (C-9), 14.2 (C-10), 168.7 (C-11), 52.0 (OMe), 101.2 (C-1′), 74.8 (C-2′), 78.0 (C-3′)[a], 71.6 (C-4′), 78.5 (C-5′), 62.9 (C-6′)[b]. *Jasminum nudiflorum* (Oleaceae).[26)]

113. Jasnudifloside H



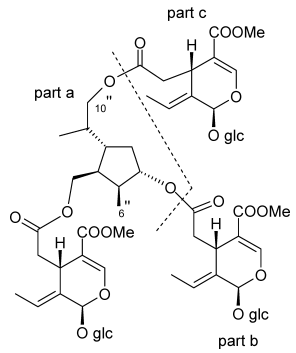
$C_{43}H_{62}O_{23}$: 946.3681; colorless amorphous powder; $[\alpha]_D^{24}$ −183.0° (c=1.02, MeOH); UV (MeOH): 235 (4.35); IR (KBr): 3400, 1731, 1707, 1636, 1078, 818; ^{1}H-NMR (500 MHz, CD_3OD): part a: 5.95 (br s, H-1), 7.53 (s, H-3), 4.00 (dd, 9.0, 4.5, H-5), 2.50 (dd, 14.0, 9.0, H-6), 2.73 (dd, 14.0, 4.5, H-6), 6.10 (br q, 7.0, H-8), 1.76 (dd, 7.0, 1.5, H_3-10), 3.72 (s, MeO), 4.81 (d, 7.5, H-1′), 3.27—3.29 (m, H-2′, 4′, 5′), 3.40 (t, 10.0, H-3′), 3.65 (dd, 12.0, 6.0, H-6′), 3.89 (dd, 12.0, 2.0, H-6′), 1.95 (m, H-1″), 1.83 (m, H-2″), 1.78 (m, H-3″), 1.61—1.67 (m, H-4″), 2.07 (ddd, 14.5, 9.5, 5.5, H-4″), 5.02 (br q, 5.0, H-5″), 0.94 (d, 7.0, H_3-6″), 3.95 (dd, 11.5, 5.0, H_2-7″), 1.61—167 (m, H-8″), 0.99 (d, 7.0, H_3-9″), 3.59 (dd, 11.0, 4.0, H-10″), 4.20 (dd, 11.0, 4.0, H-10″); part b: 5.95 (br s, H-1), 7.50 (s, H-3), 4.00 (dd, 9.0, 4.5, H-5), 2.54 (dd, 14.0, 9.0, H-6), 2.73 (dd, 14.0, 4.5, H-6), 6.13 (br q, 7.0, H-8), 1.74 (dd, 7.0, 1.0, H_3-10), 4.81 (d, 8.0, H-1′), 3.27—3.29 (m, H-2′, 4′, 5′), 3.41 (t, 9.0, H-3′), 3.67 (dd, 12.0, 6.0, H-6′), 3.91 (dd, 12.0, 2.0, H-6′); ^{13}C-NMR (125 MHz, CD_3OD): part a: 94.7 (C-1), 154.7 (C-3), 109.4 (C-4), 32.1 (C-5), 41.2 (C-6), 173.1 (C-7), 124.4 (C-8), 130.7 (C-9), 13.4 (C-10), 168.6 (C-11), 52.0 (OMe), 100.5 (C-1′), 74.8 (C-2′), 78.0 (C-3′), 71.6 (C-4′), 78.5 (C-5′), 62.9 (C-6′), 41.7 (C-1″), 48.2 (C-2″), 42.6 (C-3″), 35.4 (C-4″), 80.0 (C-5″), 14.2 (C-6″), 67.2 (C-7″), 41.1 (C-8″), 16.3 (C-9″), 66.5 (C-10″); part b: 95.0 (C-1), 155.2 (C-3), 109.4 (C-4), 32.2 (C-5), 41.6 (C-6), 173.4 (C-7), 124.0 (C-8), 131.2 (C-9), 13.9 (C-10), 168.6 (C-11), 100.8 (C-1′), 74.9 (C-2′), 78.0 (C-3′), 71.7 (C-4′), 78.7 (C-5′), 63.0 (C-6′). *Jasminum nudiflorum* (Oleaceae).[27)]

114. Jasnudifloside L



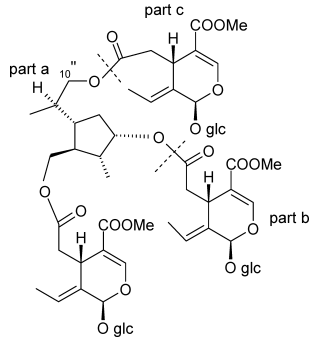
$C_{50}H_{74}O_{28}$: 1122.4365; colorless amorphous powder; $[\alpha]_D^{24}$ −173.0° (c=0.73, MeOH); UV (MeOH): 237 (4.39); IR (KBr): 3419, 1734, 1717, 1636, 1076, 818; ^{1}H-NMR (500 MHz, CD_3OD): part a: 5.95 (br s, H-1), 7.53 (s, H-3), 4.00 (m, H-5), 2.52 (dd, 14.0, 9.0, H-6), 2.71 (dd, 14.0, 4.5, H-6), 6.11 (br q, 7.0, H-8), 1.75 (dd, 7.0, 1.0, H_3-10), 3.72 (s, MeO-11), 4.81 (d, 7.5, H-1′), 3.21—3.28 (m, H-2′, 4′, 5′), 3.41 (t, 9.0, H-3′), 3.65 (dd, 12.0, 6.0, H-6′), 3.90 (dd, 12.0, 2.0, H-6′), 1.94 (m, H-1″), 1.91 (m, H-2″, 3″), 1.65 (m, H-4″), 2.00 (m, H-4″), 5.03 (br q, 4.5, H-5″), 0.93 (d, 6.5, H_3-6″), 4.00 (m, H-7″), 4.21 (dd, 11.0, 2.0, H-7″), 1.91 (m, H-8″), 1.00 (d, 6.5, H_3-9″), 3.51 (m, H-10″), 3.70 (m, H-10″), 4.23 (d, 7.5, H-1‴), 3.17 (dd, 9.0, 7.5, H-2‴), 3.21—3.28 (m, H-3‴, 4‴, 5‴), 3.67 (dd, 12.0, 6.0, H-6‴), 3.84 (dd, 12.0, 2.0, H-6‴); part b: 5.99 (br s, H-1), 7.54 (s, H-3), 4.00 (m, H-5), 2.54 (dd, 14.0, 9.0, H-6), 2.73 (dd, 14.0, 5.0, H-6), 6.12 (br q, 7.0, H-8), 1.76 (dd, 7.0, 1.0, H_3-10), 4.81 (d, 7.5, H-1′), 3.21—3.28 (m, H-2′, 4′, 5′), 3.41 (t, 9.0, H-3′), 3.66 (dd, 12.0, 6.0, H-6′), 3.91 (dd, 12.0, 2.0, H-6′); ^{13}C-NMR (125 MHz, CD_3OD): part a: 94.8 (C-1), 155.2 (C-3), 109.4 (C-4), 32.0 (C-5), 41.3 (C-6), 173.1 (C-7), 124.0 (C-8), 130.8 (C-9), 13.7 (C-10), 168.6 (C-11), 52.0 (OMe), 100.5 (C-1′), 74.8 (C-2′), 77.9 (C-3′), 71.7 (C-4′), 78.5 (C-5′), 63.0 (C-6′), 41.8 (C-1″), 47.8 (C-2″), 43.2 (C-3″), 35.0 (C-4″), 80.2 (C-5″), 14.0 (C-6″), 67.0 (C-7″), 38.1 (C-8″), 16.9 (C-9″), 74.2 (C-10″), 104.6 (C-1‴), 75.1 (C-2‴), 78.0 (C-3‴), 71.7 (C-4‴), 78.2 (C-5‴), 62.8 (C-6‴); part b: 95.3 (C-1), 155.3 (C-3), 109.4 (C-4), 32.2 (C-5), 41.7 (C-6), 173.5 (C-7), 124.8 (C-8), 130.8 (C-9), 13.9 (C-10), 168.6 (C-11), 52.0 (OMe), 100.9 (C-1′), 74.8 (C-2′), 77.9 (C-3′), 71.7 (C-4′), 78.6 (C-5′), 63.0 (C-6′). *Jasminum nudiflorum* (Oleaceae).[27)]

115. Jasuroside B



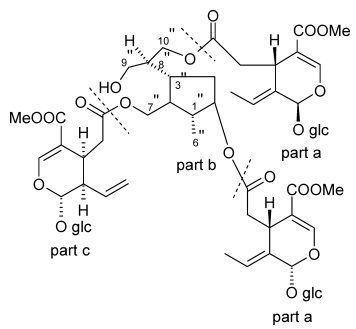
$C_{61}H_{86}O_{33}$: 1346.5050; amorphous powder; $[\alpha]_D^{25}$ −222.0° (c=0.12, MeOH); UV (MeOH): 236 (4.58); IR (neat): 3400, 2932, 1710, 1632, 1442, 1382, 1340, 1306, 1262, 1190, 1162, 1074, 988, 908, 854, 814, 770, 696; ^{1}H-NMR (300 MHz, CD_3OD): part a: 5.93 (s, H-1), 7.53 (s, H-3), 4.00 (dd, 8.9, 3.9, H-5), 2.52 (m, H-6), 2.72 (m, H-6), 6.10 (q, 5.4, H-8), 1.74 (d, 5.4, H_3-10), 3.72 (s, MeO-11), 4.79 (H-1′), 3.30—4.00 (H-2′—H-6′), 1.90 (m, H-1″), 1.86 (m, H-2″), 1.84 (m, H-3″), 1.64 (m, H-4″), 2.10 (m, H-4″), 5.10 (m, H-5″), 0.94 (d, 6.6, H_3-6″), 4.00 (dd, 8.9, 3.9, H-7″), 4.20 (m, H-7″), 1.65 (m, H-8″), 1.00 (d, 6.3, H_3-9″), 3.41 (m, H-10″), 3.63 (m, H-10″); part b: 5.95 (s, H-1), 7.53 (s, H-3), 4.00 (dd, 8.9, 3.9, H-5), 2.52 (m, H-6), 2.72 (m, H-6), 6.10 (q, 5.4, H-8), 1.74 (d, 5.4, H_3-10), 4.79 (H-1′), 3.30—4.00 (H-2′—H-6′); part c: 5.96 (s, H-1), 7.52 (s, H-3), 4.00 (dd, 8.9, 3.9, H-5), 2.52 (m, H-6), 2.72 (m, H-6), 6.12 (q, 5.4, H-8), 1.75 (d, 5.4, H_3-10), 3.71 (s, MeO-11), sugar protons appeared in the same values as that of part a; ^{13}C-NMR (75.4 MHz, CD_3OD): part a: 95.3 (C-1), 155.3 (C-3), 109.5 (C-4), 32.0 (C-5), 41.7 (C-6), 173.4 (C-7), 124.9 (C-8), 130.9 (C-9), 13.9 (C-10), 168.7 (C-11), 52.1 (OMe), 101.0 (C-1′), 74.9 (C-2′), 78.6 (C-3′), 71.7 (C-4′), 78.1 (C-5′), 63.0 (C-6′), 42.0 (C-1″), 48.2 (C-2″), 43.4 (C-3″), 35.5 (C-4″), 80.2 (C-5″), 14.0 (C-6″), 66.9 (C-7″), 37.6 (C-8″), 17.0 (C-9″), 69.3 (C-10″); part b: 94.9 (C-1), 155.3 (C-3), 109.5 (C-4), 32.0 (C-5), 41.4 (C-6), 173.1 (C-7), 124.9 (C-8), 130.9 (C-9), 13.9 (C-10), 168.7 (C-11), 52.1 (OMe), 100.7 (C-1′), 74.9 (C-2′), 78.1 (C-3′), 71.6 (C-4′), 78.1 (C-5′), 63.0 (C-6′); part c: 95.4 (C-1), 155.3 (C-3), 109.5 (C-4), 32.3 (C-5), 41.4 (C-6), 173.5 (C-7), 124.9 (C-8), 131.0 (C-9), 14.0 (C-10), 168.7 (C-11), 52.1 (OMe), 101.0 (C-1′), 74.9 (C-2′), 78.8 (C-3′), 71.8 (C-4′), 78.1 (C-5′), 63.1 (C-6′). *Jasminum urophyllum* (Oleaceae).[54)]

116. Jasnudifloside B (Jasuroside B?)



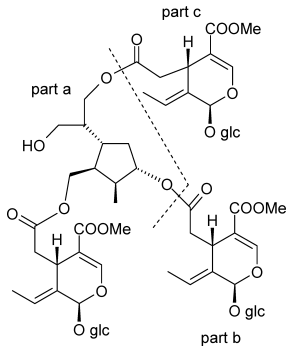
$C_{61}H_{86}O_{33}$: 1346.5050; colorless amorphous powder; $[\alpha]_D^{24}$ −206.0° (c=0.68, MeOH); UV (MeOH): 237 (4.56); IR (KBr): 3414, 1732, 1709, 1636, 1078; ^{1}H-NMR (500 MHz, CD_3OD): part a: 5.93 (br s, H-1), 7.52 (s, H-3), 3.97—4.03 (m, H-5), 2.49 (dd, 14.0, 9.0, H-6), 2.70 (dd, 14.0, 4.5, H-6), 6.10 (qd, 7.0, 1.0, H-8), 1.74 (dd, 7.0, 1.0, H_3-10), 3.71 (s, MeO), 4.80 (d, 7.5, H-1′), 3.28—3.41 (m, H-2′—H-5′), 3.65 (dd, 12.0, 6.0, H-6′), 3.91 (dd, 12.0, 2.0, H-6′), 1.94 (m, H-1″), 1.85 (m, H-2″, 3″), 1.64 (ddd, 14.0, 4.0, 3.0, H-4″), 2.09 (ddd, 14.0, 9.0, 5.0, H-4″), 5.05 (td, 4.5, 2.0, H-5″), 0.94 (d, 7.0, H_3-6″), 3.99 (m, H-7″), 4.19 (dd, 11.0, 3.5, H-7″), 1.90 (m, H-8″), 1.00 (d, 6.5, H_3-9″), 3.75 (dd, 11.0, 7.0, H-10″), 4.16 (dd, 11.0, 4.5, H-10″); part b: 5.95 (br s, H-1), 7.53 (s, H-3), 3.97-4.03 (m, H-5), 2.51 (dd, 14.0, 9.0, H-6), 2.72 (dd, 14.0, 4.5, H-6), 6.12 (qd, 7.0, 1.0, H-8), 1.75 (dd, 7.0, 1.0, H_3-10), 3.72 (s, OMe), 4.80 (d, 8.0, H-1′), 3.28—3.41 (m, H-2′—H-5′), 3.66 (dd, 12.0, 6.0, H-6′), 3.87 (dd, 12.0, 2.0, H-6′); part c: 5.96 (br s, H-1), 7.53 (s, H-3), 3.97—4.03 (m, H-5), 2.52 (dd, 14.0, 9.0, H-6), 2.73 (dd, 14.0, 4.5, H-6), 6.13 (qd, 7.0, 1.0, H-8), 1.76 (dd, 7.0, 1.0, H_3-10), 3.72 (s, OMe), 4.81 (d, 7.5, H-1′), 3.28—3.41 (m, H-2′-H-5′), 3.66 (dd, 12.0, 6.0, H-6′), 3.87 (dd, 12.0, 2.0, H-6′); ^{13}C-NMR (125 MHz, CD_3OD): part a: 94.8 (C-1), 155.2 (C-3), 109.4 (C-4), 31.9 (C-5), 41.3 (C-6), 173.0 (C-7), 124.8 (C-8), 130.8 (C-9), 13.8 (C-10), 168.3 (C-11), 52.0 (OMe), 100.6 (C-1′), 74.8 (C-2′), 78.0 (C-3′), 71.5 (C-4′), 78.5 (C-5′), 62.9 (C-6′), 41.9 (C-1″), 48.1 (C-2″), 43.3 (C-3″), 35.0 (C-4″), 80.2 (C-5″), 13.9 (C-6″), 66.8 (C-7″), 37.5 (C-8″), 16.9 (C-9″), 69.1 (C-10″); part b: 95.2 (C-1), 155.2 (C-3), 109.4 (C-4), 31.9 (C-5), 41.3 (C-6), 173.3 (C-7), 124.8 (C-8), 130.8 (C-9), 13.8 (C-10), 168.6 (C-11), 52.0 (OMe), 100.9 (C-1′), 74.8 (C-2′), 78.0 (C-3′), 71.6 (C-4′), 78.5 (C-5′), 62.9 (C-6′); part c: 95.3 (C-1), 155.2 (C-3), 109.4 (C-4), 31.2 (C-5), 41.7 (C-6), 173.4 (C-7), 124.8 (C-8), 130.9 (C-9), 13.9 (C-10), 168.7 (C-11), 52.0 (OMe), 100.9 (C-1′), 74.9 (C-2′), 78.0 (C-3′), 71.7 (C-4′), 78.6 (C-5′), 63.0 (C-6′). *Jasminum nudiflorum* (Oleaceae).[55)]

117. Molihuaside B



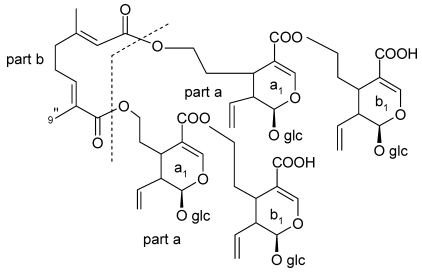
$C_{61}H_{86}O_{34}$: 1362.4999; amorphous powder, mp 128—131 °C; $[\alpha]_D^{25}$ −176.2° (c=0.32, MeOH); UV (EtOH): 202 (4.09), 233 (4.35); IR (KBr): 3400, 1705, 1625, 1435, 1305; ^{1}H-NMR (400 MHz, CD_3OD): part a: 5.93, 5.94 (s, H-1), 7.53, 7.54 (s, H-3), 6.11 (br q, 7.0, H-8), 1.75 (d, 7.0, H_3-10), 3.72 (s, OMe), 4.81, 4.82 (d, 8.0, H-1′); part b: 1.06 (d, 7.0, H_3-6″); part c: 5.48 (d, 4.0, H-1), 7.48 (d, 1.6, H-3), 5.64 (m, H-8), 5.25 (dd, 18.0, 10.0, H_2-10), 3.68 (s, OMe), 4.66 (d, 8.0, H-1′); ^{13}C-NMR (100 MHz, CD_3OD): part a: 95.2 (C-1), 155.1 (C-3), 109.5 (C-4), 32.0 (C-5), 41.3 (C-6), 173.0 (C-7), 124.9 (C-8), 130.8 (C-9), 13.8 (C-10), 168.8 (C-11), 52.0 (OMe); part b: 44.2 (C-1″), 49.7 (C-2″), 40.0 (C-3″), 34.7 (C-4″), 83.2 (C-5″), 18.9 (C-6″), 67.7 (C-7″), 44.1 (C-8″), 62.6 (C-9″), 64.4 (C-10″); part c: 97.6 (C-1), 153.7 (C-3), 110.0 (C-4), 29.1 (C-5), 35.6 (C-6), 174.3 (C-7), 135.6 (C-8), 45.4 (C-9), 120.7 (C-10), 168.8 (C-11), 51.8 (OMe). *Jasminum sambac* (Oleaceae).[53)]

118. Jasuroside D



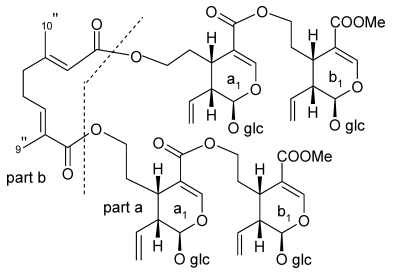
$C_{61}H_{86}O_{34}$: 1362.4999; isomer of sambacoside[52]; amorphous powder; $[\alpha]_D^{25}$ −191.0° (c=0.13, MeOH); UV (MeOH): 236 (4.56); IR (neat): 3396, 2952, 2888, 1706, 1632, 1544, 1444, 1380, 1344, 1306, 1266, 1208, 1194, 1160, 1076, 1044, 984, 924, 902, 858, 814, 768, 720, 698; ^{1}H-NMR (300 MHz, CD_3OD): part a: 5.93 (s, H-1), 7.53 (s, H-3), 4.01 (m, H-5), 2.56 (m, H-6), 2.75 (m, H-6), 6.10 (q, 5.4, H-8), 1.75 (d, 5.4, H_3-10), 3.72 (s, MeO-11), 4.79 (H-1′), 3.30—4.00 (H-2′—H-6′), 1.90 (m, H-1″, 2″), 1.85 (m, H-3″), 1.65 (m, H-4″), 2.10 (m, H-4″), 5.05 (m, H-5″), 0.95 (d, 5.4, H_3-6″), 3.95 (m, H-7″), 4.21 (m, H-7″), 1.65 (m, H-8″), 3.67 (m, H-9″), 3.90 (m, H-9″), 3.40 (m, H-10″), 3.59 (m, H-10″), sugar protons appeared at the same values as that of part a; part c: 5.97 (s, H-1), 7.55 (s, H-3), 4.01 (m, H-5), 2.56 (m, H-6), 2.75 (m, H-6), 6.14 (q, 5.4, H-8), 1.76 (d, 5.4, H_3-10), 3.71 (s, MeO-11), 4.82 (H-1′), 3.30—4.00 (H-2′—H-6′); ^{13}C-NMR (75.4 MHz, CD_3OD): part a: 95.2 (C-1), 155.2 (C-3), 109.4 (C-4), 31.9 (C-5), 41.5 (C-6), 173.3 (C-7), 124.9 (C-8), 130.8 (C-9), 13.9 (C-10), 168.6 (C-11), 52.0 (OMe), 100.8 (C-1′), 74.8 (C-2′), 78.5 (C-3′), 71.5 (C-4′), 78.4 (C-5′), 62.9 (C-6′), 41.8 (C-1″), 49.6 (C-2″), 39.3 (C-3″), 34.5 (C-4″), 80.0 (C-5″), 13.9 (C-6″), 66.5 (C-7″), 45.0 (C-8″), 62.7 (C-9″), 65.7 (C-10″); part b: 94.8 (C-1), 155.2 (C-3), 109.4 (C-4), 31.8 (C-5), 41.2 (C-6), 172.9 (C-7), 124.8 (C-8), 130.7 (C-9), 13.8 (C-10), 168.6 (C-11), 52.0 (OMe), 100.5 (C-1′), 74.8 (C-2′), 78.4 (C-3′), 71.4 (C-4′), 78.5 (C-5′), 62.9 (C-6′); part c: 95.2 (C-1), 155.2 (C-3), 109.4 (C-4), 32.1 (C-5), 41.2 (C-6), 173.2 (C-7), 124.9 (C-8), 130.6 (C-9), 13.8 (C-10), 168.6 (C-11), 52.0 (OMe), 100.9 (C-1′), 74.8 (C-2′), 78.5 (C-3′), 71.6 (C-4′), 78.5 (C-5′), 62.9 (C-6′). *Jasminum urophyllum* (Oleaceae).[54]

119. Rhodanthoside B



$C_{74}H_{102}O_{40}$: 1630.5946; amorphous powder, mp 153—156 °C; $[\alpha]_D$ −111.5° (c=0.01, MeOH); UV (MeOH): 274.5 (2.40); IR (KBr): 3200, 1700, 1600; ^{1}H-NMR (200 MHz, CD_3OD): part a (a_1): 5.20 (d, 2.0, H-1), 7.44 (br s, H-3), 2.83 (ddd, 6.0, 5.2, 3.0, H-5), 1.80 (m, H-6), 2.10 (m, H-6), 4.18 (m, H_2-7), 5.62 (ddd, 17.2, 8.0, 8.0, H-8), 2.70 (dd, 8.2, 3.2, H-9), 5.32 (d, 8.0, H-10), 5.42 (d, 8.0, H-10), 4.68 (d, 8.2, H-1′), 3.20 (dd, 8.0, 7.4, H-2′), 3.36 (unresolved, H-3′), 3.64 (unresolved, H-4′), 3.62 (unresolved, H-5′), 3.80 (dd, 10.0, 1.2, H-6′), 3.95 (dd, 10.0, 2.2, H-6′); part a (b_1): 5.33 (d, 1.8, H-1), 4.72 (d, 8.2, H-1′), other protons have the same resonance to the corresponding ones of part a (a_1); part b: 6.70 (t, 10.0, H-3″), 2.22 (m, H_2-4″), 2.18 (m, H_2-5″), 5.48 (br s, H-7″), 1.80 (s, H_3-9″), 2.20 (s, H_3-10″); ^{13}C-NMR (50 MHz, CD_3OD): part a (a): 97.5 (C-1), 153.5 (C-3), 111.6 (C-4), 31.0 (C-5), 29.8 (C-6), 63.5, 63.7 (C-7), 135.7 (C-8), 45.2 (C-9), 119.7 (C-10), 168.6 (C-11), 100.0 (C-1′), 74.5 (C-2′), 77.7 (C-3′), 71.4 (C-4′), 78.2 (C-5′), 62.7 (C-6′); part a (b): 97.7 (C-1), 153.5 (C-3), 111.6 (C-4), 31.0 (C-5), 29.8 (C-6), 64.4 (C-7), 135.7 (C-8), 45.2 (C-9), 119.7 (C-10), 170.6 (C-11); sugar carbons have same resonance to the corresponding ones of part a (a); part b: 169.4 (C-1″), 129.5 (C-2″), 142.3 (C-3″), 27.5 (C-4″), 40.3 (C-5″), 160.3 (C-6″), 117.0 (C-7″), 168.1 (C-8″), 12.7 (C-9″), 19.1 (C-10″). *Gentiana rhodantha* (Gentianaceae).[56]

