

Daul, A. et al., Naunyn-Schmiedeberg's Arch. Pharmacol., 1995, 352, 429, (薬理)
Schwinger, R.H.G. et al., Naunyn-Schmiedeberg's Arch. Pharmacol., 1996, 354, 343, (薬理)

§ Fabatin

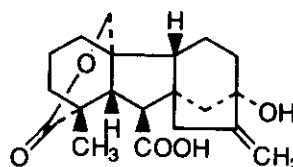
[化合物分類] アミノ酸とペプチド (Linear polypeptides)
[構造式] 不明
[一般的性質] 47 AA 残基からなる抗菌作用を有する大型ペプチド
[天然基原] *Vicia faba*
[用途] グラム陽性菌および陰性菌に対して活性を有する

-----文献-----

Zhang, Y. et al., FEMS Microbiol. Lett., 1997, 149, 59-64, (分離, 構造決定)

§ Gibberellin A₄₄

[化学名・別名] 13-Hydroxygibberellin A₁₅
[CAS No.] 36434-15-8
[化合物分類] テルペノイド (Gibberellins)
[構造式]
[分子式] C₂₀H₂₆O₅
[分子量] 346.422
[正確な分子量] 346.178025
[天然基原] *Pisum sativum*, *Pisum vulgaris*, *Vicia faba*, その他の植物
[性状] 結晶 (Me₂CO/EtOAc)
[融点] Mp 230-233 °C
[比旋光度]: [α]_D +5.85 (c, 0.513 in EtOH)

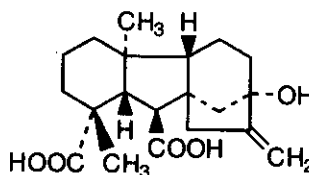


-----文献-----

Hiraga, K. et al., Agric. Biol. Chem., 1972, 36, 345; 1974, 38, 2521, (Gibberellin A₃₈)
Fukui, H. et al., Agric. Biol. Chem., 1972, 36, 1003, (分離, 構造決定)
Mander, L.N. et al., Phytochemistry, 1996, 43, 23, (GA₉₈)
Kobayashi, M. et al., Phytochemistry, 2000, 55, 317-321, (生合成)
Blake, P.S. et al., Phytochemistry, 2000, 55, 887-890, (GA₁₂₄)

§ Gibberellin A₅₅

[CAS No.] 51576-08-0
[化合物分類] テルペノイド (Gibberellins)
[構造式]
[分子式] C₂₀H₂₈O₅
[分子量] 348.438
[正確な分子量] 348.193675
[天然基原] 次の植物から分離: *Vicia faba*, *Spinacea oleracea*
[性状] 結晶 (Me₂CO/petrol)
[融点] Mp 261-274 °C

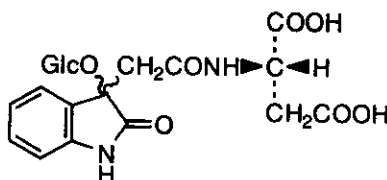


-----文献-----

Koshimizu, K. et al., Agric. Biol. Chem., 1968, 32, 1135, (構造決定)
Owen, D.J. et al., Phytochemistry, 1996, 42, 921, (GA₁₀₀)
Mander, L.N. et al., Phytochemistry, 1996, 43, 23, (GA₉₇)
Blake, P.S. et al., Phytochemistry, 2000, 55, 887-890, (GA₁₂₃)

§ N-[[3-(β-D-Glucopyranosyloxy)-2,3-dihydro-2-oxo-1H-indol-3-yl]acetyl]aspartic acid (CAS 名)

[CAS No.] 99694-85-6
[化合物分類] アミノ酸とペプチド (Non-protein α-aminoacids), アルカロイド化合物 (Oxindole alkaloids)
[構造式]
[分子式] C₂₀H₂₄N₂O₁₂
[分子量] 484.416
[正確な分子量] 484.132928
[天然基原] *Vicia faba* の発芽種子
[用途] Metab. of indolacetic acid
[性状] 粉末



