

-----文献-----

- Cook, C.D. et al., J.A.C.S., 1955, 77, 1672, (4-Me ether)
Karhu, M., J.C.S. Perkin 1, 1981, 303, (合成法)
Lu, Q. et al., CA, 1990, 113, 55845, (分離)
Omura, K., Synth. Commun., 2000, 30, 877, (1-Me ether)

§ 9,10-Dihydroxy-4,6-heptadecadiyn-3-one; (9S,10S)-form

[化学名・別名] Panaxacol

[CAS No.] 106828-96-0

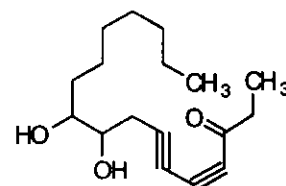
[化合物分類] 脂肪族化合物 (Acetylenic alcohol), 脂肪族化合物 (Miscellaneous acetylene),

[構造式]

[基原] 次の植物のカルスから分離: *Panax ginseng*

[比旋光度]: $[\alpha]_D +18.3$ (c, 1.0 in MeOH)

[UV]: [neutral] λ_{max} 205 (ϵ); 245 (sh) (ϵ); 255 (ϵ); 270 (ϵ); 286 (ϵ) (MeOH) [neutral] λ_{max} 205; 255; 270; 286; 540; 570 (MeOH) [neutral] λ_{max} 254 (ϵ 4000); 268 (ϵ 5100); 284 (ϵ 4200) (EtOH)



-----文献-----

- Fujimoto, Y. et al., Phytochemistry, 1987, 26, 2850
Fujimoto, Y. et al., Chem. Pharm. Bull., 1990, 38, 1447, (合成法, 絶対構造)

§ 9,10-Dihydroxy-4,6-heptadecadiyn-3-one; (9S,10S)-form, 3S(?) -Alcohol

[化学名・別名] 4,6-Heptadecadiyne-3,9,10-triol. Dihydropanaxacol

[CAS No.] 113122-25-1

[化合物分類] 脂肪族化合物 (Acetylenic alcohol),

[構造式]

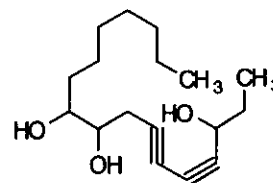
[分子式] $C_{17}H_{28}O_3$

[分子量] 280.406

[正確な分子量] 280.203845

[基原] 次の植物から分離: *Panax ginseng*

[溶解性] EtOAc, エーテルに可溶



-----文献-----

- Fujimoto, Y. et al., Phytochemistry, 1987, 26, 2850
Fujimoto, Y. et al., Chem. Pharm. Bull., 1990, 38, 1447, (合成法, 絶対構造)

§ 12,23-Epoxydammar-24-ene-3,20-diol; (3 β ,12 β ,20S,23R)-form, 3,20-Di-O- β -D-glucopyranoside

[化学名・別名] Ginsenoside La

[CAS No.] 123617-34-5

[化合物分類] テルペノイド (Dammarane triterpenoid)

[構造式]

[分子式] $C_{52}H_{76}O_{13}$

[分子量] 783.007

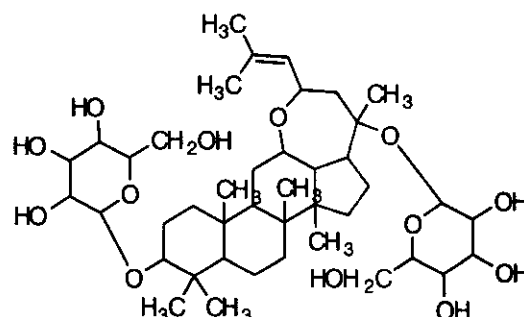
[正確な分子量] 782.481645

[基原] *Panax ginseng*

[性状] 針状結晶 (MeOH)

[融点] Mp 179-180 °C

[比旋光度]: $[\alpha]_D -18.4$ (Py)



-----文献-----

- Zhang, S. et al., Chem. Pharm. Bull., 1989, 37, 1966

§ 9,10-Epoxy-4,6-heptadecadiyn-3-ol

[化学名・別名] 8-(3-Heptyloxiranyl)-4,6-octadiyn-3-ol (CAS 名)

[CAS No.] 138828-83-8

[化合物分類] 脂肪族化合物 (Acetylenic alcohol)

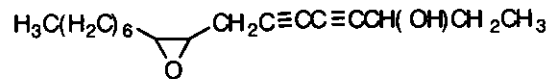
[構造式]

[分子式] $C_{17}H_{26}O_2$

[分子量] 262.391

[正確な分子量] 262.19328

[基原] 次の植物から分離: *Panax ginseng*



-----文献-----

Hirakura, K. et al., *Phytochemistry*, 1991, 30, 3327, (分離)

§ Ginsenol

[化学名・別名] Octahydro-2,2,4,7a-tetramethyl-1,4-ethano-3aH-inden-3a-ol (CAS名)

[CAS No.] 117591-80-7

[化合物分類] テルペノイド (Miscellaneous tricyclic sesquiterpenoid)

[構造式]

[分子式] $C_{15}H_{26}O$

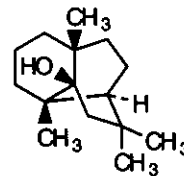
[分子量] 222.37

[正確な分子量] 222.198365

[基原] 次の植物の細根から分離: *Panax ginseng*

[性状] オイル

[比旋光度]: $[\alpha]_D -18.3$ (c, 1.1 in $CHCl_3$)



-----文献-----

Iwabuchi, H. et al., *Chem. Pharm. Bull.*, 1988, 36, 2447, (分離, H-NMR, C13-NMR, 構造決定)

§ Ginsenoyne I

[化学名・別名] 9,10-Epoxy-1,4-heptadecadien-6-yn-3-ol

[CAS No.] 141947-40-2

[化合物分類] 脂肪族化合物 (Acetylenic alcohol)

[構造式]

[分子式] $C_{17}H_{26}O_2$

[分子量] 262.391

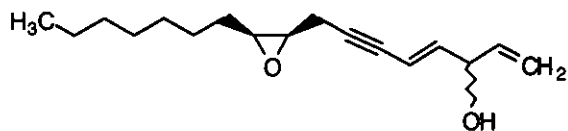
[正確な分子量] 262.19328

[基原] 次の植物の根から分離: *Panax ginseng*

[性状] オイル

[比旋光度]: $[\alpha]_D -81.1$ (c, 4.35 in $CHCl_3$)

[UV]: [neutral] λ_{max} 229 (ϵ 14500) (EtOH)



-----文献-----

Hirakura, K. et al., *Phytochemistry*, 1992, 31, 899, (分離, H-NMR, C13-NMR, 構造決定)

§ Ginsenoyne M

[化合物分類] 脂肪族化合物 (Tricycloheteroalicyclics (1 × O)), テルペノイド (Meroterpenoid) 脂肪族化合物 (Miscellaneous acetylene)

[構造式]

[分子式] $C_{32}H_{46}O_2$

[分子量] 462.714

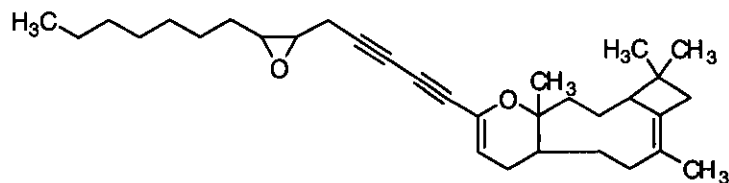
[正確な分子量] 462.34978

[基原] *Panax ginseng* の根

[性状] オイル

[比旋光度]: $[\alpha]_D -58.6$ (c, 2.1 in $CHCl_3$)

[UV]: [neutral] λ_{max} 212 (log ϵ 4.35); 241 (log ϵ 3.79); 253 (log ϵ 4.01); 267 (log ϵ 4.22); 283 (log ϵ 4.17) (EtOH)



-----文献-----

Hirakura, K. et al., *Heterocycles*, 2000, 53, 2451

§ Ginsenoyne M; $\Delta^{3,15}$ -Isomer

[化学名・別名] Ginsenoyne L

[化合物分類] テルペノイド (Meroterpenoid) 脂肪族化合物 (Miscellaneous acetylene), 脂肪族化合物

(Tricycloheteroalicyclics (1 × O))

[構造式]

[分子式] C₃₂H₄₆O₂

[分子量] 462.714

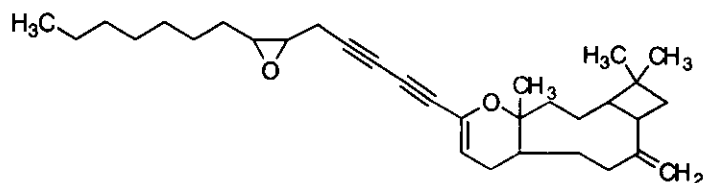
[正確な分子量] 462.34978

[基原] *Panax ginseng* の根

[性状] オイル

[比旋光度]: [α]_D -37.3 (c, 3.3 in CHCl₃)

[UV]: [neutral] λ_{max} 212 (log ε 4.25); 240 (log ε 3.72); 253 (log ε 3.95); 267 (log ε 4.15); 283 (log ε 4.1) (EtOH)



-----文献-----

Hirakura, K. et al., *Heterocycles*, 2000, 53, 2451

§ Ginsenoyne N

[化合物分類] 脂肪族化合物 (Tricycloheteroalicyclics (1 × O)), テルペノイド (Meroterpenoid) 脂肪族化合物 (Miscellaneous acetylene)

[構造式]

[分子式] C₃₂H₄₆O₂

[分子量] 462.714

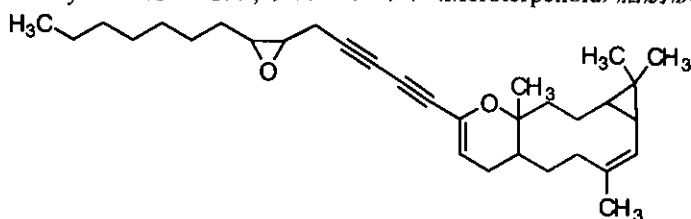
[正確な分子量] 462.34978

[基原] *Panax ginseng* の根

[性状] オイル

[比旋光度]: [α]_D +10.3 (c, 1.7 in CHCl₃)