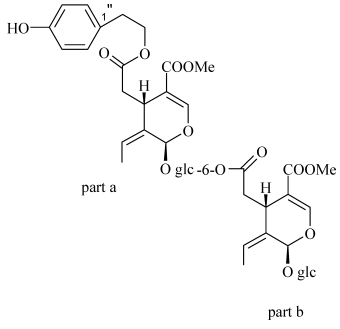
120. Rhodanthoside C



$C_{76}H_{106}O_{40}$: 1658.6259; amorphous powder, mp 137—141 °C; $[\alpha]_D$ −112.5° (c=0.01, MeOH); UV (MeOH): 274.5 (2.40); IR (KBr): 3500, 2910, 1780, 1620, 1440, 1410, 1280, 920, 780; ^{1}H-NMR (200 MHz, CD_3OD): part a (a_1): 5.22 (d, 1.2, H-1), 7.43 (br s, H-3), 2.95 (dd, 6.0, 4.2, H-5), 1.82 (m, H-6), 2.22 (m, H-6), 4.14 (m, H_2-7), 5.80 (ddd, 18.0, 9.2, 9.2, H-8), 2.62 (dd, 7.6, 4.2, H-9), 5.23 (d, 10.2, H-10), 5.58 (d, 10.0, H-10), 4.70 (d, 8.4, H-1′), 3.22 (dd, 8.2, 7.4, H-2′), 3.38 (unresolved, H-3′), 3.65 (unresolved, H-4′), 3.72 (unresolved, H-5′), 3.82 (dd, 10.0, 1.2, H-6′), 3.70 (dd, 12.2, 2.4, H-6′); part a (b_1): 5.39 (d, 1.0, H-1), 7.50 (br s, H-3), 3.75 (s, 2×OMe), 4.75 (d, 8.4, H-1′), other protons have same resonance to the corresponding ones of part a (a_1); part b: 6.68 (t, 10.0, H-3″), 2.21 (m, H_2-4″), 2.14 (m, H_2-5″), 5.46 (br s, H-7″), 1.78 (s, H_3-9″), 2.22 (s, H_3-10″); ^{13}C-NMR (50 MHz, CD_3OD): part a (a_1): 97.7 (C-1), 153.6 (C-3), 113.3 (C-4), 31.1 (C-5), 29.9 (C-6), 63.5, 63.6 (C-7), 135.5 (C-8), 45.1 (C-9), 119.8 (C-10), 168.5, 168.6 (C-11), 100.1 (C-1′), 74.5 (C-2′), 77.9 (C-3′), 71.5 (C-4′), 78.2 (C-5′), 62.7 (C-6′); part a (b): 97.9 (C-1), 153.6 (C-3), 111.5 (C-4), 31.3 (C-5), 29.9 (C-6), 63.6, 64.4 (C-7), 135.7 (C-8), 45.1 (C-9), 119.8 (C-10), 169.1 (C-11), 51.9 (OMe), sugar carbons have same resonance values to the corresponding ones of part a (a_1); part b: 169.4 (C-1″), 129.6 (C-2″), 142.3 (C-3″), 27.5 (C-4″), 40.3 (C-5″), 160.3 (C-6″), 117.0 (C-7″), 168.1 (C-8″), 12.7 (C-9″), 19.1 (C-10″). *Gentiana rhodantha* (Gentianaceae).[56]

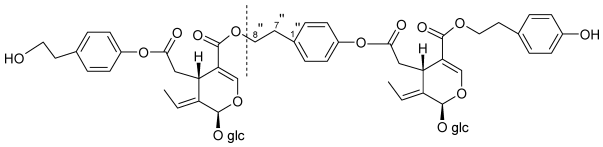
B. Aromatic conjugated

121. Jaspolyanoside



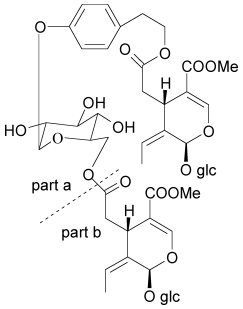
$C_{42}H_{54}O_{22}$: 910.3106; white amorphous powder; $[\alpha]_D^{28}$ −161.0° (c=0.82, MeOH); UV (MeOH): 229 (4.30), 237sh (4.27), 276.5 (3.27), 285sh (3.17); IR (KBr): 3409, 1732, 1707, 1630, 1518, 1078; ^{1}H-NMR (500 MHz, CD_3OD): part a: 5.85 (br s, H-1), 7.52 (s, H-3), 3.95 (dd, 9.0, 4.0, H-5), 2.40 (dd, 14.0, 9.0, H-6), 2.70 (dd, 14.0, 4.0, H-6), 6.06 (qd, 7.0, 1.0, H-8), 1.62 (dd, 7.0, 1.5, H_3-10), 3.67 (s, MeO-11), 4.82 (d, 8.0, H-1′), 3.36 (m, H-2′), 3.41 (t, H-3′), 3.39 (t, 9.0, H-4′), 3.54 (ddd, 9.0, 5.0, 2.0, H-5′), 4.20 (dd, 12.0, 5.0, H-6′), 4.33 (dd, 12.0, 2.0, H-6′), 7.01 (d, 8.5, H-2″, 6″), 6.70 (d, 8.5, H-3″, 5″), 2.77 (t, 7.0, H_2-7″), 4.08 (dt, 10.5, 7.0, H-8″), 4.19 (dt, 10.5, 7.0, H-8″), part b: 5.88 (br s, H-1), 7.49 (s, H-3), 3.98 (dd, 9.0, 4.0, H-5), 2.37 (dd, 14.0, 9.0, H-6), 2.69 (dd, 14.0, 4.0, H-6), 6.09 (qd, 7.5, 1.0, H-8), 1.71 (dd, 7.5, 1.5, H_3-10), 3.71 (s, MeO-11), 4.80 (d, 8.0, H-1′), 3.32 (m, H-2′), 3.43 (t, 9.0, H-3′), 3.31 (t, 9.0, H-4′), 3.34 (m, H-5′), 3.67 (dd, 12.0, 5.0, H-6′), 3.88 (dd, 12.0, 2.0, H-6′); ^{13}C-NMR (125 MHz, CD_3OD): part a: 95.3 (C-1), 155.2 (C-3), 109.5 (C-4), 31.8 (C-5), 41.3 (C-6), 173.0 (C-7), 125.2 (C-8), 130.3 (C-9), 13.6 (C-10), 168.7 (C-11), 52.0 (OMe), 101.0 (C-1′), 74.7 (C-2′), 77.8 (C-3′), 71.4 (C-4′), 75.5 (C-5′), 64.9 (C-6′), 130.1 (C-1″), 131.1 (C-2″, 6″), 116.4 (C-3″, 5″), 157.1 (C-4″), 35.3 (C-7″), 66.9 (C-8″); part b: 95.2 (C-1), 155.2 (C-3), 109.4 (C-4), 31.9 (C-5), 41.4 (C-6), 173.0 (C-7), 124.9 (C-8), 130.5 (C-9), 13.8 (C-10), 168.6 (C-11), 52.0 (OMe), 100.9 (C-1′), 74.8 (C-2′), 78.0 (C-3′), 71.5 (C-4′), 78.4 (C-5′), 62.7 (C-6′). *Jasminum polyanthum* (Oleaceae).[42]

122. Fraximalacoside



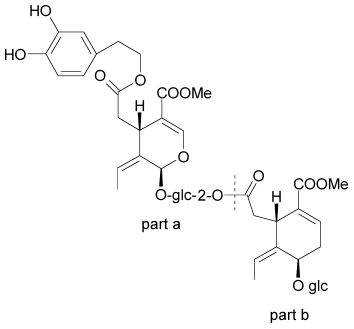
$C_{56}H_{66}O_{24}$: 1122.3943; powder; $[\alpha]_D^{27}$ −123.0° (c=0.41, MeOH); UV (EtOH): 204 (3.99), 220 (4.03), 228 (4.03), 236 (3.99), 244 (3.90), 276 (3.14); IR (KBr): 3400, 2950, 1740, 1700, 1630, 1515, 1080, 920, 830, 770; ^{1}H-NMR (300 MHz, CD_3OD): aglucones (part a and b): 6.00 (br s, H-1), 7.51 (d, 1.8, H-3), 4.07 (dd, 9.1, 4.5, H-5), 2.65 (dd, 14.4, 9.3, H-6), 2.64 (dd, 14.4, 9.3, H-6), 2.83 (dd, 14.4, 4.3, H-6), 2.89 (dd, 14.4, 4.6, H-6), 6.16 (br q, 5.7, H-8), 1.73 (m, H_3-10); sugars: 4.83 (d, H-1′); tyrosols: 7.28 (d, 8.6, H-2″, 6″), 7.00 (d, 8.6, H-3″, 5″), 2.97 (t, 6.5, H_2-7″), 4.36 (t, 6.5, H_2-8″), 7.05 (d, 8.6, H-2‴, 6‴), 6.71 (d, 8.6, H-3‴, 5‴), 2.83 (t, 6.7, H_2-7‴), 4.29 (dt, 6.7, 1.6, H_2-8‴), 6.99 (d, 8.6, H-2⁗, 6⁗), 7.24 (d, 8.6, H-3⁗, 5⁗), 2.81 (t, 7.0, H_2-7⁗), 3.75 (t, 7.0, H_2-8⁗); ^{13}C-NMR (75 MHz, CD_3OD): aglucones and sugars (part a and b): 95.4 (C-1), 155.4 (C-3), 109.4 (C-4), 31.7 (C-5), 41.0 (C-6), 171.2 (C-7), 125.2 (C-8), 130.5 (C-9), 13.9 (C-10), 168.1 (C-11), 101.0 (C-1′), 74.7 (C-2′), 77.9 (C-3′), 71.4 (C-4′), 78.3 (C-5′), 62.6 (C-6′); tyrosols: 137.4 (C-1″), 131.0 (C-2″, 6″), 122.7 (C-3″, 5″), 150.5 (C-4″), 35.3 (C-7″), 66.0 (C-8″), 130.2 (C-1‴), 131.0 (C-2‴, 6‴), 116.3 (C-3‴, 5‴), 157.0 (C-4‴), 35.5 (C-7‴), 66.5 (C-8‴), 138.2 (C-1⁗), 131.0 (C-2⁗, 6⁗), 122.5 (C-3⁗, 5⁗), 150.7 (C-4⁗), 39.5 (C-7⁗), 64.1 (C-8⁗). *Fraxinus malacophylla* (Oleaceae).[125]

123. Polyanoside



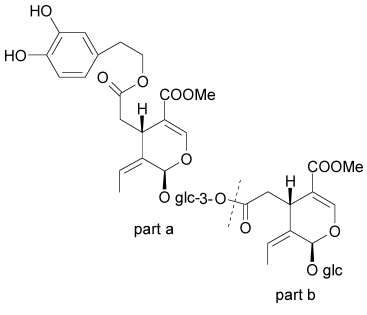
$C_{48}H_{64}O_{27}$: 1072.3634; white amorphous powder; $[\alpha]_D^{24}$ −181.0° (c=1.11, MeOH); UV (MeOH): 227 (4.40), 236 (4.39), 270sh (3.33), 277sh (3.20); IR (KBr): 3393, 1731, 1707, 1632, 1512, 1078; ^{1}H-NMR (500 MHz, CD_3OD): 5.90 (br s, H-1), 7.51 (s, H-3), 4.01 (dd, 9.0, 4.5, H-5), 2.44 (dd, 14.0, 9.0, H-6), 2.78 (dd, 14.0, 4.5, H-6), 6.05 (qd, 7.0, 1.0, H-8), 1.63 (dd, 7.0, 1.5, H_3-10), 3.69 (s, MeO-11), 4.80 (d, 8.0, H-1′, 1‴), 3.32—3.48 (m, H-2′, 3′, 4′, 5′), 3.66 (dd, 12.0, 6.0, H-6′), 3.89 (dd, 12.0, 1.5, H-6′), 7.18 (d, 8.5, H-2″, 6″), 7.02 (d, 8.5, H-3″, 5″), 2.87 (t, H_2-7″), 4.14 (dt, 11.0, 7.0, H-8″), 4.25 (dt, 11.0, 7.0, H-8″), 4.87 (d, 8.0, H-1‴), 3.32—3.48 (m, H-2‴, 3‴, 4‴), 3.65 (m, H-5‴), 4.22 (dd, 11.5, 6.0, H-6‴), 4.36 (dd, 11.5, 2.0, H-6‴); part b: 5.90 (br s, H-1), 7.53 (s, H-3), 3.94 (dd, 9.0, 4.5, H-5), 2.42 (dd, 14.0, 9.0, H-6), 2.68 (dd, 14.0, 4.5, H-6), 6.08 (qd, 7.0, 1.0, H-8), 1.69 (dd, 7.0, 1.5, H_3-10), 3.70 (s, MeO-11), 4.78 (d, 8.0, H-1′), 3.32—3.48 (m, H-2′, 3′, 4′, 5′), 3.67 (dd, 11.0, 5.0, H-6′), 3.87 (br d, 11.0, H-6′); ^{13}C-NMR (125 MHz, CD_3OD): part a: 95.2 (C-1), 155.2 (C-3), 109.5 (C-4), 31.8 (C-5), 41.5 (C-6), 173.2 (C-7), 124.9 (C-8), 130.5 (C-9), 13.7 (C-10), 168.6 (C-11), 52.0 (OMe), 100.9 (C-1′), 74.8 (C-2′), 77.9 (C-3′), 71.5 (C-4′), 78.5 (C-5′), 62.7 (C-6′), 133.4 (C-1″), 131.1 (C-2″, 6″), 118.0 (C-3″, 5″), 157.7 (C-4″), 35.2 (C-7″), 66.7 (C-8″), 102.4 (C-1‴), 74.9 (C-2‴), 77.9 (C-3‴), 71.6 (C-4‴), 75.2 (C-5‴), 65.0 (C-6‴); part b: 95.4 (C-1), 155.2 (C-3), 109.4 (C-4), 31.9 (C-5), 41.3 (C-6), 172.9 (C-7), 125.1 (C-8), 130.5 (C-9), 13.8 (C-10), 168.7 (C-11), 52.1 (Me), 101.1 (C-1′), 74.8 (C-2′), 78.0 (C-3′), 71.5 (C-4′), 78.4 (C-5′), 62.8 (C-6′). *Jasminum polyanthum* (Oleaceae).[42]

124. Isojaspolyoside A



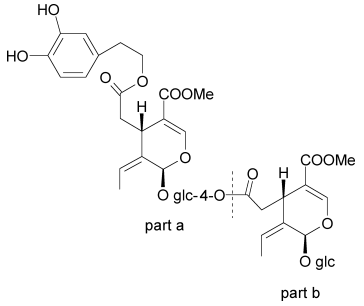
$C_{42}H_{54}O_{23}$: 926.3055; white amorphous powder; $[\alpha]_D^{25}$ −188.0° (c=0.96, MeOH); UV (MeOH): 234 (4.43), 282 (3.52); IR (KBr): 3408, 1726, 1705, 1632, 1529, 1078; ^{1}H-NMR (500 MHz, CD_3OD): part a: 5.82 (br s, H-1), 7.49 (s, H-3), 3.95 (dd, 9.0, 4.5, H-5), 2.41 (dd, 14.0, 9.0, H-6), 2.69 (dd, 14.0, 4.5, H-6), 5.98 (qd, 7.0, 0.5, H-8), 1.66 (dd, 7.0, 1.5, H_3-10), 3.69 (s, MeO-11), 4.94 (d, 8.0, H-1′), 4.78 (dd, 9.5, 8.0, H-2′), 3.60 (t, 9.5, H-3′), 3.39 (m, H-4′), 3.38 (m, H-5′), 3.69 (dd, 12.0 6.0, H-6′), 3.89 (br d, 12.0, H-6′), 6.66 (d, 2.0, H-2″), 6.69 (d, 8.5, H-5″), 6.54 (dd, 8.5, 2.0, H-6″), 2.76 (t, 7.0, H-7″), 4.10 (dt, 11.0, 7.0, H-8″), 4.20 (dt, 11.0, 7.0, H-8″); part b: 5.96 (br s, H-1), 7.51 (s, H-3), 3.99 (dd, 9.0, 4.0, H-5), 2.60 (dd, 15.0, 9.0, H-6), 2.72 (dd, 15.0, 4.0, H-6), 6.09 (dd, 7.0, 0.5, H-8), 1.73 (dd, 7.0, 1.5, H_3-10), 3.70 (s, MeO-11), 4.81 (d, 8.0, H-1′), 3.33 (m, H-2′), 3.41 (t, 9.5, H-3′), 3.28 (m, H-4′), 3.34 (m, H-5′), 3.67 (dd, 12.0, 6.5, H-6′), 3.91 (dd, 12.0, 2.0, H-6′); ^{13}C-NMR (125 MHz, CD_3OD): part a: 95.6 (C-1), 155.1 (C-3), 109.5 (C-4), 31.8 (C-5), 41.2 (C-6), 173.2 (C-7), 125.2 (C-8), 130.3 (C-9), 13.7 (C-10), 168.6 (C-11), 52.0 (OMe), 99.2 (C-1′), 75.1 (C-2′), 75.8 (C-3′), 71.5 (C-4′), 78.6 (C-5′), 62.8 (C-6′), 130.8 (C-1″), 117.1 (C-2″), 146.3 (C-3″), 145.0 (C-4″), 116.5 (C-5″), 121.4 (C-6″), 35.4 (C-7″), 66.9 (C-8″); part b: 95.5 (C-1), 155.3 (C-3), 109.7 (C-4), 31.4 (C-5), 40.8 (C-6), 172.1 (C-7), 125.3 (C-8), 130.2 (C-9), 13.9 (C-10), 168.8 (C-11), 52.0 (OMe), 101.0 (C-1′), 74.8 (C-2′), 78.0 (C-3′), 71.6 (C-4′), 78.5 (C-5′), 62.6 (C-6′). *Jasminum polyanthum* (Oleaceae).[42]

125. Isojaspolyoside B



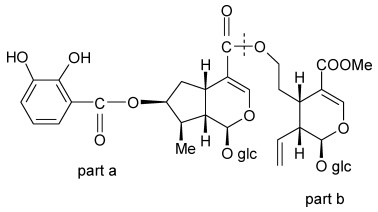
$C_{42}H_{54}O_{23}$: 926.3055; white amorphous powder; $[\alpha]_D^{28}$ −188.0° (c=0.89, MeOH); UV (MeOH): 234 (4.40), 281.5 (3.50); IR (KBr): 3421, 1730, 1701, 1630, 1522, 1078; ^{1}H-NMR (500 MHz, CD_3OD): part a: 5.96 (br s, H-1), 7.54 (s, H-3), 3.96 (dd, 9.5, 4.5, H-5), 2.44 (dd, 14.0, 9.5, H-6), 2.70 ((dd, 14.0, 4.5, H-6), 6.11 (qd, 7.5, 1.0, H-8), 1.78 (dd, 7.5, 1.0, H_3-10), 3.71 (s, MeO-11), 4.88 (d, 8.0, H-1′), 3.46 (dd, 9.5, 8.0, H-2′), 4.95 (t, 9.5, H-3′), 3.49 (t, 9.5, H-4′), 3.42 (ddd, 9.5, 6.0, 2.0, H-5′), 3.68 (dd, 11.5, 6.0, H-6′), 3.87 (dd, 11.5, 2.0, H-6′), 6.66 (d, 2.0, H-2″), 6.69 (d, 8.0, H-5″), 6.55 (dd, 8.0, 2.0, H-6″), 2.76 (t, 7.0, H_2-7″), 4.10 (dt, 11.0, 7.0, H-8″), 4.20 (dt, 11.0, 7.0, H-8″); part b: 5.90 (br s, H-1), 7.52 (s, H-3), 4.01 (dd, 7.0, 5.0, H-5), 2.73 (m, H_2-6), 6.08 (qd, 7.0, 1.0, H-8), 1.66 (dd, 7.0, 1.5, H_3-10), 3.73 (s, MeO-11), 4.80 (d, 8.0, H-1′), 3.31 (dd, 9.5, 8.0, H-2′), 3.41 (t, 9.5, H-3′), 3.27 (t, 9.5, H-4′), 3.36 (ddd, 9.5, 6.0, 2.5, H-5′), 3.66 (dd, 12.0, 6.0, H-6′), 3.91 (dd, 12.0, 2.5, H-6′); ^{13}C-NMR (125 MHz, CD_3OD): part a: 95.7 (C-1), 155.1 (C-3), 109.2 (C-4), 31.8 (C-5), 41.2 (C-6), 173.2 (C-7), 125.1 (C-8), 130.5 (C-9), 13.7 (C-10), 169.0 (C-11), 51.9 (OMe), 101.0 (C-1′), 72.8 (C-2′), 79.0 (C-3′), 69.5 (C-4′), 78.1 (C-5′), 62.3 (C-6′), 130.7 (C-1″), 117.1 (C-2″), 146.2 (C-3″), 144.9 (C-4″), 116.4 (C-5″), 121.3 (C-6″), 35.4 (C-7″), 66.9 (C-8″); part b: 95.4 (C-1), 155.4 (C-3), 109.4 (C-4), 31.6 (C-5), 40.7 (C-6), 172.9 (C-7), 125.0 (C-8), 130.4 (C-9), 13.6 (C-10), 168.7 (C-11), 52.0 (OMe), 100.9 (C-1′), 74.7 (C-2′), 78.0 (C-3′), 71.6 (C-4′), 78.3 (C-5′), 62.8 (C-6′). *Jasminum polyanthum* (Oleaceae).[42]

126. Isojaspolyoside C



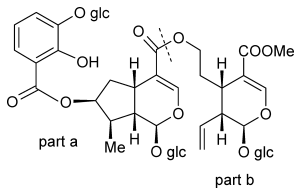
$C_{42}H_{54}O_{23}$: 926.3055; isolated as a mixture with jaspolyoside; ^{1}H-NMR (500 MHz, CD_3OD): part a: 5.91 (br s, H-1), 7.53 (s, H-3), 3.97 (dd, 9.0, 4.5, H-5), 2.44 (dd, 14.5, 9.0, H-6), 2.70 ((dd, 14.5, 4.5, H-6), 6.08 (qd, 7.0, 1.0, H-8), 1.66 (dd, 7.0, 1.5, H_3-10), 3.71 (s, MeO-11), 4.80 (d, 7.5, H-1′), 3.40 (dd, 10.0, 7.5, H-2′), 3.58 (t, 10.0, H-3′), 4.73 (t, 10.0, H-4′), 3.52 (ddd, 10.0, 6.0, 2.5, H-5′), 3.69 (dd, 11.5, 6.0, H-6′), 3.89 (br d, 11.5, H-6′), 6.66 (d, 2.0, H-2″), 6.69 (d, 8.0, H-5″), 6.55 (dd, 8.0, 2.0, H-6″), 2.76 (t, 7.0, H_2-7″), 4.11 (dt, 11.0, 7.0, H-8″), 4.21 (dt, 11.0, 7.0, H-8″); part b: 5.98 (br s, H-1), 7.51 (s, H-3), 4.03 (dd, 9.0, 4.0, H-5), 2.59 (dd, 14.5, 9.0, H-6), 2.87 (dd, 14.5, 4.0, H-6), 6.15 (qd, 7.0, 1.0, H-8), 1.76 (dd, 7.0, 1.5, H_3-10), 3.72 (s, MeO-11), 4.80 (d, 7.5, H-1′), 3.31 (m, H-2′), 3.41 (t, 10.0, H-3′), 3.32 (m, H-4′), 3.34 (m, H-5′), 3.69 (dd, 11.5, 6.0, H-6′), 3.89 (br d, 11.5, H-6′); ^{13}C-NMR (125 MHz, CD_3OD): part a: 95.3 (C-1), 155.1 (C-3), 109.5 (C-4), 31.9 (C-5), 41.3 (C-6), 173.3 (C-7), 125.0 (C-8), 130.5 (C-9), 13.6 (C-10), 168.7 (C-11), 52.0 (OMe), 100.8 (C-1′), 74.8 (C-2′), 75.7 (C-3′), 72.7 (C-4′), 76.1 (C-5′), 62.5 (C-6′), 130.8 (C-1″), 117.1 (C-2″), 146.3 (C-3″), 145.0 (C-4″), 116.5 (C-5″), 121.4 (C-6″), 35.4 (C-7″), 66.9 (C-8″); part b: 95.5 (C-1), 155.4 (C-3), 109.4 (C-4), 31.6 (C-5), 40.8 (C-6), 172.4 (C-7), 125.4 (C-8), 130.8 (C-9), 13.8 (C-10), 168.7 (C-11), 52.0 (OMe), 101.2 (C-1′), 74.7 (C-2′), 78.0 (C-3′), 71.3 (C-4′), 78.4 (C-5′), 62.5 (C-6′). *Jasminum polyanthum* (Oleaceae).[42)]

127. Depresteroside



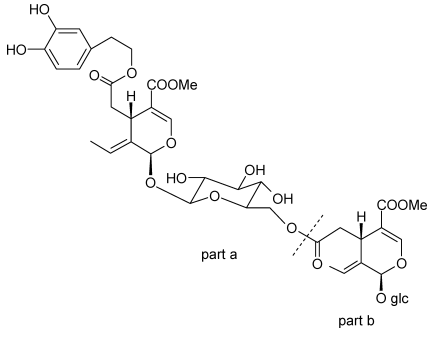
$C_{40}H_{52}O_{22}$: 884.2949; amorphous powder; UV (MeOH): 220, 235sh, 277sh, 317; ^{1}H-NMR (500 MHz, CD_3OD): part a: 5.34 (d, 4.5, H-1), 7.47 (d, 1.0, H-3), 3.20 (m, 9.0, 8.5, 8.0, 1.0, H-5), 2.46 (m, 14.0, 8.5, 0.7, H-6), 1.89 (m, 14.0, 8.0, 5.0, H-6), 5.45 (br ddd, 5.0, 4.5, 0.7, H-7), 2.23 (m, 8.5, 6.5, 4.5, H-8), 2.18 (ddd, 9.0, 8.5, 4.5, H-9), 1.14 (d, 6.5, H_3-10), 4.69 (d, 8.0, H-1′), 3.21—3.40 (m, H-2′, 3′, 4′, 5′), 3.92 (dd, 12.0, 2.0, H-6′), 3.68 (dd, 12.0, 6.5, H-6′), 7.03 (dd, 8.0, 1.5, H-4″), 6.77 (t, 8.0, H-5″), 7.34 (dd, 8.0, 1.5, H-6″); part b: 5.54 (d, 6.0, H-1), 7.44 (d, 0.5, H-3), 2.89 (m, 7.5, 7.0, 5.5, 0.5, H-5), 2.01 (m, 13.5, 7.0, 6.5, 6.2, H-6), 1.79 (m, 13.5, 7.5, 7.0, 5.5, H-6), 4.18 (ddd, 12.0, 6.2, 5.5, H-7), 4.11 (ddd, 12.0, 7.0, 6.5, H-7), 5.75 (ddd, 17.5, 11.5, 8.5, H-8), 2.63 (ddd, 8.5, 6.0, 5.5, H-9), 5.27 (dd, 17.5, 1.5, H-10), 5.21 (dd, 11.5, 1.5, H-10), 3.65 (s, MeO), 4.72 (d, 8.0, H-1′), 3.21—3.40 (m, H-2′, 3′, 4′, 5′), 3.89 (dd, 12.0, 1.5, H-6′), 3.66 (dd, 12.0, 6.0, H-6′); ^{13}C-NMR (125 MHz, CD_3OD): part a: 97.6 (C-1), 152.5 (C-3), 114.1 (C-4), 32.7 (C-5), 40.5 (C-6), 80.1 (C-7), 41.2 (C-8), 47.1 (C-9), 13.8 (C-10), 168.9 (C-11), 100.1 (C-1′), 74.8 (C-2′)[a], 78.0 (C-3′)[b], 71.6 (C-4′), 78.4 (C-5′), 62.8 (C-6′), 113.2 (C-1″), 151.5 (C-2″), 147.2 (C-3″), 121.8 (C-4″), 120.1 (C-5″), 121.1 (C-6″), 171.3 (C-6″); part b: 97.7 (C-1), 153.7 (C-3), 111.4 (C-4), 31.2 (C-5), 30.0 (C-6), 63.6 (C-7), 135.7 (C-8), 45.2 (C-9), 119.6 (C-10), 169.2 (C-11), 51.9 (OMe), 100.3 (C-1′), 74.7 (C-2′)[a], 77.9 (C-3′)[b], 71.6 (C-4′), 78.4 (C-5′), 62.8 (C-6′). *Gentiana depressa* (Gentianaceae).[57)]