Tsurumi, S. et al., Plant Physiol., 1985, 79, 667, (分離)

§ *N*-Glutamylaspartic acid; L-L-form

[CAS No.] 16804-55-0

[化合物分類] アミノ酸とペプチド (Dipeptides)

[構造式]

[分子式] $C_9H_{14}N_2O_7$

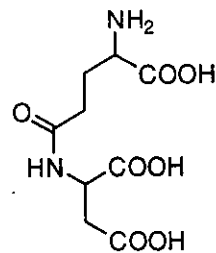
[分子量] 262.219

[正確な分子量] 262.080103

[天然基原] *Vigna radiata* の種子, *Vicia faba*, *Acacia georginae*

[融点] Mp 192-195 °C で分解

[比旋光度]: $[\alpha]_D^{18} +19.5$ (c, 2 in *M* HCl)



-----文献-----

Meguro, H. et al., Agric. Biol. Chem., 1968, 32, 518, (ORD)

Ito, K. et al., Phytochemistry, 1972, 11, 2541, (生育)

Kasai, T. et al., Phytochemistry, 1986, 25, 679, (生育)

§ 4-Hydroxycitrulline

[化学名・別名] *N*-Carbamoyl-4-hydroxyornithine (旧 CAS 名). 2-Amino-4-hydroxy-5-ureidopentanoic acid

[CAS No.] 3618-90-4

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

[構造式] $H_2NCONHCH_2CH(OH)CH_2CH(NH_2)COOH$

[分子式] $C_6H_{13}N_3O_4$

[分子量] 191.186

[正確な分子量] 191.090607

[天然基原] 次の植物から分離: *Vicia faba*, *Vicia pseudoorbis*

[融点] Mp 195 °C (185-187 °C)

[比旋光度]: $[\alpha]_D^{25} +8$ (c, 1 in 2 *M* HCl)

[その他のデータ] The nat. prod. is an L-form but the rel. config. has not been detd.

-----文献-----

Bell, E.A. et al., Biochem. J., 1965, 97, 104

Inatomi, H. et al., CA, 1970, 72, 18541y, (分離)

§ 3-(4-Hydroxyphenyl)-2-propenoic acid; (ξ)-form, *O*- β -D-Glucopyranoside

[CAS No.] 14364-05-7

[化合物分類] 単環芳香族 (Simple phenylpropanoids)

[構造式]

[分子式] $C_{15}H_{18}O_8$

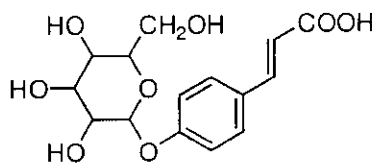
[分子量] 326.302

[正確な分子量] 326.10017

[天然基原] 色々な果物と次のものを含む色々な野菜; *Vicia faba*

[性状] 結晶 (H₂O)

[その他のデータ] 構造は未決定



-----文献-----

Zincke, T., Annalen, 1902, 322, 224, (分離)

Ogawa, S., Bull. Chem. Soc. Jpn., 1927, 2, 25, (分離)

Karrer, W. et al., Konstitution und Vorkommen der Organischen Pflanzenstoffe, 2nd edn., Birkhäuser

§ Hyperin; 7-*O*- α -L-Rhamnopyranoside, 6''-Ac

[CAS No.] 124027-51-6

[化合物分類] フラボノイド (Flavonols; 5 \times O-置換基)

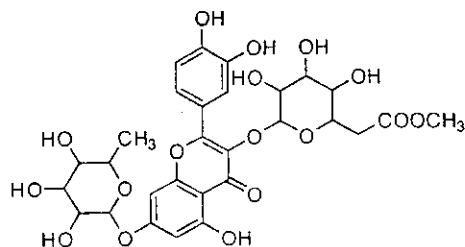
[構造式]