[UV]: [neutral] λ_{max} 212 (log ε 4.33); 240 (log ε 3.77); 253 (log ε 3.95); 267 (log ε 4.15); 283 (log ε 4.11) (EtOH)



-----文献-----

Hirakura, K. et al., *Heterocycles*, 2000, 53, 2451

§ N²-γ-Glutamylarginine; L,L-form

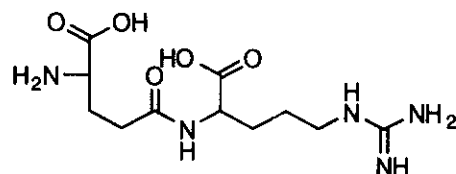
[CAS No.] 31106-03-3

[化合物分類] アミノ酸とペプチド (Dipeptide)

[構造式]

[基原] *Allium cepa* (タマネギ), *Panax ginseng*, *Sphagnum palustre*

[比旋光度]: [α]_D²³ +9.9 (c, 1 in 1M HCl)



-----文献-----

Matsutani, H. et al., *Phytochemistry*, 1988, 27, 931, (分離, 合成法)

Chen, Z.-K. et al., *J. Pept. Res.*, 1998, 52, 137, (分離)

§ 1,16-Heptadecadiene-4,6-diyne-3,9,10-triol (CAS 名)

[化学名・別名] Ginsenoyne C

[CAS No.] 139163-35-2

[化合物分類] 脂肪族化合物 (Acetylenic alcohol)

[構造式] H₂C=CHCH(OH)C≡CC≡CCH₂CH(OH)CH(OH)(CH₂)₅CH=CH₂

[分子式] C₁₇H₂₈O₃

[分子量] 276.375

[正確な分子量] 276.172545

[基原] 次の植物の根から分離: *Panax ginseng*

[性状] 無定形の粉末

[比旋光度]: [α]_D -16.5 (c, 1.5 in CHCl₃)

[UV]: [neutral] λ_{max} 201 ; 231 ; 243 ; 257 (MeOH)

-----文献-----

Hirakura, K. et al., *Phytochemistry*, 1991, 30, 3327, (分離, IR, UV, Mass, H-NMR, C13-NMR)

§ 1,9-Heptadecadiene-4,6-diyn-3-ol; (S)-(Z)-form

[化学名・別名] Panaxynol, Falcarinol

[CAS No.] 81203-57-8

[化合物分類] 脂肪族化合物 (Acetylenic alcohol)

[構造式]

[基原] 次の植物から分離: *Panax ginseng*, *Saposhnikovia*

divaricata

[用途] 細胞毒作用

[比旋光度]: $[\alpha]_D^{25} +29.4$ (c, 1.7 in CHCl₃), $[\alpha]_D +33.8$ (c, 0.53 in CHCl₃)

-----文献-----

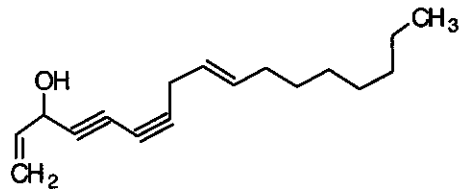
Bohlmann, F. et al., Chem. Ber., 1965, 98, 3010; 1966, 99, 3552, (分離, 合成法)

Terada, A. et al., Bull. Chem. Soc. Jpn., 1989, 62, 2977, (分離, 成書)

Hirakura, K. et al., Phytochemistry, 1994, 35, 963, (Panaxynol linoleate)

Kobaisy, M. et al., J. Nat. Prod., 1997, 60, 1210, (分離, 絶対構造)

Zheng, G. et al., Tet. Lett., 1999, 40, 2181, (合成法, 絶対構造, NMR, 性質)



§ 1,9-Heptadecadiene-4,6-diyn-3-ol; (S)-(Z)-form, (Z,Z)-(9,12-Octadecadienoyl)

[化学名・別名] Panaxynol linoleate

[CAS No.] 155551-18-1

[化合物分類] 脂肪族化合物 (Acetylenic alcohol)

[構造式]

[分子式] C₃₅H₅₄O₂

[分子量] 506.81

[正確な分子量] 506.41238

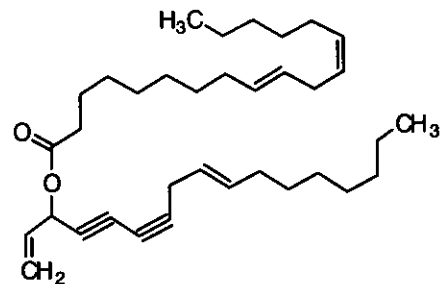
[基原] *Panax ginseng*

[性状] オイル

[比旋光度]: $[\alpha]_D +18.7$ (c, 6.8 in CHCl₃)

-----文献-----

Hirakura, K. et al., Phytochemistry, 1994, 35, 963, (Panaxynol linoleate)



§ 9,16-Heptadecadiene-4,6-diyn-3-ol; (Z)-form, 9,10-Epoxyde, Ac

[化学名・別名] Ginsenoyne H

[CAS No.] 142465-54-1

[化合物分類] 脂肪族化合物 (Acetylenic alcohol)

[構造式]

[分子式] C₁₉H₂₆O₃

[分子量] 302.413

[正確な分子量] 302.188195

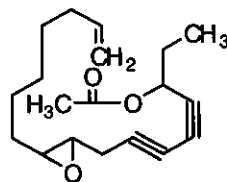
[基原] 次の植物の根から分離: *Panax ginseng*

[性状] オイル

[比旋光度]: $[\alpha]_D -208.9$ (c, 2.27 in CHCl₃)

-----文献-----

Hirakura, K. et al., Phytochemistry, 1991, 30, 4053, (Ginsenoyne H)



§ 1,8,10-Heptadecatriene-4,6-diyn-3,12-diol; (all-E)-form

[CAS No.] 143966-10-3

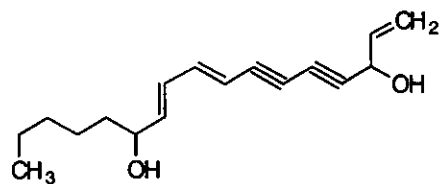
[化合物分類] 脂肪族化合物 (Acetylenic alcohol)

[構造式]

[基原] *Panax ginseng*

-----文献-----

Lutomski, J. et al., Herba Pol., 1991, 37, 113, (分離)



§ 1,9,16-Heptadecatriene-4,6-diyn-3-ol; (-)-(Z)-form, 9,10-Epoxyde

[化学名・別名] 9,10-Epoxy-1,16-heptadecadiene-4,6-diyn-3-ol. Ginsenoyne A

[CAS No.] 139163-34-1

[化合物分類] 脂肪族化合物 (Acetylenic alcohol)

[構造式]

[分子式] $C_{17}H_{22}O_2$

[分子量] 258.36

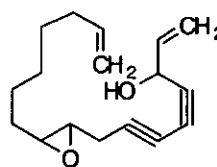
[正確な分子量] 258.16198

[基原] 次の植物の根から分離: *Panax ginseng*

[性状] オイル

[比旋光度]: $[\alpha]_D -121.9$ (c, 1.0 in $CHCl_3$)

[UV]: [neutral] λ_{max} 201; 230; 243; 256 (EtOH)



-----文献-----

Hirakura, K. et al., *Phytochemistry*, 1994, 35, 963, (Ginsenoyne A linoleate)

§ 1,9,16-Heptadecatriene-4,6-diyn-3-ol; (-)-(Z)-form, 9,10-Epoxyde, Ac

[化学名・別名] Ginsenoyne F

[CAS No.] 142449-71-6

[化合物分類] 脂肪族化合物 (Acetylenic alcohol)

[構造式]

[分子式] $C_{19}H_{24}O_3$

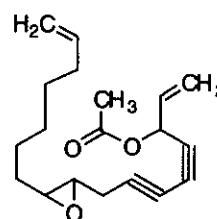
[分子量] 300.397

[正確な分子量] 300.172545

[基原] 次の植物の根から分離: *Panax ginseng*

[性状] オイル

[比旋光度]: $[\alpha]_D -54.2$ (c, 2.35 in $CHCl_3$)



-----文献-----

Hirakura, K. et al., *Phytochemistry*, 1994, 35, 963, (Ginsenoyne A linoleate)

§ 1,9,16-Heptadecatriene-4,6-diyn-3-ol; (-)-(Z)-form, 9,10-Epoxyde, 9,12-octadecadienoyl (Z,Z-)

[化学名・別名] Ginsenoyne A

[CAS No.] 155551-20-5

[化合物分類] 脂肪族化合物 (Acetylenic alcohol)

[構造式]

[分子式] $C_{35}H_{52}O_3$

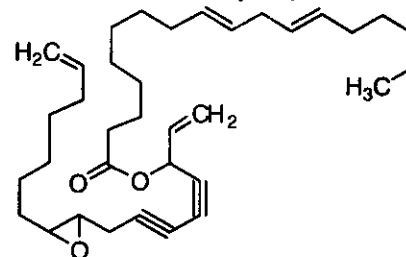
[分子量] 520.794

[正確な分子量] 520.391645

[基原] *Panax ginseng*

[性状] オイル

[比旋光度]: $[\alpha]_D -13.9$ (c, 6 in $CHCl_3$)



-----文献-----

Hirakura, K. et al., *Phytochemistry*, 1994, 35, 963, (Ginsenoyne A linoleate)

§ 1,4,9-Heptadecatrien-6-yn-3-ol; (3S,4E,9Z)-form

[化学名・別名] Ginsenoyne J

[CAS No.] 141947-41-3

[化合物分類] 脂肪族化合物 (Acetylenic alcohol)

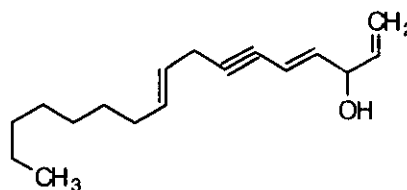
[構造式]

[基原] *Panax ginseng* の根

[性状] オイル

[比旋光度]: $[\alpha]_D -24.6$ (c, 2.2 in $CHCl_3$)

[UV]: [neutral] λ_{max} 198 (ϵ 10300); 230 (ϵ 18200) (EtOH)



-----文献-----

Japan. Pat., 1992, 04 352 742; CA, 119, 48933j, (ketone)