128. 3″-Glucosyldepresteroside



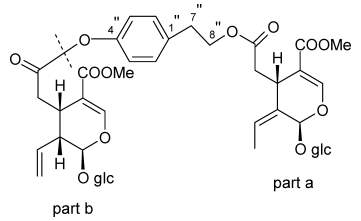
$C_{46}H_{62}O_{27}$: 1046.3477; UV (MeOH): 220, 235sh, 277sh, 317; ^{1}H-NMR (400 MHz, CD_3OD): part a: 5.33 (d, 4.5, H-1), 7.47 (d, 1.0, H-3), 3.21 (m, 9.0, 8.5, 8.0, 1.0, H-5), 2.48 (br dd, 14.0, 8.5, 0.5, H-6), 1.88 (m, 14.0, 8.0, 5.5, H-6), 5.48 (m, 5.5, 4.5, 0.5, H-7), 2.24 (m, 8.7, 6.7, 4.5, H-8), 2.18 (ddd, 9.0, 8.7, 4.5, H-9), 1.16 (d, 6.7, H_3-10), 4.68 (d, 8.0, H-1′), 3.21—3.40 (m, H-2′, 3′, 4′, 5′), 3.62—3.92 (m, H_2-6′), 7.43 (dd, 8.0, 1.0, H-4″), 6.90 (t, 8.0, H-5″), 7.56 (dd, 8.0, 1.0, H-6″), 4.92 (d, 7.0, H-1‴), 3.20—3.40 (m, H-2‴, 3‴, 4‴, 5‴), 3.62—3.92 (m, H_2-6‴); part b: 5.53 (d, 6.5, H-1), 7.44 (d, 0.5, H-3), 2.89 (br td, 7.0, 7.0, 5.5, H-5), 2.00 (m, 13.5, 7.0, 6.5, 6.0, H-6), 1.68 (m, 13.5, 7.0, 7.0, 5.5, H-6), 4.18 (m, 12.0, 6.0, 5.5, H-7), 4.13 (m, 12.0, 7.0, 6.5, H-7), 5.74 (ddd, 17.0, 11.0, 8.5, H-8), 2.61 (m, 8.5, 6.5, 5.5, H-9), 5.26 (dd, 17.0, 1.0, H-10), 5.20 (dd, 11.0, 1.0, H-10), 3.65 (s, OMe), 4.71 (d, 8.0, H-1′), 3.20—3.40 (m, H-2′, 3′, 4′, 5′), 3.62—3.92 (m, H_2-6′); ^{13}C-NMR (100 MHz, CD_3OD): part a: 97.7 (C-1), 152.7 (C-3), 115.1 (C-4), 32.7 (C-5), 40.5 (C-6), 80.3 (C-7), 41.2 (C-8), 47.2 (C-9), 13.7 (C-10), 169.2 (C-11), 100.3 (C-1′), 74.7 (C-2′), 77.7 (C-3′), 71.6 (C-4′), 78.3 (C-5′), 62.8 (C-6′), 113.2 (C-1″), 153.0 (C-2″), 147.3 (C-3″), 124.6 (C-4″), 120.1 (C-5″), 124.0 (C-6″), 170.8 (C-7″), 103.3 (C-1‴), 74.8 (C-2‴), 77.7 (C-3‴), 71.4 (C-4‴), 77.9 (C-5‴), 62.5 (C-6‴); part b: 97.7 (C-1), 153.6 (C-3), 111.5 (C-4), 31.3 (C-5), 30.1 (C-6), 63.5 (C-7), 135.6 (C-8), 45.3 (C-9), 119.5 (C-10), 168.8 (C-11), 51.8 (OMe), 100.2 (C-1′), 74.7 (C-2′), 77.7 (C-3′), 71.6 (C-4′), 78.3 (C-5′), 62.8 (C-6′). *Gentiana depressa* (Gentianaceae).[31)]

129. Jaspolyoside



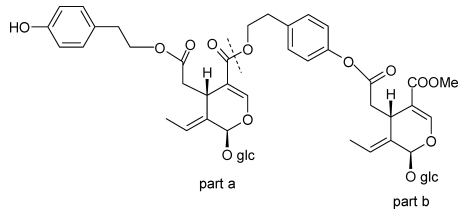
$C_{42}H_{54}O_{23}$: 926.3055; amorphous powder; $[\alpha]_D^{26}$ −198.0° (c=0.99, MeOH); UV (MeOH): 234.5 (4.41), 282 (3.46); IR (KBr): 3425, 1732, 1717, 1636, 1506, 1076, 816; ^{1}H-NMR (500 MHz, CD_3OD): part a: 5.88 (br s, H-1), 7.49 (s, H-3), 3.98 (dd, 9.0, 4.5, H-5), 2.41 (dd, 15.0, 9.0, H-6), 2.70 (dd, 15.0, 4.5, H-6), 6.08 (qd, 7.0, 0.9, H-8), 1.71 (dd, 7.0, 1.0, H_3-10), 3.67 (s, OMe), 4.81 (d, 7.5, H-1′), 3.27—3.57 (m, H-2′, 3′, 4′, 5′), 4.22 (dd, 12.0, 6.0, H-6′), 4.33 (dd, 12.0, 1.5, H-6′), 6.63 (d, 2.0, H-2″), 6.68 (d, 8.0, H-5″), 6.52 (dd, 8.0, 2.0, H-6″), 2.72 (t, 7.0, H_2-7″), 4.08 (dt, 11.0, 7.0, H-8″), 4.17 (dt, 11.0, 7.0, H-8″); part b: 5.84 (br s, H-1), 7.52 (s, H-3), 3.96 (dd, 9.0, 4.5, H-5), 2.38 (dd, 15.0, 9.0, H-6), 2.69 (dd, 15.0, 4.5, H-6), 6.07 (qd, 7.0, 0.9, H-8), 1.65 (dd, 7.0, 1.0, H_3-10), 3.71 (s, OMe), 4.83 (d, 7.5, H-1′), 3.27—3.57 (m, H-2′, 3′, 4′, 5′), 3.68 (dd, 12.0, 5.5, H-6′), 3.89 (dd, 12.0, 1.5, H-6′); ^{13}C-NMR (125 MHz, CD_3OD): part a: 95.2 (C-1), 155.2 (C-3), 109.4 (C-4), 31.8 (C-5), 41.3 (C-6), 173.0 (C-7), 124.9 (C-8), 130.5 (C-9), 13.8 (C-10), 168.7 (C-11), 52.0, (OMe), 101.1 (C-1′), 74.7 (C-2′), 77.8 (C-3′), 71.4 (C-4′), 75.5 (C-5′), 64.8 (C-6′), 130.8 (C-1″), 116.6 (C-2″), 146.2 (C-3″), 144.9 (C-4″), 117.1 (C-5″), 121.4 (C-6″), 35.5 (C-7″), 66.9 (C-8″); part b: 95.4 (C-1), 155.2 (C-3), 109.5 (C-4), 31.8 (C-5), 41.4 (C-6), 173.0 (C-7), 125.2 (C-8), 130.3 (C-9), 13.6 (C-10), 168.6 (C-11), 52.0 (OMe), 100.9 (C-1′), 74.8 (C-2′), 78.0 (C-3′), 71.5 (C-4′), 78.4 (C-5′), 62.7 (C-6′). *Jasminum polyanthum* (Oleaceae).[58)]

130. Austrosmoside



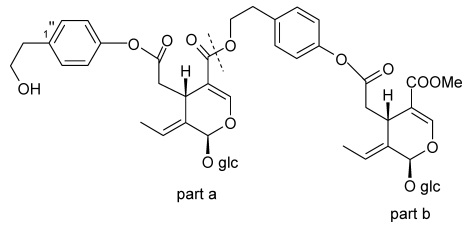
$C_{42}H_{54}O_{22}$: 910.3106; $[\alpha]_D^{20}$ −78.0° (c=0.07, MeOH); UV (MeOH): 243 (3.48); ^{1}H-NMR (270 MHz, DMSO-d_6): part a: 5.77 (s, H-1), 7.50 (d, 1.0, H-3), 5.94 (q, 7.0, H-8), 1.67 (d, 7.0, H_3-10), 3.65 (s, MeO-11), 4.52 (d, 8.0, H-1′), 7.28 (d, 8.0, H-2″, 6″), 7.04 (d, 8.0, H-3″, 5″); part b: 5.45 (d, 4.0, H-1), 7.43 (d, 2.0, H-3), 5.64 (ddd, 16.0, 10.0, 9.0, H-8), 5.35 (m, H_2-10), 3.63 (s, MeO-11), 4.52 (d, 8.0, H-1′). *Osmanthus austrocaledonica* (Oleaceae).[59)]

131. Safghanoside G



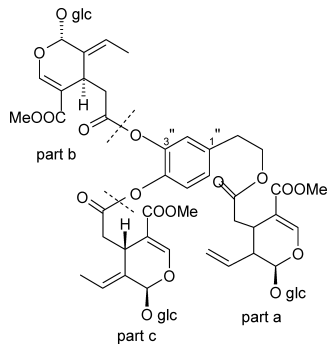
$C_{49}H_{60}O_{23}$: 1016.3524; colorless amorphous powder; $[\alpha]_D^{27}$ −182.0° (c=0.62, MeOH); UV (MeOH): 227 (4.35), 246.5sh (4.24), 277 (3.64), 288sh (3.54); IR (KBr): 3413, 1739, 1705, 1634, 1508, 1076; ^{1}H-NMR (500 MHz, CD_3OD): part a: 5.91 (br s, H-1), 7.50 (s, H-3), 3.94 (dd, 9.0, 4.0, H-5), 2.43 (dd, 14.0, 9.0, H-6), 2.72 (dd, 14.0, 4.0, H-6), 6.05 (qd, 7.0, 1.0, H-8), 1.59 (dd, 7.0, 1.0, H_3-10), 4.82 (d, 8.0, H-1′)[a], 3.41 (t, 8.5, H-3′), 3.63 (dd, 12.0, 5.5, H-6′)[b], 3.83 (dd, 12.0, 2.0, H-6′)[c], 7.06 (d, 8.5, H-2″, 6″), 6.70 (d, 8.5, H-3″, 5″), 2.86 (t, 6.5, H_2-7″), 4.16, 4.29 (each dt, 11.0, 6.5, H_2-8″); part b: 6.02 (br s, H-1), 7.51 (s, H-3), 4.07 (dd, 9.0, 4.0, H-5), 2.66 (dd, 14.0, 9.0, H-6), 2.87 (dd, 14.0, 4.0, H-6), 6.16 (qd, 7.0, 1.0, H-8), 1.74 (dd, 7.0, 1.0, H_3-10), 3.71 (s, MeO-11), 4.80 (d, 8.0, H-1′)[a], 3.41 (t, 8.5, H-3′), 3.66 (dd, 12.0, 5.5, H-6′)[b], 3.88 (dd, 12.0, 2.0, H-6′)[c], 7.28 (d, 8.5, H-2″, 6″), 7.02 (d, 8.5, H-3″, 5″), 2.94 (t, 6.5, H_2-7″), 4.29 (dt, 11.0, 6.5, H_2-8″); ^{13}C-NMR (125 MHz, CD_3OD): part a: 95.2 (C-1), 155.3 (C-3)[a], 109.5 (C-4), 31.9 (C-5), 41.3 (C-6), 173.2 (C-7), 125.0 (C-8), 130.4 (C-9), 13.6 (C-10), 168.2 (C-11), 101.0 (C-1′)[b], 74.8 (C-2′), 78.0 (C-3′), 71.5 (C-4′)[c], 78.5 (C-5′), 62.7 (C-6′)[d], 130.3 (C-1″), 131.1 (C-2″, 6″), 116.4 (C-3″, 5″), 157.1 (C-4″), 35.4 (C-7″), 66.5 (C-8″); part b: 95.4 (C-1), 155.2 (C-3)[a], 109.4 (C-4), 31.8 (C-5), 41.1 (C-6), 171.6 (C-7), 125.2 (C-8), 130.6 (C-9), 13.9 (C-10), 168.7 (C-11), 52.0 (OMe), 100.9 (C-1′)[b], 74.8 (C-2′), 78.0 (C-3′), 71.6 (C-4′)[c], 78.5 (C-5′), 62.9 (C-6′)[d], 137.2 (C-1″), 131.0 (C-2″, 6″), 122.8 (C-3″, 5″), 150.8 (C-4″), 35.3 (C-7″), 66.5 (C-8″). *Syringa afghanica* (Oleaceae).[45)]

132. Safghanoside H



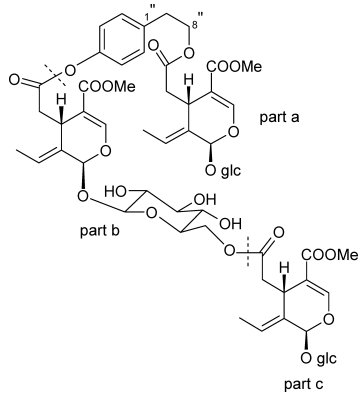
$C_{49}H_{60}O_{23}$: 1016.3524; colorless amorphous powder; $[\alpha]_D^{28}$ −142.0° (c=0.33, MeOH); UV (MeOH): 225.5sh (4.22), 236 (4.28), 268sh (3.22); IR (KBr): 3397, 1751, 1701, 1631, 1508, 1074; ^{1}H-NMR (500 MHz, CD_3OD): part a: 6.01 (br s, H-1)[a], 7.51 (s, H-3), 4.06 (dd, 9.0, 4.0, H-5), 2.72 (dd, 14.0, 9.0, H-6), 2.95 (dd, 14.0, 4.0, H-6), 6.17 (qd, 7.0, 1.0, H-8), 1.74 (dd, 7.0, 1.0, H_3-10), 4.82 (d, 8.0, H-1′), 3.41 (t, 8.5, H-3′), 3.63 (dd, 12.0, 5.5, H-6′), 3.82 (dd, 12.0, 2.0, H-6′), 7.25 (d, 8.5, H-2″, 6″), 6.99 (d, 8.5, H-3″, 5″), 2.82 (t, 7.0, H_2-7″), 3.74 (t, 7.0, H_2-8″); part b: 6.03 (br s, H-1)[a], 7.57 (s, H-3), 4.11 (dd, 9.0, 4.0, H-5), 2.65 (dd, 14.0, 9.0, H-6), 2.85 (dd, 14.0, 4.0, H-6), 6.17 (qd, 7.0, 1.0, H-8), 1.74 (dd, 7.0, 1.0, H_3-10), 3.72 (s, MeO-11), 4.82 (d, 8.0, H-1′), 3.41 (t, 8.5, H-3′), 3.63 (dd, 12.0, 5.5, H-6′), 3.82 (dd, 12.0, 2.0, H-6′), 7.29 (d, 8.5, H-2″, 6″), 7.01 (d, 8.5, H-3″, 5″), 2.98 (t, 6.5, H_2-7″), 4.36 (t, 6.5, H_2-8″); ^{13}C-NMR (125 MHz, CD_3OD): part a: 95.4 (C-1), 155.3 (C-3), 109.4 (C-4), 31.8 (C-5), 41.1 (C-6), 171.6 (C-7), 125.2 (C-8), 130.7 (C-9), 13.9 (C-10), 168.1 (C-11), 101.1 (C-1′), 74.8 (C-2′), 78.0 (C-3′)[a], 71.5 (C-4′), 78.4 (C-5′)[a], 62.7 (C-6′), 138.3 (C-1″), 131.0 (C-2″, 6″)[b], 122.6 (C-3″, 5″)[c], 150.6 (C-4″), 39.6 (C-7″), 64.1 (C-8″); part b: 95.4 (C-1), 155.4 (C-3), 109.4 (C-4), 31.8 (C-5), 41.1 (C-6), 171.7 (C-7), 125.2 (C-8), 130.6 (C-9), 13.9 (C-10), 168.7 (C-11), 52.0 (OMe), 101.1 (C-1′), 74.8 (C-2′), 78.0 (C-3′), 71.5 (C-4′), 78.5 (C-5′)[a], 62.7 (C-6′), 137.5 (C-1″), 131.1 (C-2″, 6″)[b], 122.7 (C-3″, 5″)[c], 150.8 (C-4″), 35.5 (C-7″), 66.0 (C-8″). *Syringa afghanica* (Oleaceae).[45)]

133. Jaspolyoleoside A



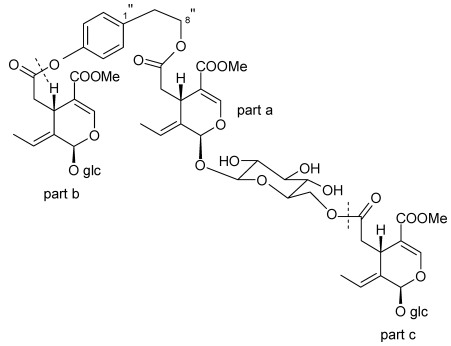
$C_{59}H_{76}O_{33}$: 1312.4267; colorless amorphous powder; $[\alpha]_D^{26}$ −175.0° (c=0.12, MeOH); UV (MeOH): 236.5 (4.49); IR (KBr): 3419, 1733, 1705, 1636, 1506, 1076, 818; ^{1}H-NMR (500 MHz, CD_3OD): part a: 5.91 (br s, H-1), 7.52 (s, H-3), 3.95 (dd, 9.0, 4.5, H-5), 2.44 (dd, 14.0, 9.0, H-6), 2.71 (dd, 14.0, 4.5, H-6), 6.06 (qd, 7.0, 1.0, H-8), 1.61 (dd, 7.0, 1.5, H_3-10), 3.70 (s, OMe), 4.82 (d, 8.0, H-1′), 3.30—3.43 (m, H-2′, 3′, 4′, 5′), 3.68 (dd, 12.0, 6.0, H-6′), 3.88 (dd, 12.0, 1.5, H-6′), 7.11 (d, 2.0, H-2″), 7.12 (d, 8.5, H-5″), 7.20 (dd, 8.5, 2.0, H-6″), 2.96 (t, 6.5, H_2-7″), 4.18 (dt, 10.5, 6.5, H-8″), 4.30 (dt, 10.5, 6.5, H-8″); part b: 6.04 (br s, H-1), 7.57 (s, H-3), 4.10 (dd, 9.5, 4.5, H-5), 2.77 (dd, 15.0, 9.5, H-6), 2.96 (dd, 15.0, 4.5, H-6), 6.18 (qd, 7.0, 1.0, H-8), 1.77 (dd, 7.0, 1.5, H_3-10), 3.74 (s, OMe), 4.80 (d, 8.0, H-1′), 3.30—3.43 (m, H-2′, 3′, 4′, 5′), 3.64 (dd, 12.0, 6.0, H-6′), 3.85 (dd, 12.0, 1.5, H-6′); part c: 6.04 (br s, H-1), 7.57 (s, H-3), 4.10 (dd, 9.5, 4.5, H-5), 2.78 (dd, 15.0, 9.5, H-6), 2.97 (dd, 15.0, 4.5, H-6), 6.18 (qd, 7.0, 1.0, H-8), 1.78 (dd, 7.0, 1.5, H_3-10), 3.74 (s, OMe), 4.80 (d, 8.0, H-1′), 3.30—3.43 (m, H-2′, 3′, 4′, 5′), 3.64 (dd, 12.0, 6.0, H-6′), 3.86 (dd, 12.0, 2.0, H-6′); ^{13}C-NMR (125 MHz, CD_3OD): part a: 95.1 (C-1), 155.2 (C-3), 109.4 (C-4), 31.9 (C-5), 41.4 (C-6), 173.1 (C-7), 125.0 (C-8), 130.5 (C-9), 13.6 (C-10), 168.7 (C-11), 52.0 (OMe), 100.9 (C-1′), 74.8 (C-2′), 78.0 (C-3′), 71.5 (C-4′), 78.5 (C-5′), 62.8 (C-6′), 138.7 (C-1″), 124.5 (C-2″), 143.4 (C-3″), 142.2 (C-4″), 125.0 (C-5″), 128.4 (C-6″), 35.3 (C-7″), 66.1 (C-8″); part b: 95.2 (C-1), 155.4 (C-3), 109.4 (C-4), 31.7 (C-5), 40.7 (C-6), 170.7 (C-7)[a], 125.5 (C-8), 130.5 (C-9), 14.0 (C-10), 168.6 (C-11), 52.1 (OMe), 101.0 (C-1′), 74.8 (C-2′), 78.0 (C-3′), 71.6 (C-4′), 78.5 (C-5′), 62.7 (C-6′)[b]; part c: 95.2 (C-1), 155.4 (C-3), 109.4 (C-4), 31.7 (C-5), 40.7 (C-6), 170.8 (C-7), 125.5 (C-8), 130.5 (C-9), 14.0 (C-10), 168.6 (C-11), 52.1 (OMe), 101.0 (C-1′), 74.8 (C-2′), 78.0 (C-3′), 71.6 (C-4′), 78.5 (C-5′), 62.8 (C-6′)[b]. *Jasminum polyanthum* (Oleaceae).[60)]

134. Jaspolyoleoside B



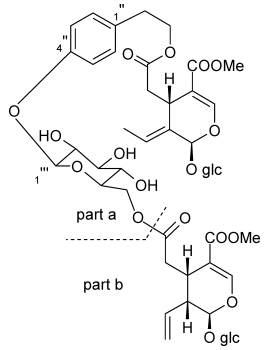
$C_{59}H_{76}O_{32}$: 1296.4318; colorless amorphous powder; $[\alpha]_D^{25}$ −180.0° (c=0.35, MeOH); UV (MeOH): 235.5 (4.48); IR (KBr): 3429, 1733, 1705, 1636, 1508, 1076, 816; ^{1}H-NMR (500 MHz, CD_3OD): part a: 5.92 (br s, H-1), 7.51 (s, H-3), 3.94 (dd, 9.5, 5.0, H-5), 2.44 (dd, 14.0, 9.5, H-6), 2.71 (dd, 14.0, 5.0, H-6), 6.06 (qd, 7.0, 1.0, H-8), 1.59 (dd, 7.0, 1.5, H_3-10), 3.71 (s, OMe), 4.81 (d, 7.5, H-1′), 3.30—3.45 (m, H-2′, 3′, 4′, 5′), 3.66 (dd, 12.0, 6.0, H-6′), 3.88 (dd, 12.0, 2.0, H-6′), 7.26 (d, 8.5, H-2″, 6″), 6.98 (d, 8.5, H-3″, 5″), 2.93 (t, 6.5, H_2-7″), 4.16 (dt, 11.0, 6.5, H-8″), 4.29 (dt, 11.0, 6.5, H-8″); part b: 5.98 (br s, H-1), 7.58 (s, H-3), 4.10 (dd, 9.5, 4.5, H-5), 2.70 (dd, 14.0, 9.5, H-6), 2.97 (dd, 14.0, 4.5, H-6), 6.18 (qd, 7.0, 1.0, H-8), 1.73 (dd, 7.0, 1.5, H_3-10), 3.68 (s, OMe), 4.83 (d, 7.5, H-1′), 3.30—3.45 (m, H-2′, 3′, 4′), 3.53 (ddd, 9.5, 6.0, 2.0, H-5′), 4.13 (dd, 12.0, 6.0, H-6′), 4.26 (dd, 12.0, 2.0, H-6′); part c: 5.86 (br s, H-1), 7.49 (s, H-3), 3.96 (dd, 9.0, 5.0, H-5), 2.32 (dd, 14.0, 9.0, H-6), 2.67 (dd, 14.0, 5.0, H-6), 6.06 (qd, 7.0, 1.5, H-8), 1.69 (dd, 7.0, 1.5, H_3-10), 3.74 (s, OMe), 4.78 (d, 8.0, H-1′), 3.30—3.45 (m, H-2′, 3′, 4′, 5′), 3.65 (dd, 12.0, 5.5, H-6′), 3.89 (dd, 12.0, 2.0, H-6′); ^{13}C-NMR (125 MHz, CD_3OD): part a: 95.2 (C-1), 155.2 (C-3), 109.4 (C-4), 31.8 (C-5), 41.2 (C-6), 173.2 (C-7), 125.0 (C-8), 130.5 (C-9), 13.6 (C-10), 168.7 (C-11), 52.1 (OMe), 101.0 (C-1′), 74.7 (C-2′), 77.8 (C-3′), 71.4 (C-4′), 78.5 (C-5′), 62.8 (C-6′), 137.3 (C-1″), 131.1 (C-2″, 6″), 122.8 (C-3″, 5″), 150.8 (C-4″), 35.4 (C-7″), 66.5 (C-8″); part b: 95.7 (C-1), 155.4 (C-3), 109.4 (C-4), 31.9 (C-5), 41.4 (C-6), 171.4 (C-7), 125.4 (C-8), 130.5 (C-9), 13.8 (C-10), 168.7 (C-11), 52.1 (OMe), 100.4 (C-1′), 74.7 (C-2′), 78.0 (C-3′), 71.5 (C-4′), 75.5 (C-5′), 65.0 (C-6′); part c: 95.2 (C-1), 155.2 (C-3), 109.5 (C-4), 31.9 (C-5), 41.3 (C-6), 172.9 (C-7), 124.9 (C-8), 130.5 (C-9), 13.8 (C-10), 168.7 (C-11), 52.1 (OMe), 100.4, (C-1′), 74.8 (C-2′), 78.0 (C-3′), 71.6 (C-4′), 78.5 (C-5′), 62.9 (C-6′). *Jasminum polyanthum* (Oleaceae).[60]