[分子式] $C_{29}H_{32}O_{17}$

[分子量] 652.562

[正確な分子量] 652.163955

[天然基原] 次の植物から分離: *Vicia faba*



-----文献-----

-----文献-----

Karrer, W. et al., *Konstitution und Vorkommen der Organischen Pflanzenstoffe*, 2nd edn., Birkhäuser Verlag, Basel, 1972, no. 1531, (生育)

Tomas-Lorente, F. et al., *Phytochemistry*, 1989, 28, 1993, (6"-Ac 7-rhamnoside)

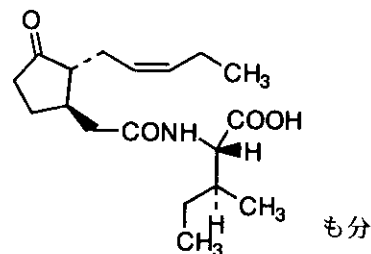
§ *N*-Jasmonoylisoleucine

[化学名・別名] *N*-[[3-Oxo-2-(2-pentenyl) cyclopentyl] acetyl] isoleucine (CAS 名)

[CAS No.] 28838-58-6

[化合物分類] 脂肪族化合物 (Monocarbocyclic carboxylic acids and lactones), アミノ酸とペプチド (Non-protein α -aminoacids)

[構造式]



[分子式] $C_{18}H_{29}NO_4$

[分子量] 323.431

[正確な分子量] 323.209659

[天然基原] 次の植物の代謝物: *Gibberella fujikuroi*. また次の植物から分離: *Pinus mugo*, *Vicia faba*

-----文献-----

Cross, B.E. et al., *J.C.S. (C)*, 1970, 1839, (構造決定)

Knoefel, H.-D. et al., *Phytochemistry*, 1995, 38, 569, (分離)

Miersch, O. et al., *Phytochemistry*, 1999, 50, 517-523, (分離)

§ Legnodulic acid

[化合物分類] 構造未知の天然物

[一般的性質] 構造は未知

[天然基原] *Vicia faba* の根瘤

[性状] 六角形の板状結晶

[融点] Mp 250 °Cで分解

-----文献-----

Ishida, Y. et al., *Yakugaku Zasshi*, 1959, 79, 790; *CA*, 53, 19049h, (分離)

§ 20(29)-Lupene-3,28-diol; 3 β -form

[化学名・別名] Betulin. Betulinol (obsol.). Trochol

[CAS No.] 473-98-3

[化合物分類] テルペノイド (Lupane triterpenoids)

[構造式]

[分子式] $C_{30}H_{50}O_2$

[分子量] 442.724

[正確な分子量] 442.38108

[天然基原] 樺の樹皮. また *Trochodendron aralioides*, *Corylus avellana*, *Vicia faba*, その他多くの植物. Isol. as a mixt. of acyl esters from archaeological resins

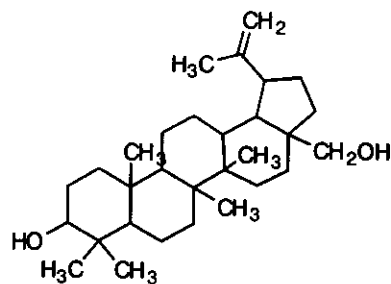
[性状] 結晶

[融点] Mp 251-252 °C

[比旋光度]: $[\alpha]_D^{25} +20$ (Py)

[その他のデータ] 薬理的活性な異性体

[販売元] Aldrich:12376-5; Sigma:B9757



-----文献-----

Siddiqui, S. et al., *J. Nat. Prod.*, 1988, 51, 229-233, (Betulin, H-NMR, C13-NMR)

Fuchino, H. et al., *Chem. Pharm. Bull.*, 1995, 43, 1937-1942, (Betulin caffeate)