Hirakura, K. et al., *Phytochemistry*, 1992, 31, 899, (分離, H-NMR, C13-NMR)

§ 1-Heptadecene-4,6-diyne-3,9-diol (CAS 名)

[CAS No.] 77084-19-6

[化合物分類] 脂肪族化合物 (Acetylenic alcohol)

[構造式] $\text{H}_3\text{C}(\text{CH}_2)_7\text{CH}(\text{OH})\text{CH}_2\text{C}\equiv\text{CC}\equiv\text{CCH}(\text{OH})\text{CH}=\text{CH}_2$

[分子式] $\text{C}_{17}\text{H}_{26}\text{O}_2$

[分子量] 262.391

[正確な分子量] 262.19328

[基原] 次の植物の根から分離: *Panax ginseng*

[性状] 結晶 (petrol)

[融点] Mp 80-85 °C で分解

-----文献-----

Dabrowski, Z. et al., *Phytochemistry*, 1980, 19, 2464, (分離, 構造決定)

§ 8-Heptadecene-4,6-diyne-3,10-diol; (E)-form, 10-Ac

[化学名・別名] 10-Acetoxy-8-heptadecene-4,6-diyne-3-ol

[CAS No.] 143966-09-0

[化合物分類] 脂肪族化合物 (Acetylenic alcohol)

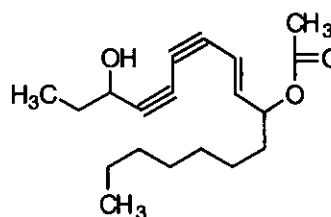
[構造式]

[分子式] $\text{C}_{19}\text{H}_{28}\text{O}_3$

[分子量] 304.428

[正確な分子量] 304.203845

[基原] *Panax ginseng*



-----文献-----

Lutowski, J. et al., *Herba Pol.*, 1991, 37, 113, (分離)

§ 1-Heptadecene-4,6-diyne-3,9,10-triol; (3R,9R,10R)-form

[化学名・別名] Panaxytriol. Falcarintriol

[CAS No.] 87005-03-6

[化合物分類] 脂肪族化合物 (Acetylenic alcohol)

[構造式]

[基原] 次の植物から分離: *Panax ginseng*, *Panax quinquefolium*

[用途] 抗腫瘍活性を示す

[性状] 針状結晶 (H_2O)

[比旋光度]: $[\alpha]_D^{20} -19$ (c, 1 in CHCl_3)

[その他のデータ] 絶対構造は最終的に 1999 年に確定した

-----文献-----

Matsunaga, H. et al., *Chem. Pharm. Bull.*, 1989, 37, 1279, (分離, UV, H-NMR, C13-NMR, 合成法)

Kim, S.I. et al., *Yakhak Hoeji*, 1989, 33, 118; *CA*, 111, 146363, (10-Acetylpanaxytriol)

Fujimoto, Y. et al., *Chem. Pharm. Bull.*, 1991, 39, 521, (分離, Mass, C13-NMR, 構造決定)

Kobayashi, M. et al., *Tetrahedron*, 1997, 53, 15691, (絶対構造)

Lu, W. et al., *Synlett*, 1998, 737, (合成法)

Lu, W. et al., *Chin. Chem. Lett.*, 1999, 10, 201, (合成法)

Lu, W. et al., *Tetrahedron*, 1999, 55, 7157, (合成法, 絶対構造)

Gurjar, M.K. et al., *Tetrahedron*, 1999, 55, 12563, (合成法)

§ 1-Heptadecene-4,6-diyne-3,9,10-triol; (3R,9R,10R)-form, 10-Ac

[化学名・別名] 10-Acetylpanaxytriol

[CAS No.] 122855-48-5

[化合物分類] 脂肪族化合物 (Acetylenic alcohol)

[構造式]

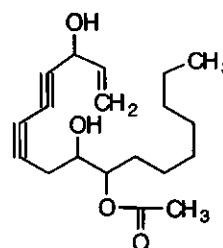
[分子式] $\text{C}_{19}\text{H}_{28}\text{O}_4$

[分子量] 320.428

[正確な分子量] 320.19876

[基原] *Panax ginseng* の根

[用途] 細胞毒作用



-----文献-----

Kim, S.I. et al., Yakhak Hoeji, 1989, 33, 118; CA, 111, 146363, (10-Acetylpanaxytriol)

§ 9-Heptadecene-4,6-diyne-3-one; (Z)-form, 9R,10S-Epoxyde, 3-alcohol

[化学名・別名] 9,10-Epoxy-4,6-heptadecadiyn-3-ol. Ginsenoyne D

[化合物分類] 脂肪族化合物 (Miscellaneous acetylene)

[構造式]

[分子式] $C_{17}H_{26}O_2$

[分子量] 262.391

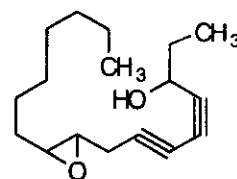
[正確な分子量] 262.19328

[基原] 次の植物の根から分離: *Panax ginseng*

[性状] オイル

[比旋光度]: $[\alpha]_D -90.7$ (c, 3.0 in $CHCl_3$)

[その他のデータ] λ_{max} 200, 230, 241, 255 nm (EtOH)



-----文献-----

Hirakawa, K. et al., Phytochemistry, 1991, 30, 3327; 4053, (Ginsenoyne)

§ 9-Heptadecene-4,6-diyne-3-one; (Z)-form, 9R,10S-Epoxyde, 3-alcohol, Ac

[化学名・別名] Ginsenoyne G

[CAS No.] 142449-72-7

[化合物分類] 脂肪族化合物 (Acetylenic alcohol)

[構造式]

[分子式] $C_{19}H_{28}O_3$

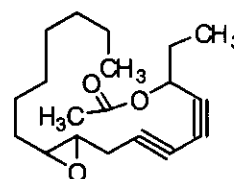
[分子量] 304.428

[正確な分子量] 304.203845

[基原] 次の植物の根から分離: *Panax ginseng*

[性状] オイル

[比旋光度]: $[\alpha]_D -182.6$ (c, 3.77 in $CHCl_3$)



-----文献-----

Hirakawa, K. et al., Phytochemistry, 1991, 30, 3327; 4053, (Ginsenoyne)

§ 10-Hydroperoxy-1,8-heptadecadiene-4,6-diyne-3-ol

[化学名・別名] Ginsenoyne K

[CAS No.] 141947-42-4

[化合物分類] 脂肪族化合物 (Acetylenic alcohol)

[構造式] $H_3C(CH_2)_6CH(OOH)CH=CHC \equiv CC \equiv CCH(OH)CH=CH_2$

[分子式] $C_{17}H_{24}O_3$

[分子量] 276.375

[正確な分子量] 276.172545

[基原] *Panax ginseng* の根

[性状] 青白い黄色のオイル

[比旋光度]: $[\alpha]_D -27.2$ (c, 3.78 in $CHCl_3$)

-----文献-----

Hirakura, K. et al., Phytochemistry, 1992, 31, 899, (分離, H-NMR, C13-NMR, 構造決定)

§ β -Neoclovene

[化学名・別名] Octahydro-2,2,7a-trimethyl-4-methylene-1,3a-ethano-3aH-indene (CAS 名)

[CAS No.] 56684-96-9

[化合物分類] テルペノイド (Miscellaneous tricyclic sesquiterpenoid)

[構造式]

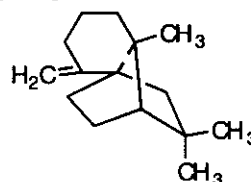
[分子式] $C_{15}H_{24}$

[分子量] 204.355

[正確な分子量] 204.1878

[基原] *Panax ginseng*

[比旋光度]: $[\alpha]_D^{25} -30$ (MeOH)



-----文献-----

Yoshihara, K. et al., Bull. Chem. Soc. Jpn., 1975, 48, 2078, (分離, 構造決定)

§ **Oleanolic acid bisdesmosides; Triglycosides, 3-O-[β-D-Glucopyranosyl-(1→2)-β-D-glucuronopyranoside] 28-O-β-D-glucopyranosyl ester**

[化学名・別名] Ginsenoside Ro. Chikusetsusaponin V

[CAS No.] 34367-04-9

[化合物分類] テルペノイド (Oleanane triterpenoid)

[構造式]

[分子式] C₄₈H₇₆O₁₉

[分子量] 957.117

[正確な分子量] 956.498085

[基原] *Panax ginseng*

[性状] 結晶 (MeOH)

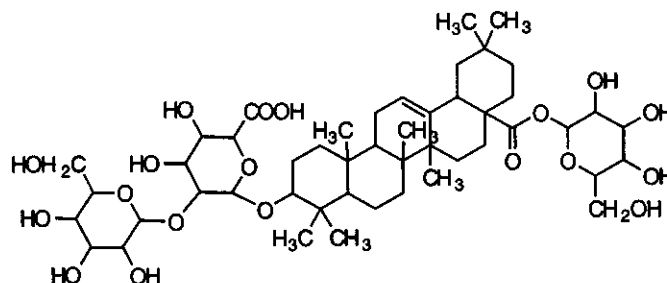
[融点] Mp 239-241 °C

[比旋光度]: [α]_D²² +15.3 (c, 1 in MeOH)

[傷害・毒性] 50%致死量 (LD₅₀) (マウス, 腹

腔内投与) 656 mg/kg

[化学物質毒性データ総覧 (RTECS) 登録番号] FM3375000



-----文献-----

C.Djerassi et al., Dictionary of Natural Products, Chapman, Hall, 2002

Lin, T.D. et al., Chem. Pharm. Bull., 1976, 24, 253, (Chikusetsusaponins Ib and IVa)

RTECS (化学物質毒性データ)

生体影響物質 : 医薬品, 天然物.

健康障害に関するデータ

急性毒性に関するデータ

<<試験方法>> LD50 試験 (50%致死量試験).

曝露経路 : 腹腔内投与

被験動物 : げっ歯類-マウス

投与量・期間 : 656 mg/kg

毒性影響 : [行動] 傾眠 (全身活動度の低下).
[行動] 活動度の変化 (特定の試験).
[肺, 胸郭, または呼吸] 呼吸抑制.