135. Jaspolyoleoside C



$C_{59}H_{76}O_{32}$: 1296.4318; colorless amorphous powder; $[\alpha]_D^{24}$ −167.0° (c=0.43, MeOH); UV (MeOH): 236 (4.49); IR (KBr): 3411, 1734, 1707, 1632, 1508, 1078, 816; ^{1}H-NMR (500 MHz, CD_3OD): part a: 5.84 (br s, H-1), 7.52 (s, H-3), 3.93 (dd, 9.5, 4.5, H-5), 2.40 (dd, 14.0, 9.5, H-6), 2.70 (dd, 14.0, 4.5, H-6), 6.03 (qd, 7.0, 1.0, H-8), 1.57 (dd, 7.0, 1.5, H_3-10), 3.71 (s, OMe), 4.82 (d, 7.5, H-1′), 3.30—3.45 (m, H-2′, 3′, 4′), 3.55 (ddd, 9.0, 5.5, 2.0, H-5′), 4.20 (dd, 12.0, 5.5, H-6′), 4.35 (dd, 12.0, 2.0, H-6′), 7.25 (d, 8.5, H-2″, 6″), 7.03 (d, 8.5, H-3″, 5″), 2.89 (t, 6.5, H_2-7″), 4.14 (dt, 11.0, 6.5, H-8″), 4.27 (dt, 11.0, 6.5, H-8″); part b: 6.04 (br s, H-1), 7.50 (s, H-3), 4.12 (dd, 9.5, 4.5, H-5), 2.74 (dd, 15.0, 9.5, H-6), 2.97 (dd, 15.0, 4.5, H-6), 6.19 (qd, 7.0, 1.0, H-8), 1.77 (dd, 7.0, 1.5, H_3-10), 3.66 (s, OMe), 4.83 (d, 7.0, H-1′), 3.30—3.45 (m, H-2′, 3′, 4′, 5′), 3.68 (dd, 12.0, 6.0, H-6′), 3.84 (dd, 12.0, 1.5, H-6′); part c: 5.89 (br s, H-1), 7.58 (s, H-3), 3.98 (dd, 8.5, 4.5, H-5), 2.41 (dd, 14.0, 8.5, H-6), 2.70 (dd, 14.0, 4.5, H-6), 6.09 (qd, 7.5, 1.5, H-8), 1.71 (dd, 7.5, 1.5, H_3-10), 3.74 (s, OMe), 4.80 (d, 7.5, H-1′), 3.30—3.45 (m, H-2′, 3′, 4′, 5′), 3.68 (dd, 12.0, 6.0, H-6′), 3.88 (dd, 12.0, 2.0, H-6′); ^{13}C-NMR (125 MHz, CD_3OD): part a: 95.3 (C-1), 155.2 (C-3), 109.4 (C-4), 31.9 (C-5), 41.4 (C-6), 172.9 (C-7), 125.3 (C-8), 130.1 (C-9), 13.6 (C-10), 168.6 (C-11), 52.0 (OMe), 100.9 (C-1′), 74.7 (C-2′), 77.8 (C-3′), 71.4 (C-4′), 75.5 (C-5′), 64.9 (C-6′), 137.3 (C-1″), 131.1 (C-2″, 6″), 122.8 (C-3″, 5″), 150.8 (C-4″), 35.4 (C-7″), 66.4 (C-8″); part b: 95.3 (C-1), 155.2 (C-3), 109.5 (C-4), 31.8 (C-5), 41.2 (C-6), 171.6 (C-7), 125.2 (C-8), 130.7 (C-9), 13.9 (C-10), 168.6 (C-11), 52.0 (OMe), 101.0 (C-1′), 74.8 (C-2′), 78.0 (C-3′), 71.5 (C-4′), 78.5 (C-5′), 62.7 (C-6′); part c: 95.2 (C-1), 155.3 (C-3), 109.4 (C-4), 31.8 (C-5), 41.3 (C-6), 173.0 (C-7), 125.0 (C-8), 130.5 (C-9), 13.8 (C-10), 168.7 (C-11), 52.1 (OMe), 101.0 (C-1′), 74.8 (C-2′), 78.0 (C-3′), 71.5 (C-4′), 78.5 (C-5′), 62.7 (C-6′). *Jasminum polyanthum* (Oleaceae).[60]

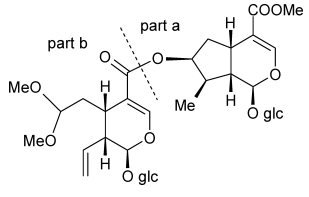
136. Neopolyanoside



$C_{48}H_{64}O_{27}$: 1072.3634; colorless amorphous powder; $[\alpha]_D^{27}$ −137.0° (c=0.51, MeOH); UV (MeOH): 224 (4.37), 236sh (4.31), 272sh (3.18), 278 (3.08); IR (KBr): 3421, 1730, 1707, 1630, 1512, 1076, 818; ^{1}H-NMR (500 MHz, CD_3OD): part a: 5.90 (br s, H-1), 7.51 (s, H-3), 3.95 (dd, 9.0, 4.5, H-5), 2.44 (dd, 14.0, 9.0, H-6), 2.69 (dd, 14.0, 4.5, H-6), 6.06 (qd, 7.5, 1.0, H-8), 1.64 (dd, 7.0, 1.5, H_3-10), 3.71 (s, MeO-11), 4.80 (d, 7.5, H-1′), 3.28 (m, H-5′), 3.72 (dd, 12.0, 4.5, H-6′), 3.90 (dd, 12.0, 2.0, H-6′), 7.17 (d, 8.5, H-2″, 6″), 7.02 (d, 8.5, H-3″, 5″), 2.87 (t, 7.0, H_2-7″), 4.14, 4.25 (each dt, 11.0, 7.0, H_2-8″), 4.87 (d, 7.5, H-1‴), 4.14 (dd, 12.0, 5.5, H-6‴), 4.57 (dd, 12.0, 2.0, H-6‴); part b: 5.45 (d, 4.5, H-1), 7.48 (d, 1.5, H-3), 3.32 (m, H-5), 2.29 (dd, 16.5, 9.0, H-6), 3.03 (dd, 16.5, 5.5, H-6), 5.55 (dt, 17.0, 10.0, H-8), 2.86 (ddd, 10.0, 5.5, 4.0, H-9), 5.07 (dd, 10.0, 1.0, H-10), 5.14 (dd, 17.0, 1.0, H-10), 3.64 (s, MeO-11), 4.67 (d, 7.5, H-1′), 3.34 (m, H-5′), 3.67 (dd, 12.0, 4.5, H-6′), 3.88 (dd, 12.0, 1.5, H-6′); ^{13}C-NMR (125 MHz, CD_3OD): part a: 95.2 (C-1), 155.2 (C-3), 109.4 (C-4), 31.9 (C-5), 41.3 (C-6), 173.2 (C-7), 124.9 (C-8), 130.5 (C-9), 13.6 (C-10), 168.7 (C-11), 52.0 (OMe), 100.9 (C-1′), 74.5 (C-2′)[a], 78.1 (C-3′)[b], 71.5 (C-4′)[c], 78.4 (C-5′), 62.8 (C-6′), 133.4 (C-1″), 131.0 (C-2″, 6″), 118.1 (C-3″, 5″), 157.8 (C-4″), 35.3 (C-7″), 66.7 (C-8″), 102.4 (C-1‴), 74.7 (C-2‴), 77.9 (C-3‴), 71.3 (C-4‴), 75.3 (C-5‴), 64.3 (C-6‴); part b: 97.7 (C-1), 153.8 (C-3), 109.9 (C-4), 28.7 (C-5), 35.6 (C-6), 173.9 (C-7), 134.1 (C-8), 45.0 (C-9), 121.1 (C-10), 168.9 (C-11), 51.8 (OMe), 100.1 (C-1′), 74.8 (C-2′)[a], 78.0 (C-3′)[b], 71.6 (C-4′)[c], 78.5 (C-5′), 62.6 (C-6′). *Jasminum polyanthum* (Oleaceae).[25]

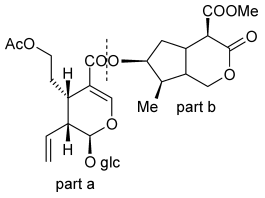
C. Others

137. Cantleyoside-dimethyl-acetal



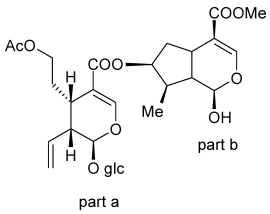
$C_{35}H_{52}O_{20}$: 792.3051; $[\alpha]_D^{20}$ −110.0° (c=0.35, MeOH); ^{1}H-NMR (400 MHz, CD_3OD): part a: 5.35—5.28 (m, H-1), 7.44 (s, H-3), 3.15 (m, H-5), 1.78 (m, H-6), 2.32 (m, H-6), 5.22 (t, 3.7, H-7), 2.05—2.15 (m, H-8, 9), 1.09 (d, 6.2, H_3-10), 3.72 (s, MeO-11), 4.71 (d, 7.8, H-1′), 3.18—3.40 (m, H-2′, 3′, 4′, 5′), 3.65 (m, H-6′), 3.90 (d, 11.6, H-6′); part b: 5.53 (d, 5.4, H-1), 7.46 (s, H-3), 2.93 (m, H-5), 2.05—2.15 (m, H-6), 1.65 (m, H-6), 4.54 (dd, 7.0, 5.0, H-7), 5.76 (m, H-8), 2.70 (m, H-9), 5.28—5.35 (m, H_2-10), 3.18—3.40 (2×MeO-7), 4.70 (d, 7.9, H-1′), 3.18—3.40 (m, H-2′, 3′, 4′, 5′), 3.65 (m, H-6′), 3.90 (d, 11.6, H-6′); ^{13}C-NMR (100 MHz, CD_3OD): part a: 98.3 (C-1), 154.2 (C-3), 114.2 (C-4), 33.4 (C-5), 41.2 (C-6), 79.3 (C-7), 41.9 (C-8), 47.9 (C-9), 14.7 (C-10), 170.3 (C-11), 101.1 (C-1′), 75.5 (C-2′), 78.9 (C-3′), 72.5 (C-4′), 79.3 (C-5′), 63.6 (C-6′); part b: 98.7 (C-1), 153.4 (C-3), 112.9 (C-4), 30.4 (C-5), 34.1 (C-6), 105.7 (C-7), 136.7 (C-8), 46.3 (C-9), 120.7 (C-10), 169.2 (C-11), 101.1 (C-1′), 75.5 (C-2′), 78.9 (C-3′), 72.5 (C-4′), 79.3 (C-5′), 63.6 (C-6′), 53.6, 54.5 (2×MeO). *Pterocephalus perennis* (Dipsacaceae).[61] It was reported earlier from *Scaeveola montana* (Goodinaceae) with only ^{1}H-NMR data.[62]

138. 7-*O*-Acetyllaciniatoside IV



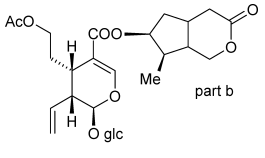
$C_{29}H_{40}O_{15}$: 628.2367; white amorphous powder; $[\alpha]_D^{20}$ −27.2° (c=0.20, MeOH); IR (KBr): 1750, 1700, 1630; ^{1}H-NMR (500 MHz, CD_3OD): part a: 5.54 (d, 6.6, H-1), 7.49 (s, H-3), 2.85 (q-shaped m, H-5), 1.82 (dq, 14.0, 6.2, H-6), 2.00 (m, H-6), 4.09 (m, H_2-7), 5.76 (ddd, 17.4, 10.7, 9.0, H-8), 2.66 (q-shaped m, H-9), 5.27 (m, H_2-10), 4.70 (d, 7.8, H-1′), 3.19 (dd, 9.0, 7.8, H-2′), 3.36 (t, 9.0, H-3′), 3.28 (m, H-4′, 5′), 3.66 (dd, 12.0, 6.2, H-6′), 3.90 (dd, 12.0, 2.0, H-6′), 2.01 (s, Ac); part b: 4.43 (dd, 11.6, 6.0, H-1), 4.17 (dd, 11.6, 9.2, H-1), 3.68 (d, 9.4, H-4), 3.05 (q-shaped m, H-5), 2.16 (m, H-6), 1.61 (ddd, 13.6, 9.5, 3.0, H-6), 5.25 (sharp m, H-7), 2.04 (m, H-8), 2.36 (m, H-9), 1.03 (d, 6.6, H_3-10), 3.78 (s, OMe); ^{13}C-NMR (125 MHz, CD_3OD): part a: 97.8 (C-1), 153.9 (C-3), 111.5 (C-4), 31.2 (C-5), 30.1 (C-6), 64.1 (C-7), 135.6 (C-8), 45.4 (C-9), 119.6 (C-10), 168.1 (C-11), 20.9, 172.9 (Ac), 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: 70.8 (C-1), 171.9 (C-3), 52.4 (C-4), 37.8 (C-5), 39.1 (C-6), 80.1 (C-7), 42.4 (C-8), 43.4 (C-9), 13.5 (C-10), 170.3 (C-11), 53.1 (OMe). *Abelia chinensis* (Caprifoliaceae).[63]

139. 7-*O*-Acetyllaciniatoside V



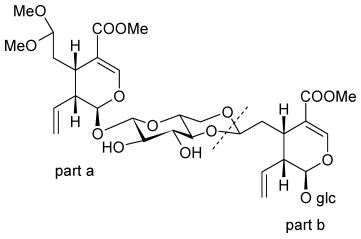
$C_{29}H_{40}O_{15}$: 628.2367; white amorphous powder; $[\alpha]_D^{20}$ −17.4° (c=0.20, MeOH); IR (KBr): 1750, 1700, 1640; ^{1}H-NMR (500 MHz, CD_3OD): part a: 5.54 (d, 6.6, H-1), 7.50 (s, H-3), 2.87 (q-shaped m, H-5), 2.00 (m, H-6), 1.81 (dq, 14.0, 6.2, H-6), 4.08 (m, H_2-7), 5.78 (ddd, 17.8, 10.5, 8.2, H-8), 2.67 (q-shaped m, H-9), 5.26 (m, H_2-10), 2.01 (s, Ac), 4.71 (d, 7.8, H-1′), 3.20 (dd, 9.0, 7.8, H-2′), 3.36 (t, 9.0, H-3′), 3.29 (m, H-4′, 5′), 3.66 (dd, 12.0, 6.0, H-6′), 3.90 (dd, 12.0, 2.2, H-6′); part b: 4.91 (br d, 5.8, H-1), 7.45 (m, H-3), 3.09 (q-shaped m, H-5), 2.33 (m, H-6), 1.62 (m, H-6), 5.21 (t-shaped m, H-7), 2.12 (m, H-8), 1.87 (m, H-9), 1.07 (d, 6.6, H_3-10), 3.70 (s, OMe); ^{13}C-NMR (125 MHz, CD_3OD): part a: 97.8 (C-1), 153.7 (C-3), 111.7 (C-4), 31.3 (C-5), 30.1 (C-6), 64.2 (C-7), 135.7 (C-8), 45.3 (C-9), 119.6 (C-10), 168.2 (C-11), 20.8, 173.0 (Ac), 100.1 (C-1′), 74.7 (C-2′), 78.0 (C-3′), 71.6 (C-4′), 78.4 (C-5′), 62.7 (C-6′); part b: 97.0 (C-1), 153.9 (C-3), 111.7 (C-4), 33.7 (C-5), 40.8 (C-6″), 78.2 (C-7), 41.8 (C-8), 48.6 (C-9), 14.4 (C-10), 169.7 (C-11), 51.7 (MeO). *Abelia chinensis* (Caprifoliaceae).[63]

140. 7-*O*-Acetylabelioside B



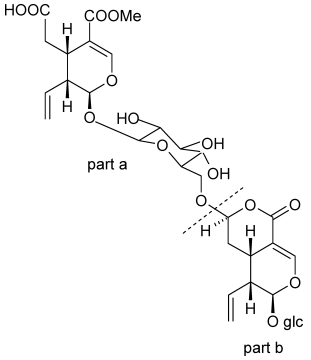
$C_{27}H_{38}O_{13}$: 570.2312; white amorphous powder; $[\alpha]_D^{20}$ −46.2° (c=0.80, MeOH); IR (KBr): 1750, 1700, 1620, 1240; ^{1}H-NMR (500 MHz, CD_3OD): part a: 5.54 (d, 6.6, H-1), 7.46 (s, H-3), 2.85 (q-shaped m, H-5), 2.00 (m, H-6), 1.81 (dq-shaped m, H-6), 4.08 (m, H_2-7), 5.76 (ddd, 17.4, 10.0, 8.5, H-8), 2.66 (q-shaped m, H-9), 5.25 (m, H_2-10), 2.01 (s, Ac), 4.69 (d, 7.8, H-1′), 3.19 (dd, 9.0, 7.8, H-2′), 3.34 (t, 9.0, H-3′), 3.27 (m, H-4′, 5′), 3.90 (dd, 12.0, 2.4, H-6′), 3.66 (dd, 12.0, 6.0, H-6′); part b: 4.41 (dd, 12.0, 4.4, H-1), 4.19 (dd, 12.0, 4.0, H-1), 2.74 (dd, 15.2, 6.8, H-4), 2.37 (dd, 15.2, 4.4, H-4), 2.88 (m, H-5), 2.13 (ddd, 14.4, 8.0, 1.5, H-6), 1.46 (ddd, 14.4, 10.2, 4.0, H-6), 5.21 (sharp m, H-7), 2.04 (m, H-8), 2.22 (m, H-9), 1.03 (d, 6.6, H_3-10); ^{13}C-NMR (125 MHz, CD_3OD): part a: 97.8 (C-1), 153.7 (C-3), 111.6 (C-4), 31.2 (C-5), 30.0 (C-6), 64.1 (C-7), 135.6 (C-8), 45.4 (C-9), 119.6 (C-10), 168.2 (C-11), 20.9, 172.9 (Ac), 100.1 (C-1′), 74.7 (C-2′), 78.1 (C-3′), 71.6 (C-4′), 78.5 (C-5′), 62.8 (C-6′); part b: 69.8 (C-1), 176.3 (C-3), 35.1 (C-4), 34.2 (C-5), 40.0 (C-6), 79.9 (C-7), 41.9 (C-8), 43.9 (C-9), 13.4 (C-10). *Abelia chinensis* (Caprifoliaceae).[63]

141. Korolkoside



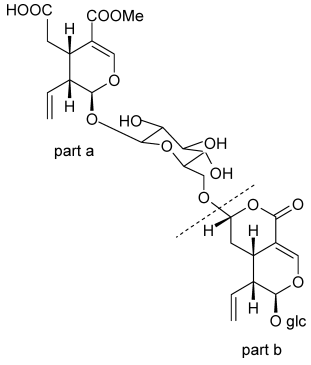
$C_{36}H_{52}O_{20}$: 804.3051; oil; $[\alpha]_D^{28}$ −160.0° (c=0.097, MeOH); ^{1}H-NMR (600 MHz, C_5D_5N): part a: 5.75 (d, 5.5, H-1), 7.68 (br s, H-3), 3.27 (br ddd, 7.8, 6.4, 5.4, H-5), 2.41 (ddd, 14.1, 7.0, 6.4, H-6), 1.87 ((ddd, 14.1, 7.8, 4.4, H-6), 4.70 (dd, 7.0, 4.4, H-7), 5.84 (m, H-8), 2.89 (ddd, 8.3, 5.5, 5.4, H-9), 5.30—5.10 (m, H_2-10), 3.63 (s, MeO-11), 3.27 (s, 2MeO-7), 5.28 (d, 7.9, H-1′), 3.94 (dd, 8.0, 7.9, H-2′), 4.21 (m, H-3′), 4.64 (m, H-4′), 3.58 (m, H-5′), 4.30 (dd, 10.3, 4.8, H-6′), 3.71 (dd, 10.3, 10.3, H-6′); part b: 5.89 (d, 6.4, H-1), 7.64 (br s, H-3), 3.32 (br ddd, 6.8, 5.9, 5.7, H-5), 2.18 (m, H-6), 2.09 (m, H-6), 4.95 (m, H-7), 5.84 (m, H-8), 2.83 (ddd, 7.3, 6.4, 5.7, H-9), 5.30—5.10 (m, H_2-10), 3.59 (s, MeO-11), 5.40 (d, 7.9, H-1′), 4.01 (m, H-2′), 4.23 (m, H-3′), 4.20 (m, H-4′), 4.02 (m, H-5′), 4.55 (br d, 11.1, H-6′), 4.37 (m, H-6′); ^{13}C-NMR (67.8 MHz, C_5D_5N): part a: 97.3 (C-1), 152.2 (C-3), 110.8 (C-4), 28.8 (C-5), 32.6 (C-6), 103.1 (C-7), 135.2 (C-8), 44.7 (C-9), 119.2 (C-10), 167.3 (C-11), 51.0 (MeO-11), 53.1, 51.9 (2×MeO-7), 101.1 (C-1′), 75.1 (C-2′), 75.3 (C-3′), 81.3 (C-4′), 67.4 (C-5′), 68.6 (C-6′); part b: 96.9 (C-1), 152.9 (C-3), 110.4 (C-4), 29.7 (C-5), 35.2 (C-6), 101.9 (C-7), 135.1 (C-8), 44.5 (C-9), 119.0 (C-10), 167.2 (C-11), 50.9 (OMe), 100.5 (C-1′), 74.6 (C-2′), 78.4 (C-3′), 71.4 (C-4′), 79.0 (C-5′), 62.5 (C-6′). *Lonicera korolkovii* (Caprifoliaceae).[64]

142. Adinoside D



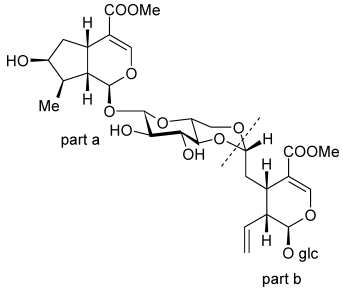
$C_{33}H_{44}O_{20}$: 760.2425; amorphous powder; $[\alpha]_D^{28}$ −137.0° (c=1.0, MeOH); UV (MeOH): 238 (4.24); IR (KBr): 3405, 1701, 1620, 1016; ^{1}H-NMR (500 MHz, CD_3OD): part a: 5.39 (d, 4.0, H-1), 7.45 (d, 2.0, H-3), 3.27—3.40 (m, H-5), 2.23 (dd, 16.5, 9.0, H-6), 2.86 (dd, 16.5, 5.0, H-6), 5.64 (ddd, 17.0, 10.5, 9.0, H-8), 2.81 (ddd, 9.0, 5.5, 4.0, H-9), 5.23 (dd, 10.5, 1.5, H-10), 5.28 (dd, 17.0, 1.5, H-10), 3.68 (s, MeO), 4.65 (d, 8.0, H-1′), 3.19 (dd, 9.0, 8.0, H-2′), 3.27—3.40 (m, H-3′, 4′), 3.43 (m, H-5′), 3.97 (dd, 12.0, 2.0, H-6′), 4.03 (dd, 12.0, 4.0, H-6′); part b: 5.56 (d, 1.5, H-1), 7.61 (d, 2.5, H-3), 3.43 (m, H-5), 1.71 (td, 13.5, 2.5, H-6), 1.92 (ddd, 13.5, 5.0, 1.5, H-6), 5.55 (dd, 2.5, 1.5, H-7), 5.53 (ddd, 17.0, 10.5, 9.5, H-8), 2.66 (ddd, 9.5, 5.5, 1.5, H-9), 5.27 (dd, 10.5, 1.5, H-10), 5.31 (dd, 17.0, 1.5, H-10), 4.70 (d, 8.0, H-1′), 3.23 (dd, 9.0, 8.0, H-2′), 3.27—3.40 (m, H-3′, 4′, 5′), 3.67 (dd, 12.0, 5.5, H-6′), 3.89 (dd, 12.0, 2.0, H-6′); ^{13}C-NMR (125 MHz, CD_3OD): part a: 97.9 (C-1), 153.4 (C-3), 110.5 (C-4), 29.2 (C-5), 36.1 (C-6), 177.3 (C-7), 134.6 (C-8), 45.3 (C-9), 120.5 (C-10), 169.0 (C-11), 51.6 (OMe), 100.3 (C-1′), 74.5 (C-2′)[a], 77.9 (C-3′)[b], 71.0 (C-4′), 76.7 (C-5′), 68.6 (C-6′); part b: 98.4 (C-1), 154.3 (C-3), 105.6 (C-4), 22.9 (C-5), 30.3 (C-6), 102.0 (C-7), 133.3 (C-8), 43.5 (C-9), 121.0 (C-10), 167.4 (C-11), 100.0 (C-1′), 74.6 (C-2′)[a], 78.1 (C-3′)[b], 71.5 (C-4′), 78.4 (C-5′), 62.7 (C-6′). *Adina racemosa* (Rubiaceae).[10]

143. Adinoside E



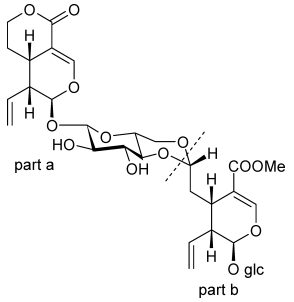
$C_{33}H_{44}O_{20}$: 760.2425; amorphous powder; $[\alpha]_D^{28}$ −181.0° (*c*=1.0, MeOH); UV (MeOH): 237 (4.23); IR (KBr): 3405, 1697, 1624, 1074; ^{1}H-NMR (500 MHz, CD_3OD): part a: 5.35 (d, 4.0, H-1), 7.45 (d, 2.0, H-3), 3.28—3.33 (m, H-5), 2.19 (dd, 16.0, 9.5, H-6), 2.91 (dd, 16.0, 5.0, H-6), 5.64 (ddd, 17.0, 10.5, 9.5, H-8), 2.84 (ddd, 9.5, 5.5, 4.0, H-9), 5.24 (dd, 10.5, 2.0, H-10), 5.30 (dd, 17.0, 2.0, H-10), 3.68 (s, MeO), 4.64 (d, 8.0, H-1′), 3.20 (dd, 9.0, 8.0, H-2′), 3.36 (t, 9.0, H-3′), 3.27 (br t, 9.5, H-4′), 3.49 (ddd, 9.5, 7.0, 2.0, H-5′), 3.78 (dd, 11.5, 7.0, H-6′), 4.26 (dd, 11.5, 2.0, H-6′); part b: 5.56 (d, 1.5, H-1), 7.59 (d, 2.5, H-3), 3.10 (dddd, 13.5, 5.5, 4.0, 2.5, H-5), 1.52 (td, 13.5, 9.5, H-6), 2.02 (ddd, 13.5, 4.0, 2.5, H-6), 5.51 (dd, 9.5, 2.5, H-7), 5.51 (ddd, 17.0, 10.5, 9.5, H-8), 2.66 (ddd, 9.5, 5.5, 1.5, H-9), 5.28 (dd, 10.5, 2.0, H-10), 5.30 (dd, 17.0, 2.0, H-10), 4.67 (d, 8.0, H-1′), 3.21 (dd, 9.0, 8.0, H-2′), 3.36 (t, 9.0, H-3′), 3.27 (br t, 9.5, H-4′), 3.28—3.33 (m, 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, CD_3OD): part a: 97.9 (C-1), 153.3 (C-3), 110.6 (C-4), 28.8 (C-5), 36.1 (C-6), 177.4 (C-7), 134.6 (C-8), 45.2 (C-9), 120.7 (C-10)[a], 168.9 (C-11), 51.6 (OMe), 100.2 (C-1′), 74.5 (C-2′)[b], 77.8 (C-3′)[c], 71.6 (C-4′)[d], 77.1 (C-5′), 70.5 (C-6′); part b: 97.7 (C-1), 154.1 (C-3), 105.1 (C-4), 25.3 (C-5), 31.7 (C-6), 105.2 (C-7), 133.0 (C-8), 43.8 (C-9), 121.2 (C-10)[a], 167.6 (C-11), 99.7 (C-1′), 74.6 (C-2′)[b], 78.0 (C-3′)[a], 71.8 (C-4′)[d], 78.4 (C-5′), 62.7 (C-6′). *Adina racemosa* (Rubiaceae).[10]