Lavoie, S. et al., *Synth. Commun.*, 2001, 31, 1565-1571, (betulin, 分離, H-NMR, Mass)

§ Methylenebutanedioic acid (CAS 名)

[化学名・別名] Methylensuccinic acid (旧 CAS 名). 2-Propene-1,2-dicarboxylic acid. Itaconic acid

[CAS No.] 97-65-4

[関連 CAS No.] 2287-83-4

[化合物分類] 脂肪族化合物 (Branched alkenic carboxylic acids)

[分子式] C₃H₆O₄

[分子量] 130.1

[正確な分子量] 130.02661

[天然基原] Prod. comly. by fermentation of molasses, glucose etc. with *Aspergillus terreus*. Pyrol. prod. of Citric acid. 色々な微生物, または植物から分離, 例えば, *Vicia faba* の根

[用途] Speciality monomer imparting performance advantages to surface coating polymers etc. Comonomer with styrene, acrylonitrile, butadiene

[性状] 吸湿性の結晶もしくは針状結晶 (MeNO₂)

[融点] Mp 167-168 °C (162-164 °C (分解))

[溶解性] 水, エタノール, アセトンに溶ける; エーテル, ベンゼン, クロロホルムに難溶; BERDY SOL: 水, エーテルに可溶; クロロホルム, ヘキサン, ベンゼンに難溶

[PKa 値] pK_{a1} 3.68; pK_{a2} 5.14 (25 °C, 0.1 M NaClO₄)

[その他のデータ] 極めて低い毒性. 分子内で変化する (2-Methyl-2-butenedioic acid 参照) under strongly basic conds. or on htg. Q/e values for polym., Q 0.78, e 1.07

[販売元] Aldrich:I-2920-4; Fluka:59950; Sigma:I5877

-----文献-----

Sarvetnick, H.A., Polyvinyl Chloride, Van Nostrand Reinhold, 1969, 22, (di-Me ester, copolym, reactivity ratios)

Harlow, R.L. et al., Acta Cryst. B, 1973, 29, 2965, (結晶構造)

Kirk-Othmer Encycl. Chem. Technol., 3rd edn., Wiley, 1978, 23, 910, (di-Me ester, copolym, reactivity ratios)

Dallinga, J.W. et al., Org. Mass Spectrom., 1984, 19, 10, (Mass)

Kirk-Othmer Encycl. Chem. Technol., 4th edn., Wiley, 1991, 14, 952, (レビュー)

§ 3-Oxo-2-(2-pentenyl)-1-cyclopenteneacetic acid; (Z)-form

[CAS No.] 120282-76-0

[化合物分類] 脂肪族化合物 (Monocarbocyclic carboxylic acids and lactones)

[構造式]

[分子式] C₁₂H₁₆O₃

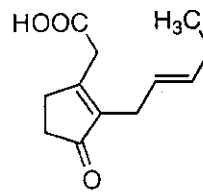
[分子量] 208.257

[正確な分子量] 208.109945

[天然基原] *Vicia faba*

[性状] オイル

UV: [neutral] λ_{max} 236 (log ε 3.81) (MeOH)



-----文献-----

Miersch, O. et al., Phytochemistry, 1989, 28, 339

§ 3-Oxo-2-pentylcyclopentaneacetic acid; (1R,2R)-form

[化学名・別名] Dihydrojasmonic acid

[CAS No.] 98674-52-3

[化合物分類] 脂肪族化合物 (Monocarbocyclic carboxylic acids and lactones)

[構造式]

[分子式] C₁₂H₂₀O₃

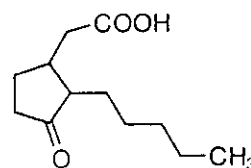
[分子量] 212.288

[正確な分子量] 212.141245

[天然基原] 次の植物から分離: *Vicia faba*, *Secale cereale*

[性状] オイル

[比旋光度]: [α]_D²² -28.3 (c, 0.1 in MeOH)