参照文献

CPBTAL Chemical and Pharmaceutical Bulletin. (Japan Pub. Trading Co., USA, 1255 Howard St., San Francisco, CA 94103) V.6- 1958- [Vol., 頁, 年 (19-)] 25, 1017, 1977

<<試験方法>> LD50 試験 (50%致死量試験).

曝露経路 : 静脈注射

被験動物 : げっ歯類-マウス

投与量・期間 : 278 mg/kg

毒性影響 : [行動] 傾眠 (全身活動度の低下).
[行動] 活動度の変化 (特定の試験).
[肺, 胸郭, または呼吸] 呼吸抑制.

参照文献

CPBTAL Chemical and Pharmaceutical Bulletin. (Japan Pub. Trading Co., USA, 1255 Howard St., San Francisco, CA 94103) V.6- 1958- [Vol., 頁, 年 (19-)] 25, 1017, 1977

§ **Oxalic acid; Dibutyl ester**

[CAS No.] 2050-60-4

[化合物分類] 脂肪酸化合物 (Other saturated unbranched ester)

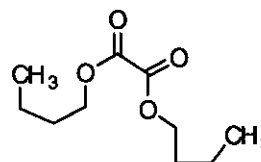
[構造式]

[分子式] C₁₀H₁₈O₄

[分子量] 202.25

[正確な分子量] 202.12051

[基原] *Juglans regia*, *Panax ginseng*



[性状] 液体
[融点] Mp-29
[沸点] Bp 239-240 °C

-----文献-----

Sah, P.P.T. et al., J.A.C.S., 1931, 53, 3901, (エステル, 性質)
Org. Synth., Coll. Vol., 1, 1932, 259, (エステル)
Welcher, R.P. et al., J.A.C.S., 1959, 81, 2541, (Ethyl oxamate)
Lespagnoll, C., Bull. Soc. Chim. Fr., 1960, 110, (エステル)
Shingaki, T. et al., Bull. Chem. Soc. Jpn., 1972, 45, 3567, (Ethyl oxamate)
Karrer, W. et al., Konstitution und Vorkommen der Organischen Pflanzenstoffe, 2nd edn., Birkhauser Verlag, Basel, 1972, no. 835, (生育)
Kirk-Othmer Encycl. Chem. Technol., 3rd edn., Wiley, 1978, 16, 618, (レビュー)
Ullmann's Encycl. Ind. Chem., 5th Ed., VCH, Weinheim, 1985, A18, 247, (レビュー)
Dangerous Prop. Ind. Mater. Rep., 1989, 9, 13, (レビュー, haz)

§ 3 (15)-Panasinsanene

[化学名・別名] Decahydro-2,2,4a-trimethyl-8-methylenecyclobut [c] indene (CAS 名). β -Panasinsene
[CAS No.] 56684-97-0

[化合物分類] テルペノイド (Panasinsane sesquiterpenoid)

[構造式]

[分子式] $C_{15}H_{24}$

[分子量] 204.355

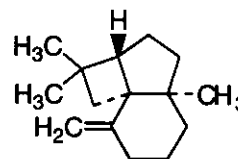
[正確な分子量] 204.1878

[基原] *Panax ginseng* のオイル

[性状] オイル

[比旋光度]: $[\alpha]_D^{20}$ -25 (c, 1 in MeOH)

[濃度] d^{20}_4 0.89



-----文献-----

Yoshihara, K. et al., Bull. Chem. Soc. Jpn., 1975, 48, 2078, (分離, 構造決定)
McMurry, J.E. et al., Tet. Lett., 1980, 2477, (合成法)
Iwabuchi, H. et al., Chem. Pharm. Bull., 1987, 35, 1975, (分離)

§ 10-Panasinsanene

[化学名・別名] 1,2,2a,3,4,4a,5,6-Octahydro-2,2,4a,8-tetramethylcyclobut [c] indene (CAS 名). α -Panasinsene

[CAS No.] 56633-28-4

[化合物分類] テルペノイド (Panasinsane sesquiterpenoid)

[構造式]

[分子式] $C_{15}H_{24}$

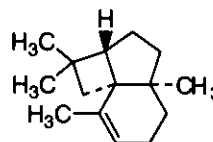
[分子量] 204.355

[正確な分子量] 204.1878

[基原] *Panax ginseng* のオイル

[性状] オイル

[比旋光度]: $[\alpha]_D^{25}$ -17 (c, 1.17 in CHCl₃)



-----文献-----

Yoshihara, K. et al., Bull. Chem. Soc. Jpn., 1975, 48, 2078, (分離, 構造決定)
McMurry, J.E. et al., Tet. Lett., 1980, 2477, (合成法)
Iwabuchi, H. et al., Chem. Pharm. Bull., 1987, 35, 1975, (分離)

§ 3-Panasinsanol; 3 α OH-form

[化学名・別名] Panasinsanol B

[CAS No.] 109785-99-1

[化合物分類] テルペノイド (Panasinsane sesquiterpenoid)

[構造式]

[分子式] $C_{15}H_{26}O$

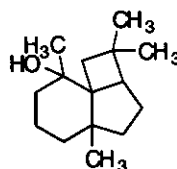
[分子量] 222.37

[正確な分子量] 222.198365

[基原] *Panax ginseng*

[性状] オイル

[比旋光度]: $[\alpha]_D^{25} -44.3$ (c, 0.70 in $CHCl_3$)



-----文献-----

Iwabuchi, H. et al., Chem. Pharm. Bull., 1987, 35, 1975

§ 3-Panasinsanol; 3 β OH-form

[化学名・別名] Panasinsanol A

[CAS No.] 80374-27-2

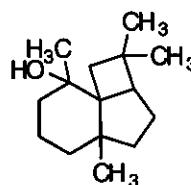
[化合物分類] テルペノイド (Panasinsane sesquiterpenoid)

[構造式]

[基原] *Panax ginseng*

[性状] オイル

[比旋光度]: $[\alpha]_D^{25} -51.9$ (c, 0.54 in $CHCl_3$)



-----文献-----

Iwabuchi, H. et al., Chem. Pharm. Bull., 1987, 35, 1975

§ Panaxadiol

[化学名・別名] 20R,25-Epoxydammarane-3 β , 12 β -diol. Ginsengenin II. Panaxol

[CAS No.] 19666-76-3

[化合物分類] テルペノイド (Dammarane triterpenoid)

[構造式]

[分子式] $C_{30}H_{52}O_3$

[分子量] 460.739

[正確な分子量] 460.391645

[基原] *Panax ginseng*

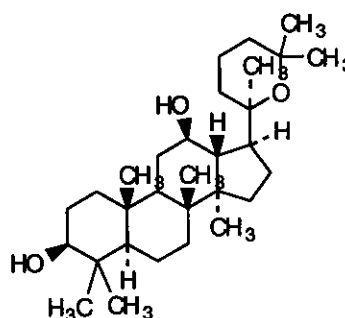
[性状] 結晶 (MeOH)

[融点] Mp 250 $^{\circ}C$

[比旋光度]: $[\alpha]_D^{18.5} +1$ (c, 1 in $CHCl_3$)

[UV]: [neutral] $\lambda_{max} 0$ (end) (ϵ) (MeOH)

[その他のデータ] おそらく非天然物



-----文献-----

Shibata, S. et al., Chem. Pharm. Bull., 1963, 11, 759; 762, (IR, Mass, H-NMR)

Nagai, Y. et al., Tetrahedron, 1971, 27, 881, (Panaxatriol)

Tanaka, O. et al., Chem. Pharm. Bull., 1972, 20, 1204, (構造決定)

Uvarova, N.I. et al., Zh. Org. Khim., 1976, 12, 984, (合成法)

Liu, W. et al., CA, 1988, 109, 6831, (Ginsenoside Rh₂)

Chang, Q. et al., Yaoxue Xuebao, 1995, 30, 506; CA, 123, 251259u, (1 β -Hydroxypanaxadiol)

§ Panaxadiol; 6 α -Hydroxy

[化学名・別名] 20,25-Epoxydammarane-3,6,12-triol. Panaxatriol

[CAS No.] 32791-84-7

[化合物分類] テルペノイド (Dammarane triterpenoid)

[構造式]

[分子式] $C_{30}H_{52}O_4$

[分子量] 476.738

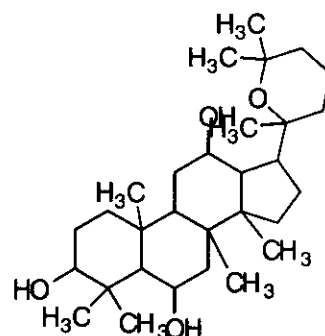
[正確な分子量] 476.38656

[基原] 次の植物から分離: *Panax ginseng*

[性状] 結晶

[融点] Mp 238-239 °C

[比旋光度]: $[\alpha]_D^{25} +14.2$ (CHCl₃)



-----文献-----

Nagai, Y. et al., Tetrahedron, 1971, 27, 881, (Panaxatriol)

§ Panaxydol

[化学名・別名] 8-(3-Heptyloxiranyl)-1-octene-4,6-diyne-3-ol (CAS 名).