144. Caeruleoside A



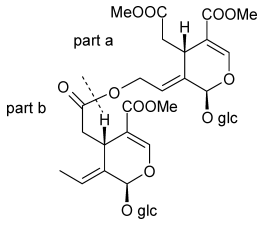
$C_{34}H_{48}O_{19}$: 760.2789; amorphous powder; $[\alpha]_D$ −144.4° (*c*=0.3, MeOH); UV (MeOH): 234 (4.26); IR (KBr): 3387, 2929, 1698, 1635, 1441, 1387, 1293, 1078; ^{1}H-NMR (270 MHz, CD_3OD): part a: 5.10 (d, 4.6, H-1), 7.37 (d, 1.3, H-3), 3.13 (m, H-5), 1.57 (m, H-6), 2.23 (m, H-6), 4.03 (m, H-7), 1.80 (m, H-8), 1.98 (m, H-9), 1.07 (d, 6.6, H_3-10), 3.68 (s, MeO-11), 4.72 (d, 7.9, H-1′), 3.18—3.36 (m, H-2′, 4′, 5′), 3.54 (t, 9.3, H-3′), 3.50 (dd, 10.1, 9.4, H-6′), 4.13 (dd, 10.1, 4.8, H-6′); part b: 5.54 (d, 5.6, H-1), 7.45 (d, 1.0, H-3), 3.02 (m, H-5), 1.78 (m, H-6), 2.01 (m, H-6), 4.70 (m, H-7), 5.73 (ddd, 17.3, 9.7, 8.6, H-8), 2.68 (m, H-9), 5.24 (br d, 9.7, H-10), 5.29 (br d, 17.3, H-10), 3.69 (s, MeO-11), 4.67 (d, 7.6, H-1′), 3.18—3.36 (m, H-2′, 3′, 4′, 5′), 3.62 (dd, 11.9, 6.3, H-6′), 3.89 (dd, 11.9, 1.7, H-6′); ^{13}C-NMR (67.8 MHz, CD_3OD): part a: 98.2 (C-1), 152.1 (C-3), 114.1 (C-4), 32.3 (C-5), 42.9 (C-6), 75.0 (C-7), 42.4 (C-8), 46.5 (C-9), 13.5 (C-10), 169.5 (C-11)[a], 51.7 (OMe)[b], 100.9 (C-1′), 75.5 (C-2′), 74.7 (C-3′), 81.8 (C-4′), 67.9 (C-5′), 69.3 (C-6′); part b: 97.7 (C-1), 153.7 (C-3), 111.5 (C-4), 29.6 (C-5), 35.2 (C-6), 102.7 (C-7), 135.8 (C-8), 45.4 (C-9), 119.8 (C-10), 169.3 (C-11)[a], 51.8 (OMe)[b], 100.0 (C-1′), 74.7 (C-2′), 78.0 (C-3′), 71.7 (C-4′), 78.5 (C-5′), 62.9 (C-6′). *Lonicera caerulea* (Caprifoliaceae).[65]

145. Caeruleoside B



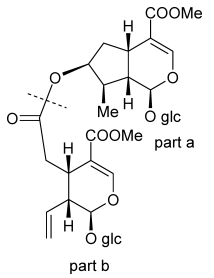
$C_{33}H_{44}O_{18}$: 728.2527; amorphous powder; $[\alpha]_D$ −101.4° (*c*=0.1, MeOH); UV (MeOH): 234 (4.12); ^{1}H-NMR (270 MHz, CD_3OD): part a: 5.39 (d, 1.7, H-1), 7.58 (d, 2.3, H-3), 3.20 (m, H-5), 1.78 (m, H_2-6), 4.39 (m, H_2-7), 5.53 (m, H-8), 2.68 (m, H-9), 5.28 (m, H_2-10), 4.76 (d, 7.9, H-1′), 3.10—3.40 (m, H-2′, 4′, 5′), 3.53 (m, H-3′, 6′), 4.14 (dd, 10.2, 4.6, H-6′); part b: 5.54 (d, 5.9, H-1), 7.45 (s, H-3), 3.03 (m, H-5), 1.80 (m, H-6), 2.02 (m, H-6), 4.70 (m, H-7), 5.73 (m, H-8), 2.68 (m, H-9), 5.28 (m, H_2-10), 3.70 (s, MeO-11), 4.67 (d, 7.9, H-1′), 3.10—3.40 (m, H-2′, 3′, 4′, 5′), 3.64 (dd, 11.9, 5.9, H-6′), 3.89 (m, H-6′); ^{13}C-NMR (67.8 MHz, CD_3OD): part a: 98.2 (C-1), 153.7 (C-3), 106.1 (C-4), 28.5 (C-5), 26.4 (C-6), 69.8 (C-7), 133.3 (C-8), 44.0 (C-9), 121.0 (C-10), 168.3 (C-11), 100.4 (C-1′), 75.4 (C-2′), 74.6 (C-3′), 81.8 (C-4′), 68.0 (C-5′), 69.2 (C-6′); part b: 97.7 (C-1), 153.9 (C-3), 111.5 (C-4), 29.6 (C-5), 35.2 (C-6), 102.7 (C-7), 135.8 (C-8), 45.4 (C-9), 119.8 (C-10), 169.3 (C-11), 51.8 (OMe), 100.0 (C-1′), 74.7 (C-2′), 78.0 (C-3′), 71.7 (C-4′), 78.5 (C-5′), 62.9 (C-6′). *Lonicera caerulea* (Caprifoliaceae).[65]

146. Jaspolyanthoside



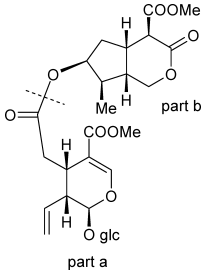
$C_{35}H_{48}O_{22}$: 820.2636; crystals, mp 127—130 °C (MeOH–H_2O); $[\alpha]_D^{22}$ −197.0° (*c*=1.03, MeOH); UV (MeOH): 236 (4.33); IR (KBr): 3427, 1733, 1715, 1634, 1074, 816; ^{1}H-NMR (500 MHz, CD_3OD): part a: 5.99 (br s, H-1), 7.54 (s, H-3), 4.01 (dd, 9.0, 4.5, H-5), 2.50 (dd, 15.0, 9.0, H-6), 2.80 (dd, 15.0, 4.5, H-6), 6.10 (ddd, 7.0, 6.0, 1.0, H-8), 4.73 (ddd, 13.5, 6.0, 2.0, H-10), 4.82 (br dd, 13.5, 7.0, H-10), 3.66, 3.71 (each s, 2×OMe), 4.81 (d, 8.0, H-1′), 3.25—3.44 (m, H-2′, 3′, 4′, 5′), 3.66—3.72 (m, H-6′), 3.90 (dd, 12.0, 2.0, H-6′); part b: 5.93 (br s, H-1), 7.52 (s, H-3), 4.00 (dd, 9.0, 4.5, H-5), 2.46 (dd, 14.5, 9.0, H-6), 2.76 (dd, 14.5, 4.5, H-6), 6.12 (qd, 7.0, 1.0, H-8), 1.73 (dd, 7.0, 1.5, H_3-10), 3.72 (s, OMe), 4.82 (d, 7.5, H-1′), 3.25—3.44 (m, H-2′, 3′, 4′, 5′), 3.67 (dd, 12.0, 5.0, H-6′), 3.88 (br d, 12.0, H-6′); ^{13}C-NMR (125 MHz, CD_3OD): part a: 94.3 (C-1), 155.0 (C-3), 109.1 (C-4), 32.5 (C-5), 40.8 (C-6), 173.4 (C-7), 124.4 (C-8), 134.0 (C-9), 62.1 (C-10), 168.3 (C-11), 52.0, 52.4 (2×OMe), 101.0 (C-1′), 74.7 (C-2′), 78.0 (C-3′), 71.4 (C-4′), 78.4 (C-5′), 62.8 (C-6′); part b: 95.3 (C-1), 155.2 (C-3), 109.4 (C-4), 31.9 (C-5), 41.2 (C-6), 172.8 (C-7), 125.1 (C-8), 130.4 (C-9), 13.8 (C-10), 168.7 (C-11), 52.0 (OMe), 101.0 (C-1′), 74.7 (C-2′), 78.0 (C-3′), 71.5 (C-4′), 78.5 (C-5′), 62.8 (C-6′). *Jasminum polyanthum* (Oleaceae).[58]

147. Tricoloroside methyl ester



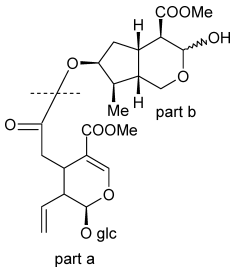
$C_{34}H_{48}O_{20}$: 776.2738; amorphous powder; $[\alpha]_D^{20}$ −101.0° (*c*=0.078, MeOH); UV (MeOH): 232 (4.28); IR (KBr): 1700, 1640, 1440, 1380, 1280, 1060; ^{1}H-NMR (500 MHz, CD_3OD): part a: 5.27 (d, 4.2, H-1), 7.42 (d, 1.3, H-3), 3.09 (m, H-5), 1.71 (m, H-6), 2.35 (m, H-6), 5.13 (m, H-7), 2.12 (m, H-8), 2.07 (m, H-9), 1.06 (d, 6.4, H_3-10), 3.68 (s, OMe), 4.65 (d, 7.7, H-1′), 3.21 (m, H-2′), 3.29—3.38 (overlapped with solvent signal, H-3′, 4′, 5′), 3.67 (m, H-6′), 3.87 (dd, 12.0, 1.7, H-6′); part b: 5.49 (d, 3.9, H-1), 7.48 (d, 2.1, H-3), 3.31 (m, H-5), 2.37 (m, H-6), 2.98 (dd, 16.7, 4.5, H-6), 5.64 (m, H-8), 2.78 (m, H-9), 5.26 (m, H_2-10), 3.69 (s, OMe), 4.65 (d, 7.7, H-1′), 3.22 (m, H-2′), 3.29—3.38 (overlapped, H-3′, 4′, 5′), 3.68 (m, H-6′), 3.90 (dd, 12.0, 1.7, H-6′); ^{13}C-NMR (125 MHz, CD_3OD): part a: 97.6 (C-1), 152.5 (C-3), 113.3 (C-4), 32.6 (C-5), 40.4 (C-6), 78.9 (C-7), 40.9 (C-8), 47.0 (C-9), 13.8 (C-10), 169.3 (C-11)[a], 51.8 (OMe), 100.2 (C-1′)[b], 74.7 (C-2′), 78.0 (C-3′), 71.6 (C-4′), 78.4 (C-5′), 62.8 (C-6′); part b: 97.5 (C-1), 153.7 (C-3), 109.9 (C-4), 28.8 (C-5), 35.5 (C-6), 173.8 (C-7), 134.5 (C-8), 45.4 (C-9), 120.8 (C-10), 168.8 (C-11)[a], 51.8 (OMe), 99.9 (C-1′)[b], 74.7 (C-2′), 78.0 (C-3′), 71.6 (C-4′), 78.4 (C-5′), 62.8 (C-6′). *Loasa acerifolia* (Loasaceae).[66]

148. Asaolaside



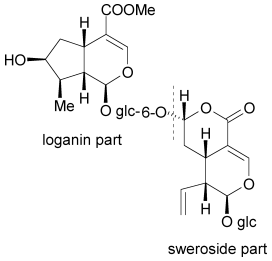
$C_{28}H_{38}O_{15}$: 614.2210; amorphous powder; $[\alpha]_D^{20}$ −44.8° (c=0.0625, MeOH); UV (MeOH): 232 (4.0); IR (KBr): 1730, 1700, 1640, 1440, 1280, 1070; ^{1}H-NMR (400 MHz, CD_3OD): part a: 5.48 (d, 4.0, H-1), 7.49 (d, 1.7, H-3), 3.35 (m, H-5), 2.37 (dd, 16.0, 9.0, H-6), 2.89 (dd, 16.6, 5.3, H-6), 5.64 (m, H-8), 2.75 (m, H-9), 5.25 (m, H_2-10), 4.66 (d, 7.8, H-1′), 3.21 (m, H-2′), 3.26—3.40 (overlapped by solvent, H-3′, 4′, 5′), 3.89 (m, H-6′), 3.65—3.75 (m, H-6′); part b: 4.16 (dd, 11.6, 9.2, H-1), 4.43 (dd, 11.6, 5.9, H-1), 3.65—3.75 (m, H-4, OMe), 3.05 (m, H-5), 1.58 (m, H-6), 2.21 (m, H-6), 5.17 (m, H-7), 2.02 (m, H-8), 2.35 (m, H-9), 1.02 (d, 6.8, H_3-10), 3.78 (s, OMe); ^{13}C-NMR (100 MHz, CD_3OD): part a: 97.5 (C-1), 153.7 (C-3), 109.9 (C-4), 28.8 (C-5), 35.6 (C-6), 173.8 (C-7), 134.5 (C-8), 45.6 (C-9), 120.7 (C-10), 168.8 (C-11), 51.7 (OMe), 100.0 (C-1′), 74.6 (C-2′), 78.0 (C-3′), 71.6 (C-4′), 78.4 (C-5′), 62.8 (C-6′); part b: 70.8 (C-1), 172.0 (C-3), 53.1 (C-4), 37.7 (C-5), 39.0 (C-6), 80.7 (C-7), 42.2 (C-8), 43.3 (C-9), 13.4 (C-10), 170.3 (C-11), 53.1 (OMe). *Loasa acerifolia* (Loasaceae).[67]

149. Loasafolioside



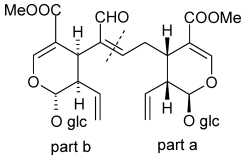
$C_{28}H_{40}O_{15}$: 616.2367; exists as an isomeric mixture (5 : 1) of 3α/3β-OH of part b; white amorphous powder; $[\alpha]_D^{20}$ −23.5° (c=0.00425, MeOH); UV (MeOH): 232 (3.72); IR (KBr): 1700, 1640, 1440, 1280, 1070; ^{1}H-NMR (400 MHz, CD_3OD): part a: 5.48 (d, 4.0, H-1), 7.48 (d, 1.1, H-3), 3.30 (m, H-5), 2.32 (dd, 16.5, 8.7, H-6), 2.89 (dd, 16.5, 4.9, H-6), 5.63 (m, H-8), 2.76 (m, H-9), 5.26 (m, H_2-10), 3.66 (s, MeO-11), 4.66 (d, 7.8, H-1′), 3.21 (m, H-2′), 3.26—3.40 (overlapped by solvent, H-3′, 4′, 5′), 3.65 (m, H-6′), 3.89 (m, H-6′); part b: 3.87 (m, H_2-1), 4.72 (d, 8.4, H-3), 2.22 (dd, 11.8, 8.4, H-4), 2.47 (m, H-5), 1.86 (m, H-6), 1.96 (m, H-6), 5.23 (m, H-7), 2.13 (m, H-8), 1.75 (m, H-9), 0.97 (d, 6.7, H_3-10), 3.70 (s, MeO-11); ^{13}C-NMR (100 MHz, CD_3OD): major part a: 97.6 (C-1), 153.7 (C-3), 109.9 (C-4), 28.8 (C-5), 35.5 (C-6), 173.8 (C-7), 134.5 (C-8), 45.4 (C-9), 120.6 (C-10), 168.7 (C-11), 51.7 (OMe), 100.0 (C-1′), 74.6 (C-2′), 78.0 (C-3′), 71.6 (C-4′), 78.4 (C-5′), 62.8 (C-6′); part b: 64.8 (C-1), 97.0 (C-3), 54.0 (C-4), 39.8 (C-5), 38.3 (C-6), 78.8 (C-7), 38.6 (C-8), 44.2 (C-9), 12.3 (C-10), 175.1 (C-11), 52.3 (OMe); minor part b: 57.9 (C-1), 91.8 (C-3), C-4 (obscured), 32.3 (C-5), 40.2 (C-6), 78.7 (C-7), 38.4 (C-8), 43.6 (C-9), 12.5 (C-10), 173.6 (C-11), 52.2 (OMe). *Loasa acerifolia* (Loasaceae).[68]

150. 6′-*O*-(7α-Hydroxyswerosyloxy)-loganin



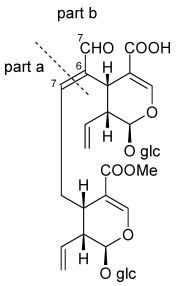
$C_{33}H_{46}O_{19}$: 746.2632; amorphous powder; $[\alpha]_D^{26}$ −150.7° (c=0.146, MeOH); UV (MeOH): 236 (4.23); ^{1}H-NMR (600 MHz, CD_3OD): loganin part: 5.12 (d, 4.8, H-1), 7.40 (d, 1.1, H-3), 3.11 (m, H-5), 2.25 (br dd, 13.9, 7.7, H-6), 1.55 (m, H-6), 4.05 (m, H-7), 1.87 (m, H-8), 2.01 (m, H-9), 1.09 (d, 7.0, H_3-10), 3.69 (s, MeO-11), 4.65 (d, 7.7, H-1′), 3.49 (ddd, 9.9, 7.0, 1.8, H-5′), 3.78 (dd, 11.4, 7.0, H-6′), 4.26 (dd, 11.4, 1.8, H-6′); sweroside part: 5.56 (d, 1.8, H-1), 7.59 (d, 2.6, H-3), 3.09 (m, H-5), 2.01 (br dd, 9.7, 5.9, H_β-6), 1.55 (m, H_α-6), 5.48 (dd, 9.7, 2.6, H-7), 5.51 (ddd, 17.6, 10.3, 9.7, H-8), 2.66 (br dd, 9.7, 5.9, H-9), 5.30 (br d, 17.6, H-10), 5.28 (dd, 10.3, 1.8, H-10), 4.67 (d, 8.1, H-1′), 3.66 (dd, 11.7, 5.9, H-6′), 3.89 (dd, 11.7, 1.9, H-6′); ^{13}C-NMR (150 MHz, CD_3OD): loganin part: 98.4 (C-1), 152.3 (C-3), 114.0 (C-4), 32.4 (C-5), 43.0 (C-6), 75.0 (C-7), 42.4 (C-8), 46.6 (C-9), 13.7 (C-10), 169.5 (C-11), 51.7 (OMe), 100.5 (C-1′), 74.7 (C-2′), 78.1 (C-3′), 71.8 (C-4′), 77.0 (C-5′), 70.6 (C-6′); sweroside part: 98.0 (C-1), 154.2 (C-3), 105.1 (C-4, 7), 25.3 (C-5), 31.8 (C-6), 133.1 (C-8), 43.9 (C-9), 121.2 (C-10), 167.6 (C-11), 99.8 (C-1′), 74.7 (C-2′), 78.1 (C-3′), 71.6 (C-4′), 78.5 (C-5′), 62.7 (C-6′). *Lonicera japonica* (Caprifoliaceae).[30]

151. (*Z*)-Aldosecologanin



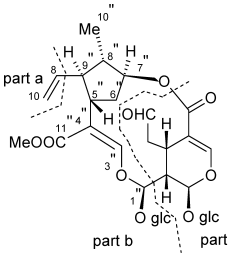
$C_{34}H_{46}O_{19}$: 758.2632; amorphous powder; $[\alpha]_D^{26}$ −164.3° (c=0.141, MeOH); UV (MeOH): 232 (4.06); ^{1}H-NMR (600 MHz, CD_3OD): part a: 5.50 (d, 5.1, H-1), 7.48 (d, 1.1, H-3), 2.95 (m, H-5), 2.57 (m, H-6), 3.26 (m, H-6), 6.31 (dd, 8.4, 8.1, H-7), 5.73 (ddd, 17.2, 10.3, 9.2, H-8), 2.61 (ddd, 9.2, 5.1, 4.4, H-9), 5.26 (dd, 10.3, 1.8, H-10), 5.29 (br d, 17.2, H-10), 3.70 (s, MeO-11), 4.66 (d, 8.1, H-1′), 3.17 (dd, 9.2, 8.1, H-2′), 3.25—3.36 (m, H-3′, 4′, 5′), 3.67 (br d, 12.9, H-6′), 3.88 (br d, 12.9, H-6′); part b: 5.42 (d, 5.9, H-1), 7.61 (d, 1.5, H-3), 4.08 (br d, 5.5, H-5), 10.03 (s, H-7), 5.42 (m, H-8), 2.67 (ddd, 9.2, 5.9, 5.5, H-9), 5.07 (dd, 10.6, 1.5, H-10), 5.10 (br d, 17.2, H-10), 3.66 (s, MeO-11), 4.69 (d, 8.1, H-1′), 3.20 (dd, 9.2, 8.1, H-2′), 3.25—3.36 (m, H-3′, 4′, 5′), 3.65 (br d, 12.9, H-6′), 3.87 (br d, 12.9, H-6); ^{13}C-NMR (150 MHz, CD_3OD): part a: 97.7 (C-1), 153.9 (C-3), 110.3 (C-4), 34.0 (C-5), 27.2 (C-6), 150.7 (C-7), 135.6 (C-8)[a], 45.2 (C-9), 120.5 (C-10), 168.9 (C-11), 52.1 (OMe)[b], 100.3 (C-1′), 74.7 (C-2′), 78.1 (C-3′), 71.6 (C-4′)[c], 78.4 (C-5′), 62.8 (C-6′)[d]; part b: 97.5 (C-1), 154.5 (C-3), 110.0 (C-4), 34.0 (C-5), 141.0 (C-6), 192.0 (C-7), 135.2 (C-8)[a], 45.8 (C-9), 119.6 (C-10), 168.7 (C-11), 51.9 (OMe)[b], 100.0 (C-1′), 74.7 (C-2′), 78.1 (C-3′), 71.5 (C-4′)[c], 78.4 (C-5′), 62.7 (C-6′)[d]. *Lonicera japonica* (Caprifoliaceae).[30]

152. Strychoside A



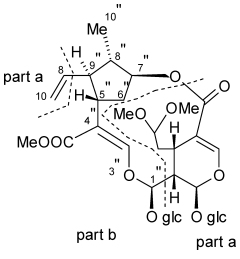
$C_{33}H_{44}O_{19}$: 744.2476; amorphous powder; $[\alpha]_D^{21}$ −131.0° (c=1.0, MeOH); UV (MeOH): 233 (4.35); IR (KBr): 3379, 1690, 1636; ^{1}H-NMR (500 MHz, CD_3OD): part a: 5.56 (br d, 5.5, H-1), 7.54 (br s, H-3), 3.04—3.15 (m, H-5), 2.44 (br dq, 15.0, 7.5, H-6), 3.04—3.15 (m, H-6), 6.68 (br t, 7.0, H-7), 5.77 (m, H-8), 2.76 (br dt, 8.5, 5.5, H-9), 5.28 (br d, 10.0, H-10), 5.34 (br d, 17.0, H-10), 3.72 (s, MeO-11), 4.68 (d, 8.0, H-1′), 3.19 (dd, 9.0, 8.0, H-2′)[a], 3.25—3.39 (m, H-3′, 4′, 5′), 3.68 (br d, 12.0, H-6′), 3.88 (br d, 12.0, H-6′); part b: 5.47 (d, 3.5, H-1), 7.46 (d, 1.5, H-3), 4.04 (m, H-5), 9.23 (s, H-7), 5.62 (dt, 17.0, 10.0, H-8), 2.60 (m, H-9), 5.02 (br d, 10.0, H-10), 5.06 (br d, 17.0, H-10), 4.68 (d, 8.0, H-1′), 3.25 (dd, 9.0, 8.0, H-2′)[a], 3.25—3.39 (m, H-3′, 4′, 5′), 3.68 (br d, 12.0, H-6′), 3.88 (br d, 12.0, H-6′); ^{13}C-NMR (125 MHz, CD_3OD): part a: 97.6 (C-1), 154.2 (C-3), 110.5 (C-4), 33.8 (C-5), 29.6 (C-6), 156.2 (C-7), 135.8 (C-8), 45.4 (C-9), 120.3 (C-10), 169.0 (C-11), 52.0 (MeO), 99.8 (C-1′)[a], 74.6 (C-2′)[b], 77.9 (C-3′)[c], 71.5 (C-4′)[d], 78.3 (C-5′), 62.6 (C-6′)[e]; part b: 97.3 (C-1), 151.9 (C-3), 109.9 (C-4), 31.2 (C-5), 143.3 (C-6), 196.9 (C-7), 135.5 (C-8), 46.5 (C-9), 119.2 (C-10), 171.0 (C-11), 100.1 (C-1′)[a], 74.7 (C-2′)[b], 78.0 (C-3′)[c], 71.6 (C-4′)[d], 78.3 (C-5′), 62.7 (C-6′)[e]. *Strychnos spinosa* (Loganiaceae).[24]

153. Rapulaside A



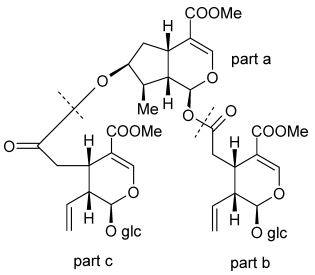
$C_{33}H_{46}O_{19}$: 746.2632; pale yellow amorphous powder; $[\alpha]_D^{23.4}$ −69.2° (c=0.2, MeOH); UV (MeOH): 198 (3.97), 235 (4.20), 389 (1.90); IR (KBr): 3426—2922, 1701, 1631, 1439, 1385, 1287, 1154, 1074, 768, 575; ^{1}H-NMR (500 MHz, C_5D_5N): part a: 5.82 (d, 4.6, H-1), 7.73 (s, H-3), 3.64—3.72 (m, H-5), 2.40—2.49 (m, H-6), 2.81—2.90 (m, H-6), 9.79 (t, 4.4, H-7), 5.67—5.71 (m, H-8), 2.86—2.89 (m, H-9), 5.08 (overlapped by H_2O signal, H_2-10), 5.40 (d, 7.8, H-1′), 4.13—4.19 (m, H-2′), 4.22—4.29 (m, H-3′), 4.28 (overlapped, H-4′), 4.03 (overlapped, H-5′), 4.40 (overlapped, H-6′), 4.56 (d, 11.0, H-6′); part b: 5.66 (d, 4.0, H-1), 7.64 (s, H-3), 3.17—3.25 (m, H-5), 1.74—1.82 (m, H_α-6), 2.31—2.39 (m, H_b-6), 5.18—5.24 (m, H-7), 2.04—2.12 (m, H-8), 2.23—2.31 (m, H-9), 0.89 (d, 6.8, H_3-10), 5.36 (d, 7.9, H-1′), 4.11—4.17 (m, H-2′), 4.20—4.26 (m, H-3′), 4.28 (overlapped, H-4′), 4.03 (overlapped, H-5′), 4.40 (overlapped, H-6′), 4.56 (d, 11.0, H-6′); ^{13}C-NMR (125 MHz, C_5D_5N): part a: 97.0 (C-1), 153.0 (C-3), 109.3 (C-4), 27.2 (C-5), 44.6 (C-6), 200.9 (C-7), 134.2 (C-8), 44.8 (C-9), 120.0 (C-10), 166.5 (C-11), 100.7, (C-1′), 74.9 (C-2′), 79.1 (C-3′)[a], 71.6 (C-4′), 78.6 (C-5′)[b], 62.7 (C-6′); part b: 96.5 (C-1), 151.5 (C-3), 112.5 (C-4), 31.4 (C-5), 39.6 (C-6), 77.1 (C-7), 39.9 (C-8), 46.5 (C-9), 13.2 (C-10), 167.4 (C-11), 51.0 (OMe), 100.9 (C-1′), 74.7 (C-2′), 79.0 (C-3′)[a], 71.4 (C-4′), 78.5 (C-5′)[b], 62.7 (C-6′). *Heracleum rapula* (Umbelliferae).[69]