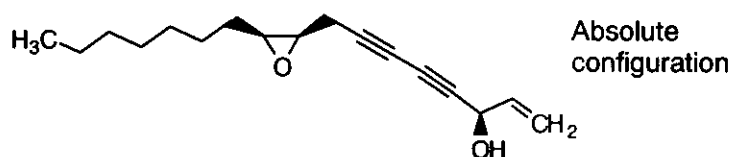
9,10-Epoxy-1-heptadecene-4,6-diyne-3-ol

[CAS No.] 72800-72-7

[関連 CAS No.] 134731-68-3, 139035-31-7, 139757-60-1, 155475-72-2

[化合物分類] 脂肪族化合物 (Acetylenic alcohol)

[構造式]



[分子式] $C_{17}H_{24}O_2$

[分子量] 260.375

[正確な分子量] 260.17763

[基原] 次の植物から分離: *Panax ginseng*. また *Panax quinquefolium* から得られる

[用途] 細胞毒作用, 組織培養中の白血病細胞の成長を抑制する

[比旋光度]: $[\alpha]_D -19.5$ (c, 0.6 in MeOH)

-----文献-----

Poplawski, J. et al., Phytochemistry, 1980, 19, 1539, (分離, 構造決定, 合成法)

Fujimoto, Y. et al., Chem. Pharm. Bull., 1988, 36, 4206; 1991, 39, 521, (分離, 構造決定)

Ahn, B.-Z. et al., Arch. Pharm. (Weinheim, Ger.), 1989, 322, 223, (Acetylpanaxydol)

Chung, C.B. et al., Bull. Korean Chem. Soc., 1991, 12, 122, (絶対構造)

Hirakura, K. et al., Phytochemistry, 1991, 30, 3327; 1994, 35, 963, (分離, IR, C13-NMR, UV, Mass, H-NMR, Panaxydol linoleate)

Kobayashi, M. et al., Tetrahedron, 1997, 53, 15691, (絶対構造)

Lu, W. et al., Tet. Lett., 1998, 39, 9521, (合成法)

§ Panaxydol; 9,12-Octadecadienoyl (Z,Z-)

[化学名・別名] Panaxydol linoleate

[CAS No.] 155551-19-2

[化合物分類] 脂肪族化合物 (Acetylenic alcohol)

[構造式]

[分子式] $C_{35}H_{54}O_3$

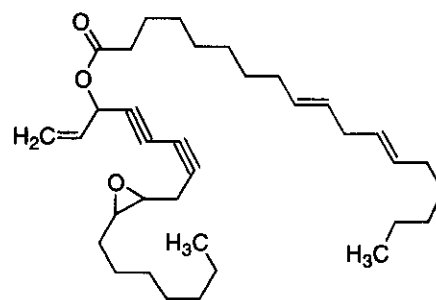
[分子量] 522.81

[正確な分子量] 522.407295

[基原] *Panax ginseng*

[性状] オイル

[比旋光度]: $[\alpha]_D -14.3$ (c, 11 in CHCl₃)



-----文献-----

Poplawski, J. et al., Phytochemistry, 1980, 19, 1539, (分離, 構造決定, 合成法)

Fujimoto, Y. et al., Chem. Pharm. Bull., 1988, 36, 4206; 1991, 39, 521, (分離, H-NMR, C13-NMR, 構造決定)

Ahn, B.-Z. et al., Arch. Pharm. (Weinheim, Ger.), 1989, 322, 223, (Acetylpanaxydol)

Chung, C.B. et al., Bull. Korean Chem. Soc., 1991, 12, 122, (絶対構造)
Hirakura, K. et al., Phytochemistry, 1991, 30, 3327; 1994, 35, 963, (分離, IR, C13-NMR, UV, Mass, H-NMR, Panaxydol linoleate)
Kobayashi, M. et al., Tetrahedron, 1997, 53, 15691, (絶対構造)
Lu, W. et al., Tet. Lett., 1998, 39, 9521, (合成法)

§ Panaxydol; 3-Ketone

[化学名・別名] 8-(3-Heptyloxiranyl)-1-octene-4,6-diyne-3-one (CAS 名).
9,10-Epoxy-1-heptadecene-4,6-diyne-3-one. Ginsenoyne E. 3-Oxopanaxydol. PQ₃. Panaquinquecol 3

[CAS No.] 126146-63-2

[化合物分類] 脂肪族化合物 (Acetylenic alcohol)

[構造式]

[分子式] C₁₇H₂₂O₂

[分子量] 258.36

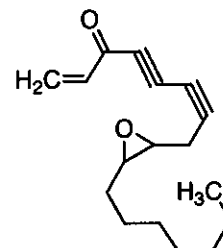
[正確な分子量] 258.16198

[基原] 次の植物から分離: *Panax quinquefolium*, *Panax ginseng*

[用途] 細胞毒活性を示す

[性状] 青白い黄色のオイル

[比旋光度]: $[\alpha]_D -36.9$ (c, 0.68 in MeOH). $[\alpha]_D -82.9$ (c, 0.8 in CHCl₃)



-----文献-----

Poplawski, J. et al., Phytochemistry, 1980, 19, 1539, (分離, 構造決定, 合成法)
Fujimoto, Y. et al., Chem. Pharm. Bull., 1988, 36, 4206; 1991, 39, 521, (分離, H-NMR, C13-NMR, 構造決定)
Ahn, B.-Z. et al., Arch. Pharm. (Weinheim, Ger.), 1989, 322, 223, (Acetylpanaxydol)
Chung, C.B. et al., Bull. Korean Chem. Soc., 1991, 12, 122, (絶対構造)
Hirakura, K. et al., Phytochemistry, 1991, 30, 3327; 1994, 35, 963, (分離, IR, C13-NMR, UV, Mass, H-NMR, Panaxydol linoleate)
Kobayashi, M. et al., Tetrahedron, 1997, 53, 15691, (絶対構造)
Lu, W. et al., Tet. Lett., 1998, 39, 9521, (合成法)

§ Panaxydol; 1,2-Dihydro, 1-chloro, 2-hydroxy

[化学名・別名] 1-Chloro-9,10-epoxy-4,6-heptadecadiyne-2,3-diol. Chloropanaxydiol

[CAS No.] 114687-51-3

[化合物分類] 脂肪族化合物 (Acetylenic alcohol)

[構造式]

[分子式] C₁₇H₂₅ClO₃

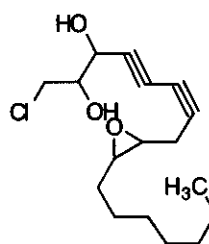
[分子量] 312.835

[正確な分子量] 312.149222

[基原] 次の植物の乾燥カルスから分離: *Panax ginseng*

[用途] 細胞毒作用

[比旋光度]: $[\alpha]_D -37.2$ (c, 0.2 in MeOH)



-----文献-----

Poplawski, J. et al., Phytochemistry, 1980, 19, 1539, (分離, 構造決定, 合成法)
Fujimoto, Y. et al., Chem. Pharm. Bull., 1988, 36, 4206; 1991, 39, 521, (分離, H-NMR, C13-NMR, 構造決定)
Chung, C.B. et al., Bull. Korean Chem. Soc., 1991, 12, 122, (絶対構造)
Hirakura, K. et al., Phytochemistry, 1991, 30, 3327; 1994, 35, 963, (分離, IR, C13-NMR, UV, Mass, H-NMR, Panaxydol linoleate)
Kobayashi, M. et al., Tetrahedron, 1997, 53, 15691, (絶対構造)
Lu, W. et al., Tet. Lett., 1998, 39, 9521, (合成法)

§ Rhamnogalacturonan II

[化合物分類] 炭水化物 (Polysaccharide)

[構造式] なし

[一般的性質] Small complex polysaccharide containing apiose, 2-O-methyl-L-fucose, 2-O-methyl-D-xylose,

aceric acid, 3-deoxy-D-lyxo-heptulosaric acid and other sugars depending on source

[基原] Obt. by the action of liquefying enzymes on apple, tomato and carrot juice pectin. The main nondegraded soluble polysaccharide component of the juice. また、種々の他の植物から得られる、例えば、*Panax ginseng* の葉

-----文献-----

Doco, T. et al., Carbohydr. Res., 1997, 297, 181, (分離, 成書)

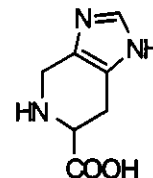
Shin, K.S. et al., Carbohydr. Res., 1997, 300, 239, (分離, 構造決定)

§ Spinacine; (S)-form

[CAS No.] 59981-63-4

[化合物分類] アルカロイド化合物 (Imidazole alkaloid) アルカロイド化合物 (Nitrogenous marine toxin)

[構造式]



[基原] 次の植物から分離: the crab *Crango vulgaris*, from the liver of the shark *Acanthias vulgaris* and from spinach. また *Panax ginseng* の根からも分離される

[融点] Mp 265 °C

[比旋光度]: $[\alpha]_D^{20}$ -174.6 (H₂O)

-----文献-----

Ackermann, D., Hoppe Seyler's Z. Physiol. Chem., 1949, 284, 129; 1962, 328, 275, (分離, 構造決定, 合成法)

Vitali, T. et al., Gazz. Chim. Ital., 1964, 94, 296, (合成法)

Nardelli, M. et al., Ric. Sci., Parte 2: Sez. A, 1964, 7, 718; CA, 63, 12440g, (結晶構造)

Andreotti, G.D. et al., Gazz. Chim. Ital., 1971, 101, 625, (結晶構造)

Eilazyan, O.G. et al., CA, 1982, 96, 85467n, (合成法)

Han, Y.N. et al., Arch. Pharmacol Res., 1987, 10, 258; CA, 108, 201742r, (分離)

Klutchko, S. et al., J. Het. Chem., 1991, 28, 97, (合成法, H-NMR, 誘導体)

§ 1,8-Tetradecadiene-11,13-diyne; (Z)-form, 8,9-Epoxyde

[化学名・別名] 2-(6-Heptenyl)-3-(2,4-pentadiynyl) oxirane (CAS 名). 8,9-Epoxy-1-tetradecene-11,13-diyne.

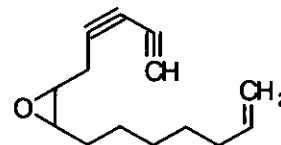
Panaxyne epoxide. PQs. Panaquinquecol 5

[CAS No.] 122122-03-6

[その他の CAS No.] 145631-83-0

[化合物分類] 脂肪族化合物 (Miscellaneous acetylene),

[構造式]



[基原] *Panax quinquefolium*, *Panax ginseng*

[用途] 細胞毒作用

[性状] オイル

[比旋光度]: $[\alpha]_D$ -90 (c, 1 in CHCl₃) (-79.1)

-----文献-----

Bohlmann, F. et al., Chem. Ber., 1972, 105, 1783, (分離, H-NMR)

Fujimoto, Y. et al., Phytochemistry, 1992, 31, 3499, (分離, H-NMR, C13-NMR)

Hirakura, K. et al., Phytochemistry, 1994, 35, 963, (epoxide)

§ 13-Tetradecene-1,3-diyne-6,7-diol

[化学名・別名] Panaxyne

[CAS No.] 122855-49-6

[化合物分類] 脂肪族化合物 (Acetylenic alcohol)

[構造式] H₂C=CH(CH₂)₂:CH(OH)CH(OH)CH₂C≡CC≡CH

[分子式] C₁₄H₂₀O₂

[分子量] 220.311

[正確な分子量] 220.14633

[基原] *Panax ginseng* の根

[用途] 細胞毒

-----文献-----

Kim, S.I. et al., Saengyak Hakhoechi, 1989, 20, 71; CA, 111, 22489I, (分離)

§ *Panax ginseng* Tetrapeptide

[化学名・別名] Valyl-D- γ -glutamyl-D-arginylglycine

[CAS No.] 178553-95-2

[関連 CAS No.] 178738-27-7

[化合物分類] アミノ酸とペプチド (Oligopeptides (4-10 residue))

[構造式] *H*-Val-D- γ -Glu-Arg-Gly-OH

[分子式] $C_{18}H_{33}N_7O_7$

[分子量] 459.501

[正確な分子量] 459.244148

[基原] *Panax ginseng*

[比旋光度]: $[\alpha]_D^{25} +26$ (c, 0.2 in H₂O)

-----文献-----

Yagi, A. et al., *Planta Med.*, 1996, 62, 115, (分離, 合成法, H-NMR, C13-NMR)

§ Trifolin; 2''-O- β -D-Glucopyranosyl

[化学名・別名] Panasenoside. Lilyn

[CAS No.] 31512-06-8

[化合物分類] フラボノイド (Flavonols; 4 × O-置換基)

[構造式]

[分子式] $C_{27}H_{30}O_{16}$

[分子量] 610.524

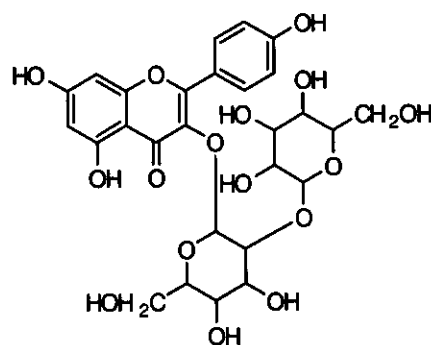
[正確な分子量] 610.15339

[基原] 次の植物から分離: *Lilium candidum*, *Panax ginseng*,

Sambucus sieboldiana, *Hypericum* spp.

[性状] 結晶 (EtOH)

[融点] Mp 225-228 °C で分解



-----文献-----

Power, F.B. et al., *J.C.S.*, 1910, 97, 231, (分離)

Komatsu, M. et al., *Yakugaku Zasshi*, 1969, 89, 122, (Panasenoside)

Nagy, E. et al., *Z. Naturforsch., B*, 1984, 39, 1813, (Panasenoside)

The Flavonoids: Advances in Research since 1980, (Ed. Harborne, J.B.), Chapman and Hall, London, 1988

§ § ウコギ科サンシチニンジン (*Panax notoginseng* Burk. F.H. Chen) の根。

§ 2-Amino-3-(oxalylamino) propanoic acid; (S)-form

[化学名・別名] L-form

[CAS No.] 5302-45-4

[化合物分類] アミノ酸とペプチド (Non-protein α -aminoacid)

[構造式]

[基原] 次の植物から分離: *Crotalaria* spp., *Lathyrus* spp., *Panax notoginseng*

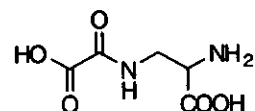
[性状] 結晶 (H₂O) (dimorph.)

[融点] Mp 206 °C で分解

[比旋光度]: $[\alpha]_D^{27} -36.9$ (c, 0.66 in 4N HCl)

[傷害・毒性] 神経毒

[化学物質毒性データ総覧 (RTECS) 登録番号] RO4555000



-----文献-----

Rao, S.L.R. et al., *Biochemistry*, 1964, 3, 432, (分離, 合成法)

Bell, E.A. et al., *Phytochemistry*, 1966, 5, 1211, (生育)

O'Brien, P. et al., *Phytochemistry*, 1982, 21, 2001, (dimorphism, IR, 成書)

Rutter, J. et al., *New Sci.*, 23rd Aug., 1984, 23, (レビュー)

Euerby, M.R. et al., *J. Chromatogr.*, 1989, 466, 407, (HPLC, 分割)

Bridges, R.J. et al., *J. Neurosci.*, 1989, 9, 2073, (性質)

Davis, A.J. et al., J. Inorg. Biochem., 1990, 39, 209, (分離)
Lambein, F. et al., Phytochemistry, 1990, 29, 3793, (生合成, 成書)
Davis, A.J. et al., Phytochemistry, 1991, 30, 3635, (結晶構造)
RTECS (化学物質毒性データ)

生体影響物質 : 医薬品.

健康障害に関するデータ

急性毒性に関するデータ

<<試験方法>> LD50 試験(50%致死量試験).

曝露経路 : 腹腔内投与

被験動物 : げっ歯類-マウス

投与量・期間 : 301 mg/kg

毒性影響 : (行動) 傾眠(全身活動度の低下).

(行動) 痙攣または発作閾値への影響.

(行動) 運動失調

参考文献

TXAPA9 Toxicology and Applied Pharmacology. (Academic Press, Inc., 1 E. First St., Duluth, MN 55802) V.1- 1959- [Vol.,頁,年(19-)]48,1,1979

<<試験方法>> 認知されている最小致死量(LDL₀)試験.

曝露経路 : 腹腔内投与

被験動物 : 霊長類-サル

投与量・期間 : 2006 mg/kg

毒性影響 : (行動) 振戦.

(行動) 痙攣または発作閾値への影響.

(胃腸) 運動亢進, 下痢.

参考文献

TXAPA9 Toxicology and Applied Pharmacology. (Academic Press, Inc., 1 E. First St., Duluth, MN 55802) V.1- 1959- [Vol.,頁,年(19-)]47,135,1979

<<試験方法>> LD50 試験(50%致死量試験).

曝露経路 : 報告なし.

被験動物 : 哺乳動物-種未特定.

投与量・期間 : 1043 mg/kg

毒性影響 : 致死量以外に毒性影響に関する報告はない.

参考文献

CTYAD8 Zhongcaoyao. Chinese Traditional and Herbal Medicine. (China International Book Trading Corp., POB 2820, Beijing, Peop. Rep. China) V.11- 1980- [Vol.,頁,年(19-)]17,274,1986

§ Cyclododecanone (CAS 名)

[CAS No.] 830-13-7

[化合物分類] 脂肪族化合物 (Monocarbocyclic aldehydes and ketone)

[構造式]

[分子式] C₁₂H₂₂O

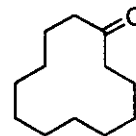
[分子量] 182.305

[正確な分子量] 182.167065

[基原] *Panax notoginseng*

[融点] Mp 59 °C

[沸点] Bp₁₂ 125 °C



-----文献-----

Kosswig, K., Ullmanns Encykl. Tech. Chem., 4. Aufl., 1975, 9, 675, (レビュー)

Ohtsuha, Y. et al., Chem. Pharm. Bull., 1983, 31, 454, (合成法)

Lu, Q. et al., Zhongcaoyao, 1988, 19, 5-7; CA, 108, 218998b, (分離)

Rawdah, T.N. et al., Tetrahedron, 1990, 46, 4101, (conformn)

§ Dammara-5,24-diene-3,7,12,20-tetrol; (3 β, 7 β, 12 β, 20S)-form, 3-O-[β-D-Glucopyranosyl-(1 → 2)

-β-D-glucopyranoside]20-O-β-D-glucopyranoside

[化学名・別名] Notoginsenoside G, Vinaginsenoside R23

[CAS No.] 193976-63-5

[化合物分類] テルペノイド (Dammarane triterpenoid)

[構造式]

[分子式] C₄₈H₈₀O₁₉

[分子量] 961.149

[正確な分子量] 960.529385

[基原] *Panax notoginseng*, *Panax vietnamensis*

[性状] 結晶 (MeOH 溶液)

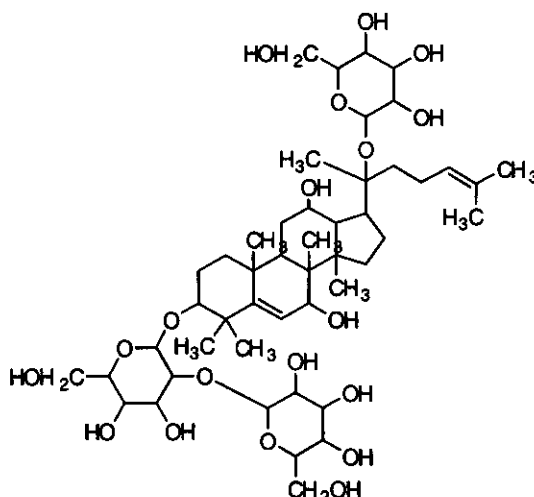
[融点] Mp 204-206 °C

[比旋光度]: [α]_D²¹ +39.2 (c, 0.1 in MeOH)

-----文献-----

Yoshikawa, M. et al., Chem. Pharm. Bull., 1997, 45, 1056; 1998, 46, 647, (分離, H-NMR, C13-NMR)

Minh Duc, N. et al., Stud. Plant Sci., 1999, 6, 77, (Vinaginsenoside R23)



§ Dammarane-3,6,12,20,24,25-hexol; (3β,6α,12β,20S,24ξ)-form, 6,20-Di-O-β-D-glucopyranoside

[化学名・別名] Notoginsenoside J

[化合物分類] テルペノイド (Dammarane triterpenoid)

[構造式]

[分子式] C₄₂H₇₄O₁₆

[分子量] 835.037

[正確な分子量] 834.49769

[基原] *Panax notoginseng*

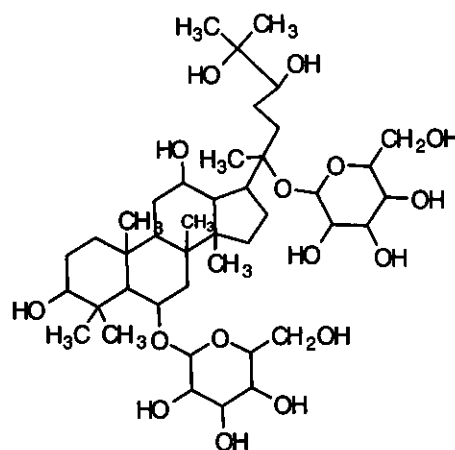
[性状] 結晶 (MeOH 溶液)