154. Rapulaside B



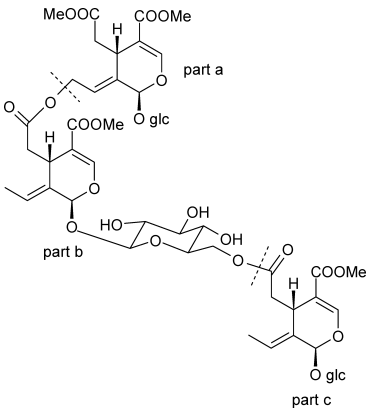
$C_{35}H_{52}O_{20}$: 792.3051; pale yellow amorphous powder; $[\alpha]_D^{25.2}$ −50.4° (c=0.4, MeOH); UV (MeOH): 203 (4.10), 234 (4.17), 393 (1.70); IR (KBr): 3424, 2931, 1701, 1633, 1440, 1384, 1289, 1155, 1074, 767, 633, 575; ^{1}H-NMR (500 MHz, C_5D_5N): part a: 5.89 (d, 4.7, H-1), 7.72 (s, H-3), 3.21—3.29 (m, H-5), 1.77—1.85 (m, H-6), 2.27—2.35 (m, H-6), 4.69 (t, 5.6, H-7), 5.68—5.72 (m, H-8), 2.83—2.88 (m, H-9), 5.10 (overlapped by H_2O, H_2-10), 3.27, 3.28 (each s, 2×OMe), 5.39 (d, 7.9, H-1′), 4.13—4.19 (m, H-2′), 4.22—4.28 (m, H-3′), 4.28 (overlapped, H-4′), 4.02 (overlapped, H-5′), 4.39 (overlapped, H-6′), 4.54 (d, 11.1, H-6′); part b: 5.67 (d, 3.9, H-1), 7.67 (s, H-3), 3.19—3.27 (m, H-5), 1.76—1.84 (m, H-6), 2.37—2.45 (m, H-6), 5.20—5.26 (m, H-7), 2.05—2.13 (m, H-8), 2.24—2.31 (m, H-9), 0.91 (d, 6.7, H_3-10), 3.54 (s, MeO-11), 5.33 (d, 7.8, H-1′), 4.10—4.16 (m, H-2′), 4.20—4.26 (m, H-3′), 4.28 (overlapped, H-4′), 4.02 (overlapped, H-5′), 4.39 (overlapped, H-6′), 4.54 (d, 11.1, H-6′); ^{13}C-NMR (125 MHz, C_5D_5N): part a: 97.3 (C-1), 152.4 (C-3), 111.2 (C-4), 29.2 (C-5), 32.9 (C-6), 103.2 (C-7), 135.4 (C-8), 44.7 (C-9), 119.2 (C-10), 166.7 (C-11), 52.2, 53.2 (2×OMe), 100.8 (C-1′), 74.9 (C-2′), 79.1 (C-3′), 71.5 (C-4′), 78.6 (C-5′), 62.7 (C-6′); part b: 96.4 (C-1), 151.5 (C-3), 112.7 (C-4), 32.9 (C-5), 39.7 (C-6), 77.0 (C-7), 39.9 (C-8), 46.6 (C-9), 13.2 (C-10), 167.5 (C-11), 53.2 (OMe), 100.8 (C-1′), 74.6 (C-2′), 79.1 (C-3′), 71.3 (C-4′), 78.6 (C-5′), 62.7 (C-6′). *Heracleum rapula* (Umbelliferae).[69]

155. Acerifolioside



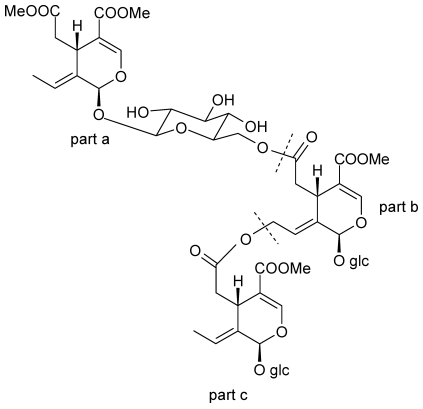
$C_{45}H_{60}O_{25}$: 1000.3423; amorphous powder; $[\alpha]_D^{20}$ −150.0° (c=0.119, MeOH); UV (MeOH): 232 (4.50); IR (KBr): 1700, 1640, 1440, 1380, 1280, 1060; ^{1}H-NMR (500 MHz, CD_3OD): part a: 6.08 (d, 3.9, H-1), 7.35 (d, 0.9, H-3), 3.08 (m, H-5), 1.81 (m, H-6), 2.35 (m, H-6), 5.13 (m, H-7), 2.04 (m, H-8), 2.18 (m, H-9), 1.07 (d, 6.8, H_3-10), 3.72 (s, OMe); part b: 5.46 (d, 4.3, H-1), 7.47 (d, 1.7, H-3), 3.38 (m, H-5), 2.40 (m, H-6), 2.90 (m, H-6), 5.65 (m, H-8), 2.77 (m, H-9), 5.26 (m, H_2-10), 3.67 (s, OMe), 4.65 (d, 8.1, H-1′), 3.21 (m, H-2′), 3.29—3.38 (m, H-3′, 4′, 5′), 3.65 (m, H-6′), 3.90 (dd, 12.0, 1.7, H-6′); part c: 5.49 (d, 4.3, H-1), 7.48 (d, 1.7, H-3), 3.38 (m, H-5), 2.40 (m, H-6), 2.90 (m, H-6), 5.65 (m, H-8), 2.77 (m, H-9), 5.26 (m, H_2-10), 3.68 (s, OMe), 4.66 (d, 8.1, H-1′), 3.22 (m, H-2′), 3.29—3.38 (m, overlapped with solvent signal, H-3′, 4′, 5′), 3.66 (m, H-6′), 3.91 (dd, 12.0, 1.7, H-6′); ^{13}C-NMR (125 MHz, CD_3OD): part a: 92.4 (C-1), 151.6 (C-3), 114.0 (C-4), 31.6 (C-5), 40.2 (C-6), 78.8 (C-7), 40.5 (C-8), 46.2 (C-9), 13.2 (C-10), 168.8 (C-11), 52.0 (OMe); part b: 97.4 (C-1), 153.8 (C-3), 109.9 (C-4), 29.0 (C-5), 35.5 (C-6), 173.7 (C-7), 134.5 (C-8), 45.5 (C-9), 120.8 (C-10), 168.7 (C-11), 51.8 (OMe), 100.0 (C-1′), 74.6 (C-2′), 77.9 (C-3′), 71.5 (C-4′), 78.3 (C-5′), 62.8 (C-6′); part c: 97.4 (C-1), 153.7 (C-3), 109.5 (C-4), 29.0 (C-5), 35.4 (C-6), 172.6 (C-7), 134.4 (C-8), 45.3 (C-9), 120.8 (C-10), 168.7 (C-11), 51.8 (OMe), 99.5 (C-1′), 74.6 (C-2′), 77.9 (C-3′), 71.5 (C-4′), 78.3 (C-5′), 62.8 (C-6′). *Loasa acerifolia* (Loasaceae).[66]

156. Oleopolyanthoside A



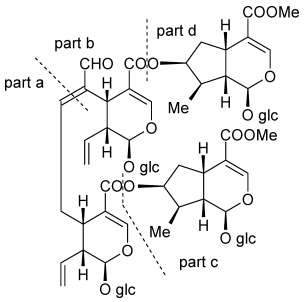
$C_{52}H_{70}O_{32}$: 1206.3849; colorless amorphous powder; $[\alpha]_D^{27}$ −151.0° (c=0.48, MeOH); UV (MeOH): 236.5 (4.36); IR (KBr): 3401, 1732, 1705, 1632, 1077, 818; ^{1}H-NMR (500 MHz, CD_3OD): part a: 5.97 (br s, H-1), 7.51 (s, H-3), 4.00 (dd, 9.5, 4.5, H-6), 2.79 (dd, 15.0, 4.5, H-6), 6.05 (ddd, 7.0, 5.5, 1.0, H-8), 4.71 (ddd, 13.5, 5.5, 1.0, H-10), 4.78 (dd, 13.5, 7.0, H-10), 3.67, 3.69 (each s, 2×OMe)[a], 4.81 (d, 7.5, H-1′), 3.30—3.44 (m, H-2′, 3′, 4′, 5′), 3.68 (dd, 11.5, 6.0, H-6′), 3.89 (dd, 11.5, 1.5, H-6′); part b: 5.92 (br s, H-1), 7.53 (s, H-3), 3.99 (dd, 9.5, 4.5, H-5), 2.43 (dd, 14.5, 9.5, H-6), 2.73 (dd, 14.5, 4.5, H-6), 6.10 (qd, 7.0, 1.5, H-8), 1.73 (br d, 7.0, H_3-10), 3.71 (s, OMe)[a], 4.81 (d, 7.5, H-1′), 3.30—3.44 (m, H-2′, 3′, 4′), 3.55 (ddd, 9.0, 6.0, 1.5, H-5′), 4.20 (dd, 11.5, 6.0, H-6′), 4.34 (dd, 11.5, 1.5, H-6′); part c: 5.86 (br s, H-1), 7.54 (s, H-3), 3.99 (dd, 9.5, 4.5, H-5), 2.48 (dd, 14.0, 9.5, H-6), 2.76 (dd, 14.0, 4.5, H-6), 6.12 (qd, 7.0, 1.5, H-8), 1.73 (br d, 7.0, H_3-10), 3.72 (s, OMe)[a], 4.82 (d, 7.5, H-1′), 3.30—3.44 (m, H-2′, 3′, 4′, 5′), 3.65 (dd, 11.5, 6.0, H-6′), 3.90 (dd, 11.5, 1.5, H-6′); ^{13}C-NMR (125 MHz, CD_3OD): part a: 94.5 (C-1), 155.0 (C-3), 109.5 (C-4), 32.5 (C-5), 40.9 (C-6), 173.4 (C-7), 124.5 (C-8), 134.0 (C-9), 62.1 (C-10), 168.4 (C-11), 52.0 (OMe), 101.1 (C-1′), 74.6 (C-2′), 77.9 (C-3′), 71.5 (C-4′), 78.4 (C-5′), 62.8 (C-6′); part b: 95.2 (C-1), 155.4 (C-3), 109.2 (C-4), 31.9 (C-5), 41.6 (C-6), 172.6 (C-7), 125.0 (C-8), 130.4 (C-9), 13.9 (C-10), 168.7 (C-11), 52.1 (OMe), 101.0 (C-1′), 74.8 (C-2′), 78.0 (C-3′), 71.5 (C-4′), 75.5 (C-5′), 65.1 (C-6′); part c: 95.4 (C-1), 155.2 (C-3), 109.5 (C-4), 31.9 (C-5), 41.3 (C-6), 173.1 (C-7), 124.3 (C-8), 130.6 (C-9), 13.9 (C-10), 168.7 (C-11), 52.1 (OMe), 101.1, (C-1′), 74.8 (C-2′), 78.0 (C-3′), 71.5 (C-4′), 78.6 (C-5′), 62.8 (C-6′). *Jasminum polyanthum* (Oleaceae).[60]

157. Oleopolyanthoside B



$C_{52}H_{70}O_{32}$: 1206.3849; colorless amorphous powder; $[\alpha]_D^{27}$ −185.0° (c=0.86, MeOH); UV (MeOH): 236 (4.43); IR (KBr): 3349, 1734, 1705, 1634, 1076, 818; ^{1}H-NMR (500 MHz, CD_3OD): part a: 5.91 (br s, H-1), 7.51 (s, H-3), 3.98 (dd, 9.5, 4.5, H-5), 2.46 (dd, 14.0, 9.5, H-6), 2.78 (dd, 14.0, 4.5, H-6), 6.09 (qd, 7.0, 1.5, H-8), 1.73 (dd, 7.0, 1.5, H_3-10), 3.69, 3.64 (each s, 2×OMe), 4.80 (d, 8.0, H-1′), 3.30—3.44 (m, H-2′, 3′, 4′), 3.55 (ddd, 9.0, 5.5, 1.5, H-5′), 4.24 (dd, 12.0, 5.5, H-6′), 4.32 (dd, 12.0, 1.5, H-6′); part b: 5.88 (br s, H-1), 7.55 (s, H-3), 4.02 (dd, 9.5, 4.5, H-5), 2.49 (dd, 14.5, 9.5, H-6), 2.80 (dd, 14.5, 4.5, H-6), 6.08 (ddd, 7.0, 6.0, 1.0, H-8), 4.74 (ddd, 13.5, 6.0, 1.0, H-10), 4.81 (dd, 13.5, 7.0, H-10), 3.71 (s, OMe), 4.84 (d, 8.0, H-1′), 3.30—3.44 (m, H-2′, 3′, 4′, 5′), 3.66 (dd, 11.5, 6.0, H-6′)[a], 3.89 (dd, 11.5, 1.5, H-6′)[b]; part c: 5.93 (br s, H-1), 7.51 (s, H-3), 4.04 (dd, 9.5, 4.5, H-5), 2.44 (dd, 14.0, 9.5, H-6), 2.75 (dd, 14.0, 4.5, H-6), 6.12 (qd, 7.0, 1.5, H-8), 1.71 (dd, 7.0, 1.5, H_3-10), 3.72 (s, OMe), 4.81 (d, 8.0, H-1′), 3.30—3.44 (m, H-2′, 3′, 4′, 5′), 3.68 (dd, 11.5, 6.0, H-6′)[a], 3.88 (dd, 11.5, 1.5, H-6′)[b]; ^{13}C-NMR (125 MHz, CD_3OD): part a: 95.2 (C-1), 155.2 (C-3)[a], 109.4 (C-4)[b], 31.9 (C-5), 41.5 (C-6), 173.0 (C-7), 124.9 (C-8), 130.6 (C-9), 13.9 (C-10), 168.7 (C-11)[c], 52.1 (OMe), 101.0 (C-1′), 74.6 (C-2′)[c], 77.8 (C-3′), 71.3 (C-4′)[f], 75.5 (C-5′), 64.8 (C-6′); part b: 94.6 (C-1), 155.0 (C-3), 109.2 (C-4), 32.5 (C-5), 41.2 (C-6), 173.2 (C-7), 124.7 (C-8), 133.8 (C-9), 62.1 (C-10), 168.7 (C-11), 52.1 (OMe), 101.2 (C-1′)[d], 74.8 (C-2′), 78.0 (C-3′), 71.4 (C-4′), 78.5 (C-5′), 62.8 (C-6′); part c: 95.3, (C-1), 155.3 (C-3)[a], 109.5 (C-4)[b], 31.9 (C-5), 41.0 (C-6), 172.8 (C-7), 125.2 (C-8), 130.4 (C-9), 14.0 (C-10), 168.3 (C-11)[c], 52.1 (OMe), 101.0 (C-1′)[d], 74.8 (C-2′)[e], 78.1 (C-3′), 71.5 (C-4′)[f], 78.5 (C-5′), 62.8 (C-6′). *Jasminum polyanthum* (Oleaceae).[60]

158. Strychoside B



$C_{66}H_{90}O_{37}$: 1474.5159; amorphous powder; $[\alpha]_D^{21}$ −102.0° (c=0.33 MeOH); UV (MeOH): 235 (4.68); IR (KBr): 3442, 1695, 1636; ^{1}H-NMR (500 MHz, CD_3OD): part a: 5.56 (d, 4.5, H-1), 7.54 (s, H-3), 3.01 (m, H-5), 2.38 (m, H-6), 3.16 (m, H-6), 6.76 (br t, 7.0, H-7), 5.77 (dt, 17.0, 10.0, H-8), 2.81 (m, H-9), 5.30 (br d, 10.0, H-10), 5.37 (br d, 17.0, H-10), 4.68 (d, 8.0, H-1′), 3.21 (br t, 8.5, H-2′), 3.26—3.38 (m, H-3′, 4′, 5′), 3.63—3.70 (m, H-6′), 3.86—3.91 (m, H-6′); part b: 5.48 (d, 2.0, H-1), 7.47 (s, H-3), 4.10 (br d, 5.0, H-5), 9.32 (s, H-7), 5.63 (dt, 17.0, 10.0, H-8), 2.57 (m, H-9), 5.01 (br d, 10.0, H-10), 5.05 (br d, 17.0, H-10), 4.67 (d, 8.0, H-1′), other sugar protons appeared at the same values at that of part a; part c: 5.26 (d, 5.0, H-1), 7.43 (s, H-3), 3.11 (br q, 8.0, H-5), 1.76 (ddd, 14.0, 8.0, 5.0, H-6), 2.32 (dd, 14.0, 7.0, H-6), 5.25 (br t, 5.0, H-7), 2.18 (m, H-8), 2.06 (td, 9.0, 5.0, H-9), 1.08 (d, 7.0, H_3-10), 3.71 (s, MeO-11), 4.66 (d, 8.0, H-1′), other sugar protons appeared at the same values at that of part a; part d: 5.18 (d, 6.0, H-1), 7.44 (s, H-3), 3.01 (m, H-5), 1.60 (ddd, 14.0, 9.0, 5.0, H-6), 2.14 (m, H-6), 5.15 (br t, 5.0, H-7), 2.14 (m, H-8), 1.96 (br q, 7.0, H-9), 1.00 (d, 7.0, H_3-10), 3.69 (s, MeO-11), 4.64 (d, 8.0, H-1′), other sugar protons appeared at the same values at that of part a; ^{13}C-NMR (125 MHz, CD_3OD): part a: 97.9 (C-1)[a], 154.1 (C-3), 111.1 (C-4), 33.0 (C-5), 29.6 (C-6), 156.1 (C-7), 135.6 (C-8), 45.3 (C-9), 120.6 (C-10), 168.2 (C-11)[b], 100.2 (C-1′), 74.5 (C-2′)[c], 77.8 (C-3′)[d], 71.5 (C-4′)[e], 78.2 (C-5′)[f], 62.7 (C-6′)[g]; part b: 97.2 (C-1), 151.9 (C-3), 109.8 (C-4), 30.7 (C-5), 143.7 (C-6), 197.2 (C-7), 135.4 (C-8), 46.6 (C-9), 119.4 (C-10), 168.3 (C-11)[b], 99.6 (C-1′), 74.6 (C-2′)[c], 77.8 (C-3′)[d], 71.6 (C-4′)[e], 78.3 (C-5′)[f], 62.8 (C-6′)[g]; part c: 97.7 (C-1)[a], 152.7 (C-3), 113.1 (C-4), 32.9 (C-5), 40.4 (C-6), 78.4 (C-7), 41.1 (C-8), 47.1 (C-9), 14.2 (C-10), 169.5 (C-11), 51.8 (OMe), 100.2 (C-1′), 74.8 (C-2′)[c], 78.0 (C-3′)[d], 71.6 (C-4′)[e], 78.6 (C-5′)[f], 62.9 (C-6′)[g]; part d: 98.3 (C-1), 153.2 (C-3), 112.6 (C-4), 33.6 (C-5), 40.3 (C-6), 78.0 (C-7), 41.1 (C-8), 46.9 (C-9), 14.3 (C-10), 169.5 (C-11), 51.8 (OMe), 100.4 (C-1′), 74.7 (C-2′)[c], 77.9 (C-3′)[d], 71.6 (C-4′)[e], 78.4 (C-5′)[f], 62.8 (C-6′)[g]. *Strychnos spinosa* (Loganiaceae).[24]

Table 2. Alphabetical Index of Secoiridoids Cited in Table 1

1-*O*-*β*-D-Glucopyranosyl-4-*epi*-amplexine **31**
6′-*O*-*β*-D-Glucopyranosyl morroniside **25**
6″-*O*-*β*-D-Glucopyranosyloleuropein **71**
7-*O*-(4-*β*-D-Glucopyranosyloxy-3-methoxybenzoyl)-secologanolic acid **46**
6‴-*O*-Glucosyltrifloroside **67**
Gonocaryoside A **26**
Gonocaryoside B **27**
Gonocaryoside C **28**
Gonocaryoside D **29**
Gonocaryoside E **23**
Grandifloroside-11-methyl ester **48**
Hydrachoside A **64**
Hydramacroside A **65**
Hydramacroside B **66**
Hydroxyframoside A **81**
Hydroxyframoside B **82**
8-Hydroxy-10-hydrosweroside **24**
6*β*-Hydroxyswertiajaposide A **10**
6′-*O*-(7*α*-Hydroxyswerosyloxy)-loganin **150**
Insularoside-3′,4‴-di-*O*-*β*-D-glucoside **84**
Insularoside-3′-*O*-*β*-D-glucoside **83**
Insuloside **85**
Isojasminoside **89**
Isojaspolyoside A **124**
Isojaspolyoside B **125**
Isojaspolyoside C **126**
Isomacrophylloside **55**
Isooleoacteoside **87**
Jaslanceoside A **95**
Jaslanceoside B **96**
Jaslanceoside C **90**
Jaslanceoside D **91**
Jaslanceoside E **92**
Jasnudifloside A (Jasuroside A?) **106**
Jasnudifloside B (Jasuroside B?) **116**
Jasnudifloside C **108**
Jasnudifloside D **109**
Jasnudifloside E **110**
Jasnudifloside H **113**
Jasnudifloside L **114**
Jasnudifloside F **36**
Jasnudifloside G **37**
Jasnudifloside I **38**
Jasnudifloside J **39**
Jasnudifloside K **40**
Jaspofoliamoside A **32**
Jaspofoliamoside B **33**
Jaspolinaloside **34**
Jaspolyanoside **121**
Jaspolyanthoside **146**
Jaspolyoleoside A **133**
Jaspolyoleoside B **134**
Jaspolyoleoside C **135**
Jaspolyoside **129**
Jaspolyside **17**
Jasuroside A **105**
Jasuroside B **115**
Jasuroside C **107**
Jasuroside D **118**
Jasuroside E **42**
Jasuroside F **43**
Jasuroside G **100**
Korolkoside **141**
(8*Z*)-Ligstroside **72**
Loasafolioside **149**
Loniceracetalide A**7**
Loniceracetalide B **8**
Macrophylloside A **52**
Macrophylloside B **53**
Molihuaside A **101**
Molihuaside B **117**
Molihuaside C **102**
Molihuaside D **103**
Molihuaside E **104**
Neopolyanoside **136**
Nudifloside A **111**
Nudifloside B **112**
Nudifloside C **35**
Nudifloside D **41**
(8*Z*)-Nüzhenide **73**
Oleopolyanthoside A **156**
Oleopolyanthoside B **157**
L-Phenylalaninosecologanin **47**
Polyanoside **123**
Rapulaside A **153**
Rapulaside B **154**
Rhodanthoside B **119**
Rhodanthoside C **120**
Safghanoside A **75**
Safghanoside B **76**
Safghanoside C **77**
Safghanoside D **78**
Safghanoside E **79**
Safghanoside F **80**
Safghanoside G **131**
Safghanoside H **132**
Scabran G_3 **11**
Scabran G_4 **12**
Scabran G_5 **13**
Secologanoside-7-methyl ester **2**
Secostrychnosin **1**
Strychoside A **152**
Strychoside B **158**
Stryspinoside **30**
8-*O*-Tigloyldeacetyldiderroside **22**
Tricoloroside methyl ester **147**

pendicitis and abscesses.[74] Three new iridoids, patridoid I (**159**), patridoid II (**160**) and patridoid IIA (**161**) isolated from the whole plant of *P. saniculaefolia* were examined for their inhibitory effects on nitric oxide (NO) and tumor necrosis factor-α (TNF-α) production in cultured murine macrophase.[75] Among them, patridoid II (**160**) consistently inhibited NO and TNF-α production in a dose-dependent manner, with IC_{50} values of 14.1 and 17.6 μM, respectively. While patridoid I (**159**), which is a C-6 isomer of patridoid II, affected the production of NO and TNF-α production slightly and patridoid IIA did not inhibit TNF-α and NO production. These results suggest that 3α-methoxy orientation played an important role in inhibition activity and rationalise the use of this plant in inflammatory disorders.

Plantago, *Gentiana* and *Hapagophytum* species have been used as anti-inflammatory herbs. All these plants contain iridoid glycosides. To justify this anti-inflammatory use, Park *et al.* studied the anti-inflammatory activity of aucubin (**162**) isolated form *Plantago asiatica* and its aglycone (**163**) (by β-glucosidase treatment) on the production of Tumor Necrosis Factor-α (TNF-α) in RAW 264.7 cells. Aucubigenin (**163**) suppressed the production of both mRNA for TNF-α and subsequent TNF-α protein in the culture, but aucubin did not. The production of TNF-α-protein was inhibited in a dose dependent manner with an IC_{50} of 9.2 μM.[76] The TNF-α-proteins in the culture, were stimulated with lipopolysaccharide (LPS) (1 μg/ml) and interferon-γ (IFN-γ) (10 μg/ml). The aglycone of aucubin and rolipram (positive con-

trol) treatments exhibited significant suppressions of mRNA synthesis by 78% and 85% respectively, but no inhibition was observed with aucubin treatment. These results indicate that possibly iridoid glycosides exhibit an anti-inflammatory activity through their hydrolytic products rather than their intact glycoside forms.

Seven iridoids isolated from different extracts of *Scrophularia scorodonia* L. (Scrophulariaceae), namely, aucubin (**162**), bartsioside (**164**), harpagide (**165**), harpagoside (**166a**), 8-*O*-acetylharpagide (**167**), scorodioside (**168**), and scropolioside B (**169**) and had been evaluated for their *in vitro* anti-inflammatory activity in cellular systems generating cyclooxygenase (COX) and 5-lipoxygenase (LOX) metabolites.[77] The screening results indicated that most of the compounds did not exhibit any significant effect on PGE_2- and LTC_4-release from calcium ionophore stimulated mouse peritoneal macrophages. In the LTC_4-assay, only aucubin showed a significant effect, with an IC_{50} value of 72 μM. Harpagoside and harpagide also inhibited release of LTC_4, but neither effect reached statistical significance. The release of PGE_2 by mouse peritoneal macrophases stimulated by calcium ionophore was inhibited by both harpagoside and 8-acetyl harpagide at the highest non-cytotoxic dose of 100 μM, but this effect was not significant statistically. However, most of these iridoids showed a significant effect on TXB_2-release from calcium ionophore stimulated human platelets, with inhibition percentages slightly lower than the reference drug ibuprofen. Only harpagide, scorodioside, and scropolioside B had no significant effect on TXB_2-release. These results indicate that selective inhibition of the TX-synthase enzyme may be the primary target of action of most of these iridoids, and one of the mechanisms through which they exert their anti-inflammatory effect.