[融点] Mp 205-207 °C

[比旋光度]: [α]_D²⁸ +9.3 (c, 0.3 in MeOH)

-----文献-----

Yoshikawa, M. et al., Chem. Pharm. Bull., 1997, 45, 1056, (Notoginsenoside J)



§ Dammar-24-ene-3,20-diol; (3β,20S)-form, 3-O-[β-D-Glucopyranosyl-(1→2)-β

-D-glucopyranoside]20-O-[β-D-glucopyranosyl-(1→6)-β-D-glucopyranoside]

[化学名・別名] Notoginsenoside I

[CAS No.] 193977-08-1

[化合物分類] テルペノイド (Dammarane triterpenoid)

[構造式]

[分子式] C₅₄H₉₂O₂₂

[分子量] 1093.308

[正確な分子量] 1092.60803

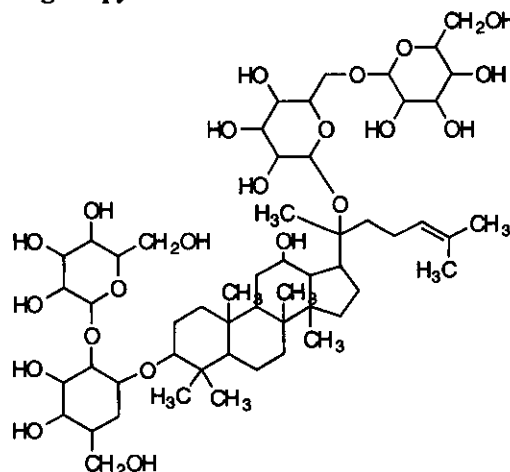
[基原] *Panax notoginseng*

[性状] 結晶 (MeOH 溶液)

[融点] Mp 209-211 °C

[比旋光度]: [α]_D²⁴ +0.8 (c, 0.1 in MeOH)

-----文献-----



Yoshikawa, M. et al., Chem. Pharm. Bull., 1997, 45, 1056, (Notoginsenoside I)

§ Dammar-22-ene-3,6,12,20,25-pentol; (3 β , 6 α , 12 β , 20R, 22E)-form, 6-O- β -D-Glucopyranoside

[化学名・別名] Notoginsenoside R_s

[CAS No.] 175889-50-6

[化合物分類] テルペノイド (Dammarane triterpenoid)

[構造式]

[分子式] C₃₆H₆₂O₁₀

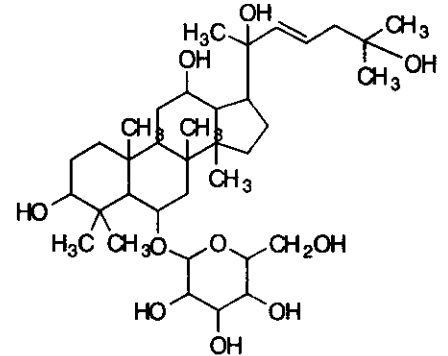
[分子量] 654.88

[正確な分子量] 654.4343

[基原] *Panax notoginseng*

[性状] 粉末

[比旋光度]: $[\alpha]_D^{18} +27$ (c, 0.32 in MeOH)



-----文献-----

Zhao, P. et al., Phytochemistry, 1996, 41, 1411, (分離, H-NMR, C13-NMR)

§ Dammar-22-ene-3,6,12,20,25-pentol; (3 β , 6 α , 12 β , 20S, 22E)-form, 6-O- β -D-Glucopyranoside

[化学名・別名] Notoginsenoside R_s

[CAS No.] 175484-14-7

[化合物分類] テルペノイド (Dammarane triterpenoid)

[構造式]

[分子式] C₃₆H₆₂O₁₀

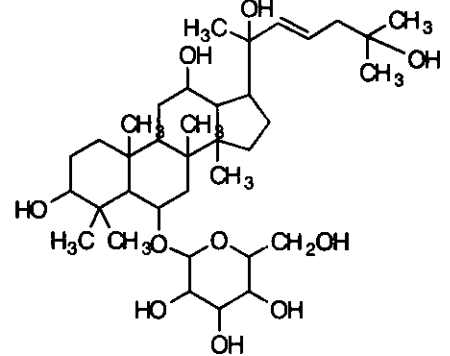
[分子量] 654.88

[正確な分子量] 654.4343

[基原] *Panax notoginseng*

[性状] 粉末

[比旋光度]: $[\alpha]_D^{18} +29$ (c, 0.45 in MeOH)



-----文献-----

Zhao, P. et al., Phytochemistry, 1996, 41, 1411, (分離, H-NMR, C13-NMR)

§ Dammar-23-ene-3,6,12,20,25-pentol; (3 β , 6 α , 12 β , 20S, 23E)-form, 6,20-Di-O- β -D-glucopyranoside

[CAS No.] 259795-18-1

[化合物分類] テルペノイド (Dammarane triterpenoid)

[構造式]

[分子式] C₄₂H₇₂O₁₅

[分子量] 817.022

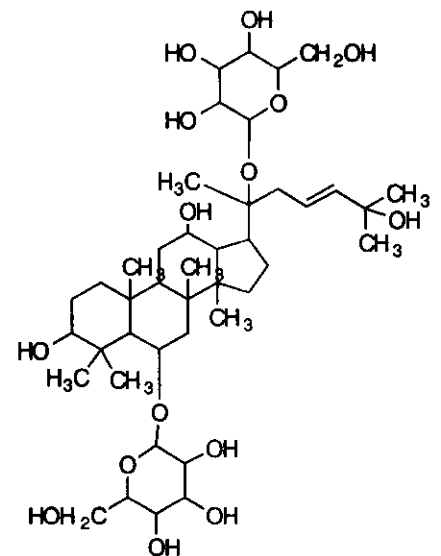
[正確な分子量] 816.487125

[基原] *Panax notoginseng*

[性状] 無定形の粉末

[融点] Mp 208-212 °C

[比旋光度]: $[\alpha]_D^{21} +31.2$ (c, 0.25 in MeOH)



-----文献-----

Wang, D.Q. et al., Yaoxue Xuebao, 1989, 24, 633; CA, 112, 95498m, (Majoroside F₆)

Yoshikawa, M. et al., Chem. Pharm. Bull., 1997, 45, 1056, (Notoginsenoside H)

Ma, W.G. et al., Phytochemistry, 1999, 52, 1133, (6,10-diglucoside)

Minh Duc, N. et al., Stud. Plant Sci., 1999, 6, 77, (Vinaginsenoside R15)

§ Dammar-23-ene-3,6,12,20,25-pentol; (3 β,6 β,12 β,20S,23E)-form, 6-O-[β-D-Xylopyranosyl-(1 → 2)-β-D-glucopyranoside] 20-O-β-D-glucopyranoside

[化学名・別名] Notoginsenoside H

[CAS No.] 193976-69-1

[化合物分類] テルペノイド (Dammarane triterpenoid)

[構造式]

[分子式] C₄₇H₈₀O₁₉

[分子量] 949.138

[正確な分子量] 948.529385

[基原] *Panax notoginseng*

[性状] 結晶 (MeOH 溶液)

[融点] Mp 201-203 °C

[比旋光度]: [α]_D²⁵ +14.9 (c, 0.1 in MeOH)

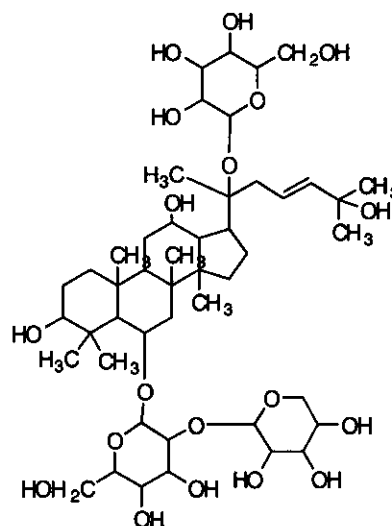
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Wang, D.Q. et al., Yaoxue Xuebao, 1989, 24, 633; CA, 112, 95498m, (Majoroside F₆)

Yoshikawa, M. et al., Chem. Pharm. Bull., 1997, 45, 1056, (Notoginsenoside H)

Ma, W.G. et al., Phytochemistry, 1999, 52, 1133, (6,10-diglucoside)

Minh Duc, N. et al., Stud. Plant Sci., 1999, 6, 77, (Vinaginsenoside R15)



§ Dammar-23-ene-3,12,20,25-tetrol; (3 β,12 β,20S,23E)-form, 3-O-[β-D-Glucopyranosyl-(1 → 2)-β-D-glucopyranoside] 20-O-[β-D-glucopyranosyl-(1 → 6)-β-D-glucopyranoside]

[化学名・別名] Notoginsenoside A

[CAS No.] 193895-21-5

[化合物分類] テルペノイド (Dammarane triterpenoid)

[構造式]

[分子式] C₅₄H₉₂O₂₄

[分子量] 1125.306

[正確な分子量] 1124.59786

[基原] *Panax notoginseng*

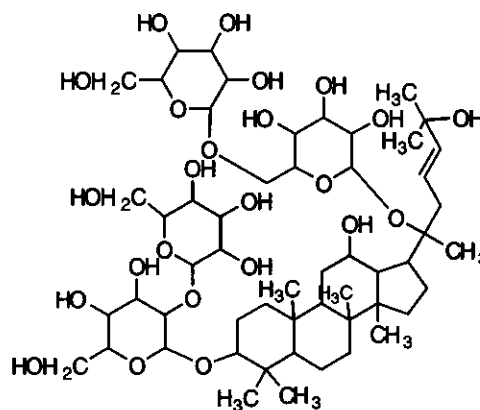
[性状] 結晶 (MeOH 溶液)

[融点] Mp 197-200 °C

[比旋光度]: [α]_D²⁴ +18.9 (c, 0.1 in MeOH)

-----文献

Yoshikawa, M. et al., Chem. Pharm. Bull., 1997, 45, 1039; 1056, (Notoginsenoside)



§ Dammar-23-ene-3,12,20,25-tetrol; (3 β,12 β,20S,23E)-form, 25-Hydroperoxide, 3-O-[β-D-glucopyranosyl-(1 → 2)-β-D-glucopyranoside] 20-O-β-D-glucopyranoside