Three iridoids, gaertneroside (**170**), acetylgaertneroside (**171**) and gaertneric acid (**172**) isolated from African medicinal plant, *Morinda morindoides* (Baker) Milne-Redhead syn. *Gaertneria morindoides* Balc. showed potent anti-complementary activity with IC_{50} values of 58, 71 and 69 μM, respectively.[78] These iridoids inhibited the activation of classical pathway of the complementary system which is triggered by antibody-antigen complexes. Thus these iridoids may contribute at least in part to the traditional use against rheumatic pains. It may be noted that complement system is one of the major effector pathways in the process of inflammation. The plant is used in traditional medicine as an antirheumatic agent.

d. Antibacterial Activity *Pterocephalus perennis* subsp. *perennis* (Dipsacaceae), an endemic and abundant species of Greek peninsula is used traditionally all over Greece for antiseptic activity. Graikou *et al.* isolated six iridoids namely, loganin (**1b**), loganic acid (**173**), cantleyoside (**174**), secologanin (**175**), secologanin-dimethyl acetal (**176**) and cantleyoside-dimethyl-acetal (**137**) and tested their antimicrobial activities against two Gram-positive bacteria, *Staphylococcus aureus* and *S. epidermidis*, four Gram-negative bacteria, *Escherichia coli*, *Enterobactor cloacae*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa* and three pathogenic fungi, *Candida albicans*, *C. tropicalis* and *C. glabrata* by disk diffusion method.[61] The results indicated that loganin (**1b**) and cantleyoside dimethyl acetal (**137**) were most active against all the tested bacteria and fungi. Among others, cantleyoside (**174**) exhibited activity against both Gram-positive and Gram-negative bacteria and secologanin (**175**) and secologanin dimethyl acetal (**176**) showed a weak activity against Gram positive bacteria. The total antimicrobial profile of the plant is thus in accordance with its external use as an antiseptic.

Two seco-iridoids, swertiamarin (**177**) and sweroside (**178**) have been isolated from the aerial parts of *Centaurium erythraea* Rafn (Gentianaceae), which is reputed to use in folk medicine by Scottish as antiseptic. Both these seco-iridoids inhibited the growth of *Bacillus cereus*, *Bacillus subtilis*, *Citrobactor freundii* and *Escherichia coli*. Swertiamarin was also active against *Proteus mirabilis* and *Serratia marcescens*, while sweroside also inhibited the growth of *Staphylococcus epidermidis*.[79]

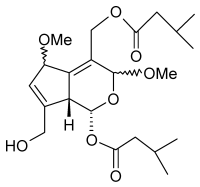
Dai *et al.* isolated eleven nonglycosidic iridoids from the Chinese medicinal plant, *Cymbaria mongolica* and assayed their antibacterial activity.[80] All these iridoids showed antibacterial activity against *Bacillus subtilis*, *Escherichia coli* and *Staphylococcus aureus*. Among them, iridoid (**179**) possessed significant activity against *B. subtilis*, *E. coli* and *S. aureus* with inhibition zone of 14.5, 13.9 and 14.5 mm in diameter, respectively at a concentration of 10 μg/disc by paper disc method. This activity is very close to standard antibiotic, chloramphenicol having inhibitory zone of 14.5, 14.9 and 15.1 mm in diameter, respectively at the same concentration.

Yuan *et al.* isolated ten iridoids from the Chinese whole plant, *Pedicularis kansuensis*, which is used in folk medicine as cardiac tonics for treatment of collapse, exhaustion and senility. They also assayed these compounds against microorganisms, *Bacillus subtilis*, *Escherichia coli* and *Staphyllococcus aureus*.[81] Among them four iridoids namely, ixoroside (**239**), boschnaloside (**240**), 8-*epi*-loganic acid and aucubin exhibited strong antibacterial activity against *E. coli* and *S. aureus* by cup-plate method having growth inhibition zone of 13—20 mm in diameter at a concentration of 20 μg/disc.

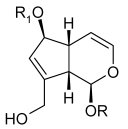
e. Antifungal Activity Epimeric mixture of α- and β-gardiol (**180a**, **b**) isolated from the leaves of Brazilian tree, *Tocoyena formosa* (Cham *et.* Sch.) K. Shun (Rubiaceae) showed moderate fungitoxic property against DNA repair-deficient yeast strains, RS321, RS167N and RS322N and wild-type strain of *Saccharomyces cerevisiae*, RS188N with an IC_{12} of 120, 126, 90, 105 $\mu g\,ml^{-1}$, respectively. Camptotecin and streptonigrin used as standard drugs showed fungitoxicity against RS 167N and RS322N with an IC_{12} of 8.7, 0.6; 2.4 and 0.4 $\mu g\,ml^{-1}$, respectively.[82]

Chioccoca alba Hitch (Rubiaceae), a shrub endemic to America is used in folk medicine as a tonic for ganglion inflammation as well as diuretic and snake-bite treatment. Carbonezi *et al.* investigated the roots of this plant and isolated three iridoids and one seco-iridoid named alboside IV (**45**). Alboside IV showed moderate fungitoxic activity towards the DNA repair-deficient mutant RS 321 of *Saccharomyces cerevisiae* with an IC_{12} value of 120 μM.[29]

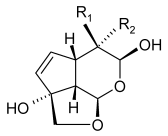
f. Anticancer Activity A 70% acetone extract of *Viburnum luzonicum* Rolfe, an evergreen shrub widely distributed in Taiwan, was reported to inhibit KB cell growth.[83] In the study of cytotoxic principles of this plant, Fukuyama *et al.* isolated four iridoid glucosides (**181**—**184**), named luzonosides A—D, and seven iridoid aglycones (**185**—**191**), named luzonoids A—G and studied their inhibitory activity



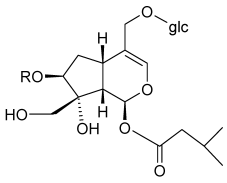
159 C-3 & C-6: α-OMe
160 C-3: α-OMe; C-6: β-OMe
161 C-3 & C-6: β-OMe



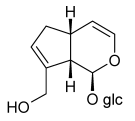
162 R= glc, R_1= H
163 R= R_1= H
212 R_1= α-L-rhamnosyl, R= glc
213 R_1= β-D-xylosyl, R= glc



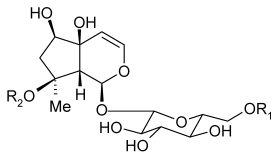
180a R_1= H, R_2= COOMe
180b R_1= COOMe, R_2= H



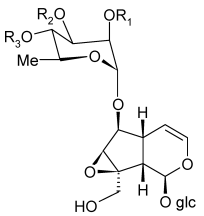
181 R= *E*-*p*-coumaroyl
182 R= *Z*-*p*-coumaroyl



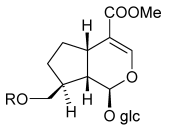
164



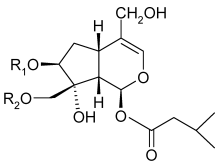
165 R_1= R_2= H
166a R_1= H, R_2= E-cinnamoyl
166b R_1= H, R_2= Z-cinnamoyl
167 R_1= H, R_2= Ac
227 R_1= H, R_2= *E*-*p*-methoxycinnamoyl
228 R_1= H, R_2= *Z*-*p*-methoxycinnamoyl
229 R_1= *E*-*p*-methoxycinnamoyl, R_2= H
230 R_1= *Z*-*p*-methoxycinnamoyl, R_2= H
234 R_1= H, R_2= *E*-*p*-coumaroyl



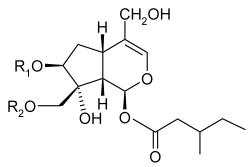
231 R_1= R_3= Ac, R_2= *p*-methoxycinnamoyl
232 R_1=Ac, R_2= R_3= *p*-methoxycinnamoyl
233 R_1= R_2= Ac, R_3= *p*-methoxycinnamoyl
192 R_1= Ac, R_2= cinnamoyl, R_3= *p*-methoxycinnamoyl
168 R_1= cinnamoyl, R_2= Ac, R_3= H
169 R_1= Ac, R_2= R_3= cinnamoyl



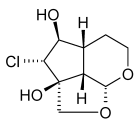
183 R= *E*-*p*-coumaroyl
184 R= *Z*-*p*-coumaroyl



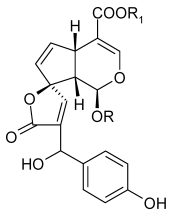
185 R_1= *E*-*p*-coumaroyl, R_2= H
186 R_1= *Z*-*p*-coumaroyl, R_2= H
187 R_1= H, R_2= *E*-*p*-coumaroyl
188 R_1= H, R_2= *Z*-*p*-coumaroyl



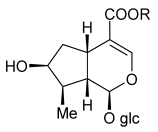
189 R_1= *E*-*p*-coumaroyl, R_2= H
190 R_1= *Z*-*p*-coumaroyl, R_2= H
191 R_1= H, R_2= *E*-*p*-coumaroyl



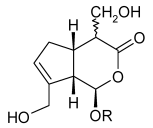
193



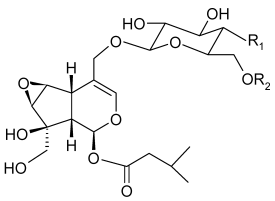
170 R = glc, R_1= Me
171 R = glc-6-OAc, R_1= Me
172 R= glc, R_1= H



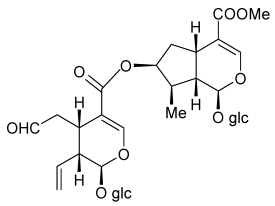
1b R= Me
173 R= H



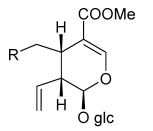
194 R= Me, C-4: β-CH_2OH
195 R= H, C-4: α-CH_2OH



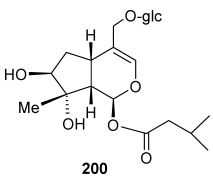
196 R_1= R_2= H
197 R_1= H, R_2= glc
198 R_1= OH, R_2= H
199 R_1= OH, R_2= glc



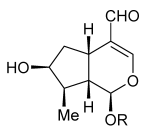
174



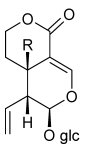
175 R= CHO
176 R= $CH(OMe)_2$



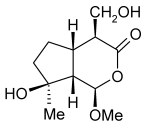
200



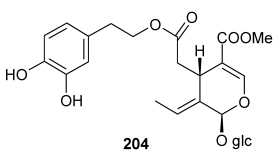
201 R= H
202 R= Me
203 R= glc



177 R= OH
178 R= H



179



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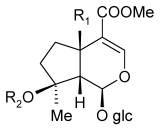

205 R_1= R_2= H
224 R_1= OH, R_2= Ac

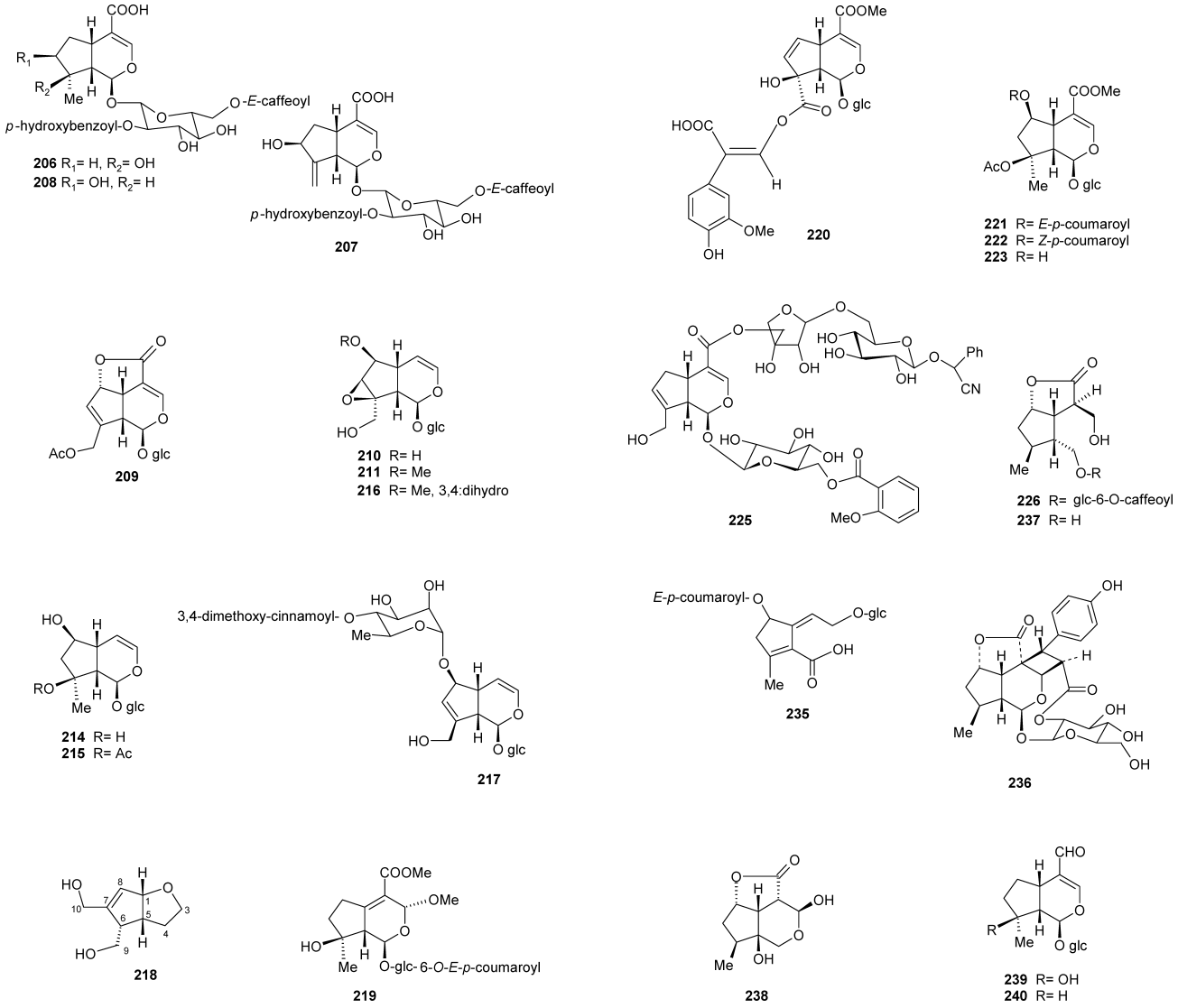

Fig. 2

against $HeLaS_3$ cancer (human epithelial cancer) cell line using fluorouracil and cisplatin as positive controls. Iridoid glucosides **181** and **182** and their aglycones (**185**—**189)** exhibited moderate inhibitory activity with IC_{50} values of 3—7 μM, whereas compound **183** and **184** showed no cytoxicity even at 100 μM.[84] Furthermore, cytotoxic iridoids **181**, **182** and **185**—**189** also inhibited the growth and the cell viability in primary-cultured rat cortical neurons at 10 μM.[85] Cytotoxic screening of compounds **190** and **191** was not reported due to their availability in limited amounts. The roots of *Scrophularia ningpoensis* Hemsl. in Vietnam are used in remedy of mouth dryness, sore throat, ulcerous stomatitis and cancer. Nguyen *et al.* isolated an iridoid glycoside, scrophuloside B_4 (**192**) from the roots of this plant. This iridoid showed mild cytotoxicity on K562 (leukemia) cells and Bowes cells (skin cancer) with an IC_{50} value of 44.6 and 90.2 μM, respectively.[86]

Dai *et al.* isolated eleven non-glycosidic iridoids from the acetone extract of the whole plant of *Cymbaria mongolica*, which is used as traditional Chinese medicine for treatment of rheumatism and dermatosis. All these plant metabolites were tested for antitumor and antibacterial activity. The antitumor testing results indicate that only three iridoids (**193**—**195**) showed significant antitumor activity against human hepatoma cells, (SMMC-7721), human uterine cervix carcinoma cells (Hela) and mouse melanotic carcinoma cells (B16). Their IC_{50} values were comparable to vincristine which was used as positive control. Rehmaglutin D (**193**) showed remarkable inhibition against SMMC-7721, B-16 and Hela with an IC_{50} value of 45.4, 60.7 and 71.2 μg/ml respectively, whereas the control drug, vincristine showed inhibition with an IC_{50} value of 63.2, 70.7 and 67.2 μg/ml, respectively. Other two iridoids, namely, **194** showed cytotoxicity with an IC_{50} value of 78.3, 75.2, 75.4 μg/ml and **195** with IC_{50} value of 88.8, 40.2 and 73.2 μg/ml, respectively.[80]

Kuruuzum-uz *et al.* isolated five iridoids, **196**—**200** from the roots of Turkish medicinal plant, *Centranthus longiflorus* Stev. ssp. *longiflorus* (Valerianaceae) and all these compounds showed weak cytostatic/cytotoxic activity (GI_{50}: 1—9 μg/ml) against cancer cell lines, HM02 (stomach carcinoma), Hep G2 (liver carcinoma) and MCF7 (mamma carcinoma) according to NCI-directives.[87] This plant is used in folk medicine for sedative and antispasmodic purposes. The iridoids containing aqueous extract of this plant (100 mg/kg)

also showed sedative, anticonvulsant and antidepressant effects, similar to the effect of diazepam (5 mg/kg) on mice and rats.[88]

An unusual iridoid, citrifolnin A (**220**) isolated from *Morinda citrifolia* L. (Rubiaceae) showed significant inhibition of UVB-induced Activator Protein-1 (AP-1) in cell cultures with an IC_{50} of 69.6 μM.[89] This inhibitory activity may be useful in the treatment of skin cancer. The plant has been used as a folk medicine for treatment of diabetes, hypertension and cancer.[90]

g. Anticoagulant Activity Two nonglycosidic irodoids, cachinol (**201**) and 1-*O*-methylcachinol (**202**) along with glucoside cachineside 1 (**203**) were isolated from the methanolic extract of the leaves of *Campsis grandiflora* (Thunb.) K. Schum (Bignoniaceae), syn. *C. chinensis* (Lam.) Voss. The flowers, leaves and roots of this plant have been used in Chinese traditional drugs for treatment of diseases caused by blood stagnation.[91] All the isolated iridoids showed mild inhibitory activities on rat platelet aggregation. Compounds **201** and **203** (IC_{50}: 246, 219 μM, respectively), showed about 2-fold higher inhibitory effects than acetyl salicylic acid (ASA, IC_{50}: 412 μM) on collagen induced aggregation. Compounds **201** and **202** (IC_{50}: 43.2, 38.4 μM, respectively) were about 2-fold more inhibitory than ASA (IC_{50}: 75.2 μM), and about 4-fold more effective than their glucoside **203** (IC_{50}: 189 μM) on arachidonic acid (AA)-induced aggregation.[92] Compounds **201** and **202** may serve as a new lead for search of strong anti-platelet agents selectively acting on AA.

The pharmacological experiments on the water soluble extracts of Chinese herb, *Heracleum rapula* Fr. (Umbelliferae) showed its antibiotics and antiasthmatic effects.[93] To find out the bioactive compounds from the water-soluble extracts of its roots, Xiao *et al.* isolated two rearranged bis-iridoids, rapulaside A (**153**) and rapulaside B (**154**) and tested their *in-vitro* inhibitory effects against rabbit platelet aggregation induced by platelet activiting factor (PAF), arachidonic acid (AA) and adenosine diphosphate (ADP) using ginkgolide B (BN 52021) and acetyl salicylic acid (ASA) as positive controls. Only trends of inhibition was observed. The percentage of aggregation of PAF (7.2 nμ/l) was 42.9 and 53.9; of AA (0.35 μM/l) was 69.2 and 73.6 and of ADP (3 μM/l) 68.9 and 66.8 at a concentration of 10 mg/l of the compounds **153** and **154**, respectively.[69]

h. Antioxidant Activity The accumulation of free radicals on cellular membrane lipids play a major role in various pathological disorders, including atherosclerosis, cancer, aging, rheumatoid arthritis and inflammation.[94] Hence radical scavenging effects of the anti-oxidants may help to overcome these pathological events.

Both the EtOAc and MeOH extracts of the leaves of Korean plant, *Syringa dilatata* Nakai (Oleaceae) showed promising free radical scavenging activity by interaction with the stable free radical DPPH (1,1-diphenyl-2-picrylhydrazyl). Oh *et al.* chemically investigated both these extracts of the plant and isolated two seco-iridoids, ligstroside and oleuropein and one iridoid glucoside, syringopicroside. The study of anti-radical scavenging activity against DPPH at four different concentrations (10, 20, 100, 200 μM) indicated that only oleuropein (**204**) scavenged DPPH. The value of the 50% inhibition concentration (IC_{50}) of **204** was 40.4 μM. L-Ascorbic acid was used as reference substance and showed the IC_{50} value of 50.3 μM.[95]

Iridoid, mussaenoside **205** isolated from the whole plant of *Bartsia alpina* L. (Scrophulariaceae) showed anti-oxidant property in the β-carotene bleaching assay but was inactive against DPPH in the TLC bioassay.[96]

Three iridoids namely, 6′-*O*-*trans*-caffeoylnegundoside (**206**), 2′-*O*-*p*-hydroxybenzoyl-6′-*O*-*trans*-caffeoylgardoside (**207**) and 2′-*O*-*p*-hydroxybenzoyl-6′-*O*-*trans*-caffeoyl-8-*epi*-loganic acid (**208**) isolated from the leaves of *Vitex altissima* L. (Verbenaceae), an Indian medicinal plant found in Eastern Ghats and Deccan Plateau, showed potent antioxidant activity, both in a superoxide free-radical scavenging test (NBT method) (IC_{50}: 24.3, 32.0, 31.9 μM, respectively) and in a DPPH radical scavenging test (IC_{50}: 15.2, 10.9, 11.4 μM, respectively), in comparison to the known antioxidants, butylated hydroxyl toluene (BHT) (NBT, IC_{50}: 381 μM and DPPH, IC_{50}: 19 μM) and butylated hydroxyl anisole (BHA) (NBT, IC_{50}: 966 μM and DPPH, IC_{50}: 18 μM).[97]

Hedyotis diffusa Willd. (Rubiaceae), one of the important folk medicines in Taiwan, has been used in the treatment of cancers, appendicitis, hepatitis, furunculosis, enteritis and bleeding. From the methanolic extract of the aerial part of this plant, Lu *et al.* isolated a few flavonol glycosides and iridoid glycosides and studied their antioxidant effects. Among the isolated iridoids, only asperuloside (**209**) showed moderate anti-lipid peroxidation effect on $FeCl_2$–ascorbic acid induced lipid peroxidation in a rat liver homogenate *in vitro* with an IC_{50} of 118.5 μM. Vitamin E used as a positive control showed IC_{50} of 38.6 μM under the same condition.[98]

i. Anti-protozoal Activity The ethanolic root extract of *Scrophularia lepidota* Boiss (Scrophulariaceae), an endemic Turkis flora showed trypanocidal, leishmanicidal, anti-malarial and plasmodial FabI enzyme inhibiting properties. Tasdemir *et al.* investigated the ethanolic root extract of this plant and isolated ten iridoids, **162**, **210**—**218** and phenylethanoid glycoside, angoroside and tested these metabolites against *Trypanosoma brucei rhodesiense*, *Trypanotoma cruzi*, *Leishmania donovani* and *Plasmodium falciparam*.[99] Except for sinuatol (**212**), all the iridoids showed potential trypanocidal activity against *Trypanosoma brucei rhodesiense* (IC_{50}: 29.3—73.0 μg/ml). Except for **218**, all the isolated iridoids were active against *L. donovani*, the compound **217** (scrolepidoside) being the most potent (IC_{50}: 6.1 μg/ml). Only compound **218** showed moderate anti-plasmodial (IC_{50}: 40.6 μg/ml) and Fab I enzyme inhibitory activity (IC_{50}: 100 μg/ml). None of the iridoids exerts cytotoxicity towards rat skeletal myoblasts (L6 cells).

Brunneogaleatoside (**219**) isolated from the water soluble portion of MeOH extract of the aerial parts of Turkish plant, *Phlomis brunneogaleata* Hub.–Mor. (Lamiaceae) showed potent leishmanicidal activity against *Leishmania donovani* of amastigote form (IC_{50}: 4.7 μg/ml). It also showed appreciable trypanocidal effect towards *Trypanosoma brucei rhodesiense* (IC_{50}: 18.1 μg/ml) and feeble activity against *Plasmodium falciparum* (IC_{50}: 38.9 μg/ml). This compound did not display significant toxicity on the respective mammalian host cells (L6).[100]

j. Antiviral Activity Bermejo *et al.* screened antiviral activity of seven iridoids, aucubin (**162**), bartsioside (**164**), harpagide (**165**), harpagoside (**166a**), 8-*O*-acetylharpagide

(**167**), scorodioside (**168**), and scropolioside B (**169**) isolated from different extracts of *Scrophularia scorodonia* L. (Scrophulariaceae) *in vitro* against herpes simplex type virus 1 (HSV-1), vesicular stomatitis virus (VSV) and poliovirus type 1.[101] Three of these compounds, namely, 8-*O*-acetylharpagide, harpagoside and scorodioside showed antiviral activity against VSV. The percentage of cellular viability at the non-toxic limit concentration of these active compounds were: 8-*O*-acetylharpagide 32.1% at 500 μg/ml, harpagoside 43.3% at 450 μg/ml and scorodioside 47—80% at 500 μg/ml. Scorodioside also showed moderate *in vitro* anti-HSV-1 activity (30.6% at 500 μg/ml). None of these compounds had any effect against poliovirus. It is interesting to note that iridoid, scorodioside (**168**) was active against two different viruses *i.e.*, HSV-1 and VSV, which are unrelated from a phylogenetic view point.

Barleria prionitis L. (Acanthaceae) is a medicinal plant distributed in Africa and tropical Asia. A decoction of leaves and flowers of this plant is used in India to treat fever, while the green shoots are taken orally to treat whooping cough and asthma in infants and children.[102,103] A hot-water extract of the dried leaves and roots is taken orally to treat bronchitis and coughs.[104] A common cause of fever is a viral illness and the most common cause of 'asthma-like' symptoms of infants is respiratory syncytial virus (RSV) infection of the lungs.[105] Chen *et al.* tried to find out the bioactive compounds from this plant and isolated three iridoids, **221**—**223** and one phenolic glycoside, verbascoside and tested these compounds against RSV.[106] A 3 : 1 mixture (as determined by ^{1}H-NMR) of compounds **221**—**222** exhibited antiviral activity against RSV (A2 strain) in a cell culture-based cytopathic effect (CPE) assay (EC_{50}: 2.46 μg/ml). Under these assay conditions the samples was moderately cytotoxic (Hep-2 cells, IC_{50}: 42 μg/ml) but had some selectivity for antiviral inhibition (selective index (SI)=IC_{50}/EC_{50}=17). Barlerin (**223**) was inactive in the same assay. Pure compounds of **221** and **222** were insufficient for testing and hence the authors used their mixture for assay. This assay result indicates that coumaroyl moiety in iridoid nucleus is probably important for anti RSV activity.