[化学名・別名] Notoginsenoside E. Vinaginsenoside R19

[CAS No.] 193976-50-0

[化合物分類] テルペノイド (Dammarane triterpenoid)

[構造式]

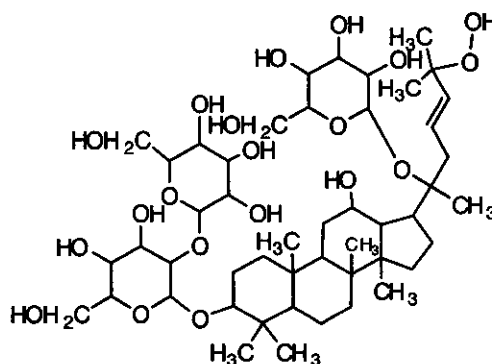
[分子式] C₄₈H₈₂O₂₀

[分子量] 979.164

[正確な分子量] 978.53995

[基原] *Panax notoginseng*, *Panax vietnamensis*

[性状] 結晶 (MeOH 溶液)



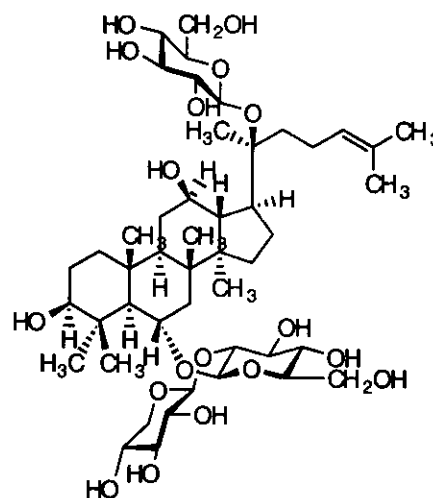
[融点] Mp 202-204 °C
[比旋光度]: $[\alpha]_D^{24} +19.2$ (c, 0.1 in MeOH)

-----文献-----

Rickling, B. et al., *Planta Med.*, 1993, 59, 76, (分離, H-NMR, C13-NMR, malonate)
Yoshikawa, M. et al., *Chem. Pharm. Bull.*, 1997, 45, 1039; 1056, (Notoginsenoside)
Minh Duc, N. et al., *Stud. Plant Sci.*, 1999, 6, 77, (Vinaginsenoside R19)

§ **Dammar-24-ene-3,6,12,20-tetrol; (3 β,6 α,12 β,20S)-form, 6-O-[β-D-Xylopyranosyl-(1 → 2)-β-D-glucopyranoside] 20-O-β-D-glucopyranoside**

[化学名・別名] Notoginsenoside R₁
[CAS No.] 80418-24-2
[化合物分類] テルペノイド (Dammarane triterpenoid)
[構造式]



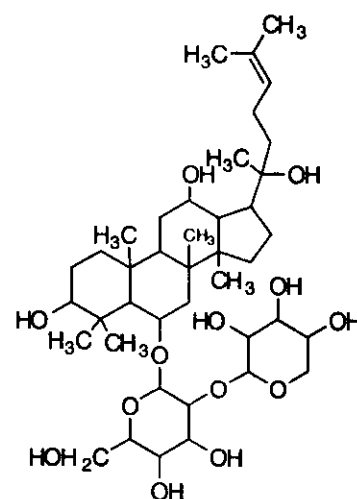
[分子式] C₄₇H₈₀O₁₈
[分子量] 933.138
[正確な分子量] 932.53447
[基原] *Panax notoginseng* の根
[性状] 針状結晶 (H₂O)
[融点] Mp 215-217 °C
[比旋光度]: $[\alpha]_D^{25} +15$ (c, 1.0 in MeOH)

-----文献-----

Uvarova, N.I. et al., *Khim. Prir. Soedin.*, 1965, 1, 82; *Chem. Nat. Compd. (Engl. Transl.)*, 1965, 1, 63, (Panaxoside)
Sanada, S. et al., *Chem. Pharm. Bull.*, 1974, 22, 2407; 1978, 26, 1694, (分離, Ginsenoside R₁)
Lin, T.-D. et al., *J. Chin. Chem. Soc. (Taipei)*, 1979, 26, 29, (Chikusetsusaponin IV.)
Yoon, S.-R. et al., *Chem. Pharm. Bull.*, 1998, 48, 1144, (Ginsenosides R₁ and R₂, assay)

§ **Dammar-24-ene-3,6,12,20-tetrol; (3 β,6 α,12 β,20S)-form, 6-O-[β-D-Xylopyranosyl-(1 → 2)-β-D-glucopyranoside]**

[化学名・別名] Notoginsenoside R₂
[CAS No.] 80418-25-3
[化合物分類] テルペノイド (Dammarane triterpenoid)
[構造式]



[分子式] C₄₁H₇₀O₁₃
[分子量] 770.996
[正確な分子量] 770.481645
[基原] *Panax notoginseng*
[性状] 粉末
[比旋光度]: $[\alpha]_D^{15} +10.3$ (c, 1.0 in MeOH)

-----文献-----

Matsuura, H. et al., *Chem. Pharm. Bull.*, 1983, 31, 2281, (Notoginsenosides R3 and R6)

§ **Dammar-24-ene-3,6,12,20-tetrol; (3 β,6 α,12 β,20S)-form, 6-O-β-D-Glucopyranoside, 20-O-[β-D-glucopyranosyl-(1 → 6)-β-D-glucopyranoside]**

[化学名・別名] Notoginsenoside R3
[CAS No.] 87741-76-2
[化合物分類] テルペノイド (Dammarane triterpenoid)

[構造式]

[分子式] $C_{48}H_{82}O_{19}$

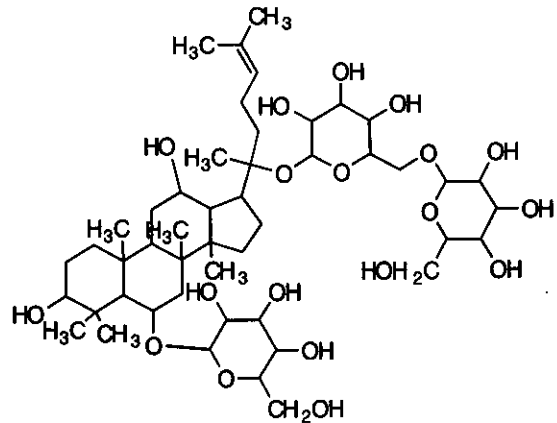
[分子量] 963.164

[正確な分子量] 962.545035

[基原] *Panax notoginseng*

[性状] 無定型の粉末

[比旋光度]: $[\alpha]_D^{16} +23.7$ (c, 0.97 in MeOH)



-----文献-----

Matsuura, H. et al., Chem. Pharm. Bull., 1983, 31, 2281, (Notoginsenosides R3 and R6)

§ Dammar-24-ene-3,6,12,20-tetrol; (3 β , 6 α , 12 β , 20S)-form, 6-O- β -D-Glucopyranoside, 20-O-[α -D-glucopyranosyl-(1 \rightarrow 6)- β -D-glucopyranoside]

[化学名・別名] Notoginsenoside R6

[CAS No.] 87741-78-4

[化合物分類] テルペノイド (Dammarane triterpenoid)

[構造式]

[分子式] $C_{48}H_{82}O_{19}$

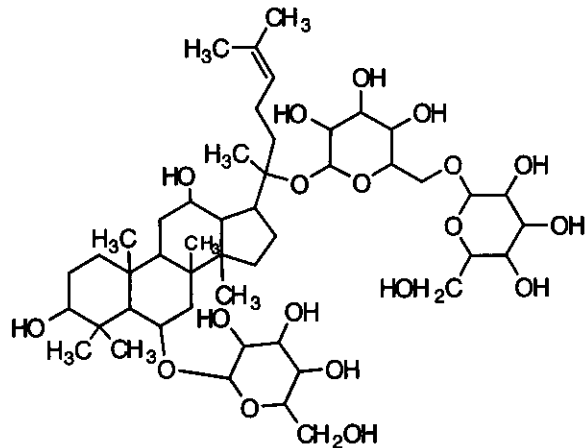
[分子量] 963.164

[正確な分子量] 962.545035

[基原] *Panax notoginseng*

[性状] 無定型の粉末

[比旋光度]: $[\alpha]_D^{17} +44.3$ (c, 0.5 in MeOH)



-----文献-----

Matsuura, H. et al., Chem. Pharm. Bull., 1983, 31, 2281, (Notoginsenosides R3 and R6)

§ Dammar-25-ene-3,12,20,24-tetrol; (3 β , 12 β , 20S, 24 ξ)-form, 24-Ketone, 3-O-[β -D-glucopyranosyl-(1 \rightarrow 2)- β -D-glucopyranoside] 20-O-[β -D-glucopyranosyl-(1 \rightarrow 6)- β -D-glucopyranoside]

[化学名・別名] Notoginsenoside B

[CAS No.] 193895-26-0

[化合物分類] テルペノイド (Dammarane triterpenoid)

[構造式]

[分子式] $C_{54}H_{90}O_{24}$

[分子量] 1123.291

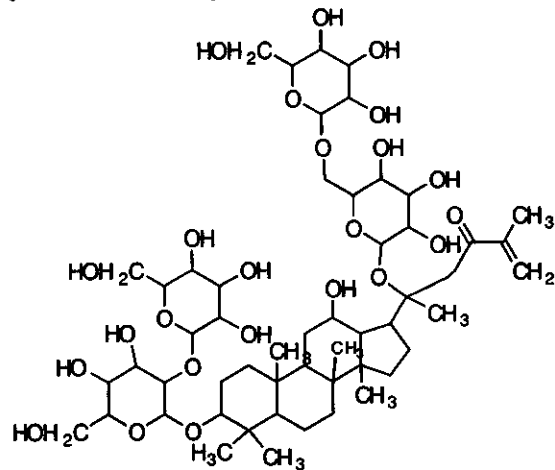
[正確な分子量] 1122.58221

[基原] *Panax notoginseng*

[性状] 結晶 (MeOH 溶液)

[融点] Mp 201-204 °C

[比旋光度]: $[\alpha]_D^{23} +17.8$ (c, 0.1 in MeOH)



-----文献-----

Yoshikawa, M. et al., Chem. Pharm. Bull., 1997, 45, 1039, (Notoginsenoside)