Barleria lupulina Lindl. (Acanthaceae) is a Thai medicinal shrub and is used in folk medicine as an anti-inflammatory agent for insect-bites and snake-bites and as remedies for herpes simplex virus.[107] The crude extract of the leaves and twigs of this plant was reported to possess anti-herpes simplex virus type-2 (HSV-2) activity.[108] To find out the anti-HSV principle, Suksamrarn *et al.* chemically investigated the flowers of this plant and isolated nine iridoids. Among the isolated iridoids, only ipolamiidoside (**224**) was active against HSV-1 with an IC_{50} of 41.1 μg/ml. It was not toxic to vero cells (IC_{50} >50 μg/ml).[109] As this iridoid, **224** contains a C-5 hydroxy group, possibly it is the structural requirement for an iridoid to exhibit anti HSV-1 activity.

k. Antispasmodic Activity The bark of South American small tree, *Sickingia williamsii* Standl. (Rubiaceae) is used as analgesic and anti-inflammatory drug in Peruvian folk medicine. Aquino *et al.* isolated a few alkaloids and iridoids from different extracts of the bark of this plant and examined their effects on electrically induced contractions of guinea-pig ileum (ECI).[110] Among the isolated iridoids, loganin (**1b**) and sweroside (**178**) possessed significant inhibitory activity on ECI with an ED_{50} value of 100 μM and 400 μM, respectively. This inhibition appeared for 2—4 min after administration of drug, was enhanced with time and lasted for 15 min. This result may be utilized for further study of these compounds to an interaction with specific receptors or neurotransmitters on smooth muscle control. It may be noted that the antispasmodic effect of the structurally related iridoids swertiamarin (**177**) on rats was reported earlier.[111]

l. Immunomodulatory Activity A number of *Plantago* spp. especially *P. major* (Plantaginaceae) has long been used in the treatment of diseases such as, infection, inflammation, cancer, colds and viral hepatitis.[112] *Plantago* genus contains five chemical classes of compounds, namely, flavonoids (*e.g.*, baicalein, baicalin and luteolin), monoterpenoids (*e.g.*, linalool), triterpenoids (*e.g.*, oleanolic acid and ursolic acid), iridoid glycosides (*e.g.*, aucubin) and phenolic compounds (*e.g.*, caffeic acid, chlorogenic acid, ferulic acid, *p*-coumaric acid and vanillic acid).[113] To evaluate the immunomodulatory activities of five chemical classes of compounds obtained from the *Plantago* genus Chiang *et al.* conducted their studies on human peripheral blood mononuclear cells (PBMC).[114] Studied on PBMC was carried out on lymphocyte transformation by 5-bromo-2-deoxyuridine (BrdU) immunoassay and secretion of interferon gamma (IFN-γ) using an enzyme-linked immunosorbant assay (ELISA). Results showed that water soluble iridoid, aucubin (**162**) at concentration lower than 5 μg/ml significantly stimulated the proliferation of human PBMC and enhanced secretion of IFN-γ).

m. Insecticide Activity Cyanogenic iridoid glycoside (**225**) isolated from air-dried fruits of *Canthium schimperianum* Lam. (Rubiaceae), showed weak growth retarding activity towards neonate larvae of herbivorous insect, *Spodoptera littoralis* (Noctuidae) with an ED_{50} of 8580 ppm (9.35 μg/g fr.wt.).[115]

Catalpol (**210**) isolated from the aerial parts of *Buddleja cordobensis* and 8-*O*-acetylharpagide (**167**) isolated from *Ajuga reptans* L. and semi-synthetic harpagide (**165**) showed growth inhibitory activities against larvae and adults of insect pest, *Tribolium castaneum* Herbst (Coleoptera: Tenebrionidae). Catalpol was the most active compound which caused 73.3% mortality of larvae in 8.2 d. Catalpol also showed highest inhibitory activity against taq DNA polymerase by PCR assay method with an IC_{50} of 47.8 μM and 8-*O*-acetylharpagide was weakly active, with an IC_{50} of 213.8 μM. Harpagide was an even weaker inhibitor (IC_{50}: 416.9 μM).[116]

n. Wound-healing Activity The common figwort, *Scrophularia nodosa* L. (Scrophulariaceae) is used in Ireland for the treatment of wounds and cancer.[117] To substantiate this ethnobotanical use of this plant for healing wounds, Stevenson *et al.* extracted the air-dried matured seed pods of this plant with methanol. From this methanolic extract they isolated three iridoid glycosides, scopolioside A (**231**), scrophuloside A_4 (**232**) and scrovalentinoside (**233**) and tested these glycosides *in vitro* to stimulate the growth of human dermal fibroblasts.[118] It may be noted that human dermal fibroblasts (HDF) are involved in all the processes of wound healing namely, inflammation, wound contraction, reepithelialization, tissue remodelling and formation of granulation tissue with angiogenesis. Compound **231** stimulated HDF

growth over the full range (100 to 0.78 μg/ml) of concentrations tested. While both compounds **232** and **233** showed a negative dose-dependent response, stimulating HDF growth at lower concentration (highest at 0.78 μg/ml). Scopolioside A was also found to possess immunostimulant property[119] and compound **232** anti-inflammatory activity.[120] Hence the use of the extract of *S. nodosa* containing these compounds for wound healing treatment as folk medicine is justified.

o. Neuroprotective Activity Glutamate is widely known to be associated with central excitatory neurotransmission. This glutamate is also recognized to be a cause of neuronal cells loss, which is involved in neurodegenerative disorders such as seizures, ischemia, spinal cord trauma, Alzheimer's disease and Parkinson's disease. Kim *et al.* isolated seven iridoids namely, 8-*O*-*E*-*p*-methoxycinnamoylharpagide (**227**), 8-*O*-*Z*-*p*-methoxycinnamoyl harpagide (**228**), 6′-*O*-*E*-*p*-methoxycinnamoylharpagide (**229**), 6′-*O*-*Z*-*p*-methoxycinnamoyl harpagide (**230**), *E*-harpagoside (**166a**), *Z*-harpagoside (**166b**) and harpagide (**165**) from the roots of Korean herb, *Scrophularia buergeriana* Miquel (Scrophulariaceae) and studied their effects on glutamate-induced neurotoxicity by adding them to primary cultures of rat cortical cells at concentrations ranging from 100 nM to 10 μM.[121] The neuroprotective activity of the compounds was quantified by measuring the release of lactate dehydrogenase (LDH) into the culture media from primary cultures of rat cortical cells injured with glutamate. The results indicate that at concentrations of 0.1—10.0 μM, compounds **227**—**230** significantly blocked the release of LDH from glutamate injured primary cultures of rat cortical cells. Compounds **165**, **166a** and **166b** also reduced the release of LDH in a dose-dependent manner. On the basis of these results, it can be concluded that the iridoid aglycone unit as well as the *E*-*p*-methoxycinnamic acid unit contribute key roles in the neuroprotective effect.

p. Nerve Growth Factor-Potentiating Activity Nerve growth factor (NGF) is one of the neurotrophic factors for neurodegenerative disorders. *Verbena littoralis* H. B. K. (Verbenaceae), native of Paraguay is potentially useful for the medical treatment of dementia.[122] To find out the bioactive chemicals possessing a NGF-potentiating activity Li and Ohizumi isolated nine iridoids from the methanol extract of the plant and tested their activity.[123] Among these iridoids, littoralisone (**236**) possessed moderate the NGF-potentiatiating activity enhancing the NGF's activity in PC 12D cells, but significant activity was shown by gelsemiol (**237**) and 7α-hydroxy semperoside aglucone (7α-OHSA) (**238**). Gelsemiol **(237**) at concentration of 100 μM markedly enhanced an increase in the proportion of neurite-bearing cells and an extension of the neurite length in presence of NGF (2 ng/ml). 7α-OHSA (**238**) at the same concentration 100 μM does not increase the population of the neurite length in presence of NGF (2 ng/ml). Neurite outgrowth was not caused by both the compounds, gelsemiol and 7α-OHSA in absence of NGF. Therefore, these compounds may be useful pharmacological tools for the study of the mechanism of neurotrophic action of NGF.

Another iridoid, gelsemiol-6′-*trans*-caffeoyl-1-glucoside (**226**) isolated from MeOH extract of the aerial parts of the same plant, *V. littoralis* showed weak enhancement of nerve growth factor (NGF)-mediated neurite outgrowth in PC 12D cells (10% at a concentration of 30 μM).[124]

Concluding Remarks

From the results of pharmacological studies collected in this article, it is clear that iridoids exhibit a wide range of remarkable biological activity. Hence the use of plant extracts containing iridoids in several herbal pharmaceutical drug formulations is justified. Moreover, further study on plant extracts containing iridoids is worthy for isolation of more new iridoids and to evaluate their potential pharmacological activity. Systematic biological and pharmacological screening and testing of the isolated iridoids from different plants will be helpful for their proper use in agro and pharmaceutical or other industries as raw materials.

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References

1) Dinda B., Debnath S., Harigaya Y., *Chem. Pharm. Bull.*, **55**, 159—222 (2007).
2) El-Naggar L. J., Beal J. L., *J. Nat. Prod.*, **43**, 649—707 (1980).
3) Boros C. A., Stermitz F. R., *J. Nat. Prod.*, **54**, 1173—1246 (1991).
4) Al-Hazimi H. M. G., Alkhthlan H. Z., *J. Chem. Soc. Pakisthan*, **18**, 336—357 (1996).
5) Sticher O., "New Natural Products and Plant Drugs with Pharmacological, Biological or Therapeutic Activity," ed. by Wanger H., Wolff P., Springer-Verlag, Berlin, 1977, pp. 137—176.
6) Ghisalberti E. L., *Phytomedicine*, **5**, 147—163 (1998).
7) Mandal S., Jain R., Mukhopadhyaya S., *Indian J. Pharm. Sci.*, **60**, 123—127 (1998).
8) Cheng M.-J., Tsai I.-L., Chen I.-S., *J. Chin. Chem. Soc.*, **48**, 235—239 (2001).
9) Machida K., Unagami E., Ojima H., Kikuchi M., *Chem. Pharm. Bull.*, **51**, 883—884 (2003).
10) Itoh A., Fujii K., Tomatsu S., Takao C., Tanahashi T., Nagakura N., Chen C.-C., *J. Nat. Prod.*, **66**, 1212—1216 (2003).
11) Machida K., Kikuchi M., *Phytochemistry*, **40**, 603—604 (1995).
12) Kakuda R., Imai M., Yaoita Y., Machida K., Kikuchi M., *Phytochemistry*, **55**, 879—881 (2000).
13) Kikuchi M., Kakuda R., Kikuchi M., Yaoita Y., *J. Nat. Prod.*, **68**, 751—753 (2005).
14) Shiobara Y., Kato K., Ueda Y., Taniue K., Syoha E., Nishimoto N., Oliveira F. D., Akisue G., Akisue M. K., Hashimoto G., *Phytochemistry*, **37**, 1649—1652 (1994).
15) Kumar S., Sati O. P., Semwal V. D., Nautiyal M., Sati S., Takeda Y., *Phytochemistry*, **53**, 499—501 (2000).
16) Shen Y. C., Lin S.-L., Chein C.-C., *Phytochemistry*, **42**, 1629—1631 (1996).
17) Trujillo J. M., Hernandez J. M., Perez J. A., Lopez H., Frias I., *Phytochemistry*, **42**, 553—554 (1996).
18) Lopez H., Perez J. A., Hernandez J. M., Trujillo J., *J. Nat. Prod.*, **60**, 1334—1337 (1997).
19) Zuleta L. M. C., Cavalheiro A. J., Silva D. H. S., Furlan M., Young M. C. M., Albuquerque S., Castro-Gamboa I., Bolzani V. d. S., *Phytochemistry*, **64**, 549—553 (2003).
20) Chan Y. Y., Leu Y. L., Lin F. W., Li C. Y., Wu Y. C., Shi L. S., Liou M. J., Wu T. S., *Phytochemistry*, **47**, 1073—1077 (1998).
21) Tan R. X., Kong L. D., Wei H. X., *Phytochemistry*, **47**, 1223—1226 (1998).
22) Otsuka H., Kijima (nee Yuasa) K., *Chem. Pharm. Bull.*, **49**, 699—702 (2001).
23) Kaneko T., Sakamoto M., Ohtani K., Ito A., Kasai R., Yamasaki K., Padorina W. G., *Phytochemistry*, **39**, 115—120 (1995).
24) Itoh A., Oya N., Kawaguchi E., Nishio S., Tanaka Y., Kawachi E., Akita T., Nishi T., Tanahashi T., *J. Nat. Prod.*, **68**, 1434—1436 (2005).
25) Tanahashi T., Takenaka Y., Nagakura N., *J. Nat. Prod.*, **60**, 514—518 (1997).
26) Tanahashi T., Takenaka Y., Nagakura N., Nishi T., *Chem. Pharm., Bull.*, **48**, 1200—1204 (2000).

27) Takenaka Y., Tanahashi T., Taguchi H., Nagakura N., Nishi T., *Chem. Pharm. Bull.*, **50**, 384—389 (2002).
28) Shen Y.-C., Hsieh P.-W., *Phytochemistry*, **46**, 1197—1201 (1997).
29) Carbonezi C. A., Martins D., Young M. C. M., Lopes M. N., Furlan M., Filho E. R., Bolzani V. d. S., *Phytochemistry*, **51**, 781—785 (1999).
30) Machida K., Sasaki H., Iijima T., Kikuchi M., *Chem. Pharm. Bull.*, **50**, 1041—1044 (2002).
31) Chulia A. J., Vercauteren J., Mariotte A. M., *Phytochemistry*, **42**, 139—143 (1996).
32) Kitagawa I., Wei H., Nagao S., Mahmnd T., Hori K., Kobayashi M., Uji T., Shibuya H., *Chem. Pharm. Bull.*, **44**, 1162—1167 (1996).
33) Jiang R.-W., Wong K.-L., Chan Y.-M., Xu H.-X., But P. P.-H., Shaw P.-C., *Phytochemistry*, **66**, 2674—2680 (2005).
34) Tan R. X., Wolfender J.-L., Zhang L. X., Ma W. G., Fuzzati N., Marston A., Hostettmann K., *Phytochemistry*, **42**, 1305—1313 (1996).
35) Tan R. X., Kong L. D., *Phytochemistry*, **46**, 1035—1038 (1997).
36) Kikuzaki H., Kawasaki Y., Kitamura S., Nakatani N., *Planta Medica*, **62**, 35—38 (1996).
37) Tan R. X., Hu J., Kong L. D., Wolfender J.-L., Hostettmann K., *Planta Medica*, **63**, 567—569 (1997).
38) Rodriguez S., Wolfender J.-L., Hostettmann K., Odonluye G., Pura O., *Helv. Chim. Acta*, **79**, 363—370 (1996).
39) Chang F.-R., Lee Y.-H., Yang Y.-L., Hsieh P.-W., Khalil A. T., Chen C.-Y., Wu Y.-C., *J. Nat. Prod.*, **66**, 1245—1248 (2003).
40) Yoshikawa M., Ueda T., Matsuda H., Yamahara J., Murakami N., *Chem. Pharm. Bull.*, **42**, 1691—1693 (1994).
41) Bergeron C., Marston A., Gauthier R., Hostettmann K., *Phytochemistry*, **44**, 633—637 (1997).
42) Tanahashi T., Takenaka Y., Akimoto, M., Okuda A., Kusunoki Y., Suekawa C., Nagakura N., *Chem. Pharm. Bull.*, **45**, 367—372 (1997).
43) Machida K., Kaneko A., Hosogai T., Kakuda R., Yaoita Y., Kikuchi M., *Chem. Pharm. Bull.*, **50**, 493—497 (2002).
44) Calis I., Hosny M., Lahloub M. F., *Phytochemistry*, **41**, 1557—1562 (1996).
45) Takenaka Y., Okazaki N., Tanahashi T., Nagakura N., Nishi T., *Phytochemistry*, **59**, 779—787 (2002).
46) Iossifova T., Vogler B., Kostova I., *Phytochemistry*, **49**, 1329—1332 (1998).
47) Tanahashi T., Parida, Takenaka Y., Nagakura N., Inoue K., Kuwajima H., Chen C.-C., *Phytochemistry*, **49**, 1333—1337 (1998)
48) Shen Y.-C., Lin T.-T., Lu T.-Y., Hung S.-E., Sheu J.-H., *J. Chin. Chem. Soc.*, **46**, 197—200 (1999).
49) Shen Y.-C., Lin S.-L., Chein C.-C., *Phytochemistry*, **44**, 891—895 (1997).
50) Shen Y.-C., Lin S.-L., *Planta Medica*, **62**, 515—518 (1996).
51) Hosny M., *Phytochemistry*, **47**, 1569—1576 (1998).
52) Tanahashi T., Nagakura N., Inouye K., Inouye H., *Tetrahedron Lett.*, **29**, 1793—1796 (1988).
53) Zhang Y.-J., Liu Y.-Q., Pu X.-Y., Yang C.-R., *Phytochemistry*, **38**, 899—903 (1995).
54) Shen Y. C., Hsieh P.-W., *J. Nat. Prod.*, **60**, 453—457 (1997).
55) Tanahashi T., Takenaka Y., Nagakura N., Nishi T., *J. Nat. Prod.*, **62**, 1311—1315 (1999).
56) Ma W.-G., Fuzzati N., Wolfender J.-L., Yang C.-R., Hostettmann K., *Phytochemistry*, **43**, 805—810 (1996).
57) Chulia A. J., Vercauteren J., Kaouadji M., *Phytochemistry*, **36**, 377—382 (1994).
58) Tanahashi T., Takenaka Y., Nagakura N., *Phytochemistry*, **41**, 1341—1345 (1996).
59) Benkrief R., Ranarivelo Y., Skaltsounis A.-L., Tillequin F., Koch M., Pusset J., Sevenet T., *Phytochemistry*, **47**, 825—832 (1998).
60) Takenaka Y., Tanahashi T., Nagakura N., *Phytochemistry*, **48**, 317—322 (1998).
61) Graikou K., Aligiannis N., Chinou I. B., Harvala C., *Z. Naturforsch.*, **57c**, 95—99 (2002).
62) Skaltsounis A. L., Sbahi S., Demetzos C., Pusset J., *Ann. Pharm. Fr.*, **47**, 249—254 (1989).
63) Tomassini L., Foddai S., Serafini M., Cometa M. F., *J. Nat. Prod.*, **63**, 998—999 (2000).
64) Kita M., Kigoshi H., Uemura D., *J. Nat. Prod.*, **64**, 1090—1092 (2001).
65) Machida K., Asano J., Kikuchi M., *Phytochemistry*, **39**, 111—114 (1995).
66) Muller A. A., Weigend M., *Phytochemistry*, **49**, 131—135 (1998).
67) Muller A. A., Kufer J. K., Dietl K. G., Weigend M., *Phytochemistry*, **49**, 1705—1707 (1998).
68) Muller A. A., Weigend M., *Phytochemistry*, **50**, 615—618 (1999).
69) Xiao W., Li S., Niu X., Zhao Y., Sun H., *Tetrahedron Lett.*, **46**, 5743—5746 (2005).
70) Wegener T., *Z. Phytother.*, **19**, 284—294 (1998).
71) Boje K., Lechtenberg M., Nahrstedt A., *Planta Medica*, **69**, 820—825 (2003).
72) Chrubasik S., Eisenberg E., *Pain Clinic*, **11**, 171—178 (1999).
73) Chrubasik S., Junck H., Breitschwerdt H., Conradt C., Zappe H., *Eur. J. Anasthesiol.*, **16**, 118—129 (1999).
74) Lee T. B., "Illustrated Flora of Korea," Hyangmoon Publ. Co., Seoul, 1980, p. 714.
75) Ju H. K., Moon T. C., Lee E., Baek S.-H., An R.-B., Bae K., Son K. H., Kim H. P., Kang S. S., Lee S. H., Son J. K., Chang H. W., *Planta Medica*, **69**, 950—953 (2003).
76) Park K. S., Chang I.-M., *Planta Medica*, **70**, 778—779 (2004).
77) Benito P. B., Lanza A. M. D., Sen A. M. S., Galindez J. D. S., Matellano L. F., Gomez A. S., Martinez M. J. A., *Planta Medica*, **66**, 324—328 (2000).
78) 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).
79) Kumarasamy Y., Nahar L., Cox P. J., Jaspars M., Sarker S. D., *Phytomedicine*, **10**, 344—347 (2003).
80) Dai J.-Q., Liu Z.-L., Yang L., *Phytochemistry*, **59**, 537—542 (2002).
81) Yuan C.-S., Zhang Q., Xie W.-D., Yang X.-P., Jia Z.-J., *Pharmazie*, **58**, 428—430 (2003).
82) Bolzani V. D. S., Izumisawa C. M., Young M. C. M., Trevisan L. M. V., Kingston D. G. I., Gunatilaka A. L., *Phytochemistry*, **46**, 305—308 (1997).
83) Wang C.-C., Chen H.-L., Yang L.-L., *Taiwan Kexue*, **51**, 1—18 (1998).
84) Fukuyama Y., Minoshima Y., Kishimoto Y., Chen I.-S., Takahashi H., Esumi T., *J. Nat. Prod.*, **67**, 1833—1838 (2004).
85) Fukuyama Y., Nakade K., Minoshima Y., Yokoyama R., Zhai H., Mitsumoto Y., *Biorg. Med. Chem. Lett.*, **12**, 1163—1166 (2002).
86) Nguyen A.-T., Foutaine J., Malonne H., Claeys M., Luhmer M., Duez P., *Phytochemistry*, **66**, 1186—1191 (2005).
87) Kuruuzum-uz A., Guvenalp Z., Demirezer L. O., Bergere I., Stroch K., Zeeck A., *Phytochemistry*, **61**, 937—941 (2002).
88) Buyukokuroglu M. E., Demirezer L. O., Guvenalp Z., *Pharmazie*, **8**, 559—561 (2002).
89) 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).
90) Hirazumi A., Furusawa E., *Proc. West Pharmacol. Soc.*, **39**, 25—26 (1996).
91) Dictionary of Chinese Crude Drugs, Jinag Shu New Medical College, Shanghai Scientific Ethnologic Publisher, Shanghai, 1997, pp. 1914—1915.
92) Jin J. L., Lee S., Lee Y. Y., Heo J. E., Kim J. M., Yun-Choi H. S., *Planta Medica*, **71**, 578—580 (2005).
93) Deng S. X., Mo Y. Q., *Zhongcaoyao*, **20**, 419—421 (1989).
94) Rice-Evans C. A., Miller N. J., Bolwell P. G., Barmley P. M., Pridham J. B., *Free Radical Research*, **22**, 375—383 (1995).
95) Oh H., Ko F.-K., Kim D.-H., Jang K.-K., Park S.-E., Lee H.-S., Kim Y.-C., *Phytother. Res.*, **17**, 417—419 (2003).
96) Cuendet M., Potterat O., Hostettmann K., *Pharmaceutical Biology*, **37**, 318—320 (1999).
97) Sridhar S., Subbaraju G. V., Venkateswarlu Y., Venugopal R. T., *J. Nat. Prod.*, **67**, 2012—2016 (2004).
98) Lu C.-M., Yang J.-J., Wang P.-Y., Lin C.-C., *Planta Medica*, **66**, 374—377 (2000).
99) Tasdemir D., Guner N. D., Perozzo R., Brun R., Donmez A. A., Calis I., Ruedi P., *Phytochemistry*, **66**, 355—362 (2005).
100) Kirmizibekmez H., Calis I., Perozzo R., Brun R., Donmez A. A., Linden A., Ruedi P., Tasdemir D., *Planta Medica*, **70**, 711—717 (2004).
101) Bermejo P., Abad M. J., Diaz A. M., Fernandez L., Santos J. D., Sanchez S., Villaescusa L., Carrasco L., Irurzun A., *Planta Medica*,

68, 106—110 (2002).
102) Singh V. K., Ali Z. A., *Fitoterapia*, **65**, 68—74 (1994).
103) Alam M. M., Anis M., *J. Ethnopharmacol.*, **19**, 85—88 (1987).
104) Sahu T. R., *Ancient Sci. Life*, **3**, 245—249 (1984).
105) Bergman S., *Rev. Infect. Dis.*, **13**, S454—S462 (1991).
106) 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).
107) "Thai Medicinal Plants," ed. by Bunyapraphatsara N., Chokechaijaroenporn O., Mahidol University and National Center for Genetic Engineering and Biotechnology, Bangkok, 2000, pp. 675—677.
108) Yoosook C., Panpisutchai Y., Chaichana S., Santisuk T., Reutrakul V., *J. Ethnopharmacol.*, **67**, 179—187 (1999).
109) Suksmrarn S., Wongkrajang K., Kirtikara K., Suksamrarn A., *Planta Medica*, **69**, 877—879 (2003).
110) Aquino R., Capasso A., Simone F. D., Garofalo L., Pizza C., Sorrentino L., *Phytother. Res.*, **10**, 161—166 (1996).
111) Yamahara J., Kobayashi M., Matsuda H., Aoki S., *J. Ethnopharmacol.*, **33**, 31—35 (1991).
112) Lin C. C., Kan W. S., *Am. J. Chin. Med.*, **18**, 35—43 (1990).
113) Samuelsen A. B., *J. Ethnopharmacol.*, **71**, 1—21 (2000).
114) Chiang L.-C., Ng L. T., Chiang W., Chang M.-Y., Lin C.-C., *Planta Medica*, **69**, 600—604 (2003).
115) Schwarz B., Wray V., Proksch P., *Phytochemistry*, **42**, 633—636 (1996).
116) Pungitore C. R., Ayub M. J., Garcia M., Borkowski E. J., Sosa M. E., Ciuffo G., Giordano O. S., Tonn C. E., *J. Nat. Prod.*, **67**, 357—361 (2004).
117) Pauli G. F., Offerdinger-Daegel S., Teborg D., *Dtsch. Apoth. Ztg.*, **135**, 21—34 (1995).
118) Stevenson P. C., Simmonds M. S. J., Sampson J., Houghton P. J., Grice P., *Phytother. Res.*, **16**, 33—35 (2002).
119) Garg H. S., Bhandari S. P. S., Tripathi S. C., Patnaik G. K., Puri A., Saxena R., Saxena R. P., *Phytother. Res.*, **8**, 224—228 (1994).
120) Rios J. L., Recio M. C., Giner R. M., Sanz M. J., Terencio M. C., Manez S., *Planta Medica*, **57** (Suppl. 2), 432—436 (1991).
121) 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).
122) Brinton R. D., Yamazaki R. S., *Pharmaceutical Res.*, **15**, 386—398 (1998).
123) Li Y., Ohizumi Y., *Yakugaku Zasshi*, **124**, 417—424 (2004).
124) Li Y., Ishibashi M., Satake M., Oshima Y., Ohizumi Y., *Chem. Pharm. Bull.*, **51**, 1103—1105 (2003).
125) He Z.-D., Ueda S., Inoue K., Akaji M., Fujita T., Yang C.-R., *Phytochemistry*, **35**, 177—181 (1994).