-----文献-----

Renold, W. et al., Helv. Chim. Acta, 1974, 57, 1301, (Mass)

Miersch, O. et al., Phytochemistry, 1987, 26, 1037-1039; 1989, 28, 339-340, (分離)

Fenaroli's Handbook of Flavor Ingredients, 3rd edn., (ed. Burdock, G.A.), CRC Press, 1995, 2, 496, (Me ester)

Encyclopedia of Food and Color Additives, (ed. Burdock, G.A.), CRC Press, 1997, 1753-1754, (Me ester)

§ α-Rhamnoisorobin; 3-O-β-D-Galactopyranoside

[CAS No.] 38784-79-1

[化合物分類] フラボノイド (Flavonols; 4 × O-置換基)

[構造式]

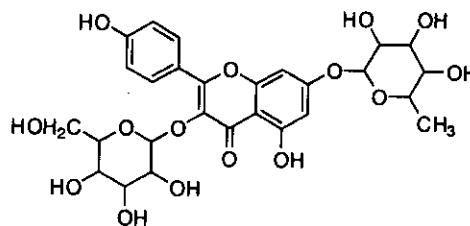
[分子式] $C_{27}H_{30}O_{15}$

[分子量] 594.525

[正確な分子量] 594.158475

[天然基原] 次の植物から分離: *Vicia faba*, *Solanum* spp.,

Cladothamnus pyrolaeiflorus, *Robinia neomexicana*



----- 文 献 -----

Vierstra, R.D. et al., *Plant Physiol.*, 1982, 69, 522, (3-galactoside)

Lin, Y.-L. et al., *J. Chin. Chem. Soc. (Taipei)*, 1995, 42, 973-976, (Roripanoside)

§ α -Rhamnoisorobin; 3-O-(6-O-Acetyl- β -D-galactopyranoside)

[CAS No.] 124097-45-6

[化合物分類] フラボノイド (Flavonols; 4 × O-置換基)

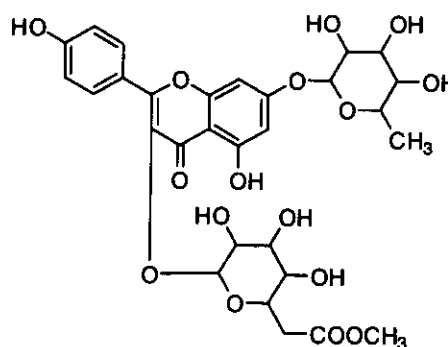
[構造式]

[分子式] $C_{29}H_{32}O_{16}$

[分子量] 636.562

[正確な分子量] 636.16904

[天然基原] 次の植物から分離: *Vicia faba*



----- 文 献 -----

Wenkert, E. et al., *Phytochemistry*, 1977, 16, 1811-1816, (Robinin, C13-NMR)

§ α -Rhamnoisorobin; 3-O-[α -L-Rhamnopyranosyl-(1 → 2)- β -D-galactopyranoside]

[CAS No.] 124027-49-2

[化合物分類] フラボノイド (Flavonols; 4 × O-置換基)

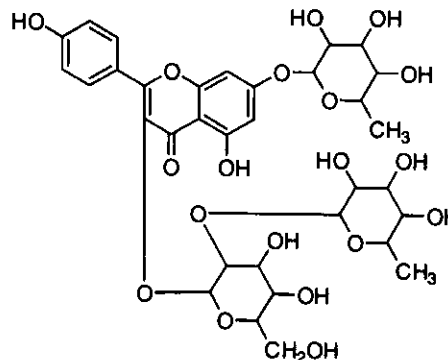
[構造式]

[分子式] $C_{33}H_{40}O_{19}$

[分子量] 740.668

[正確な分子量] 740.216385

[天然基原] 次の植物から分離: *Vicia faba*



----- 文 献 -----

Zemplen, G. et al., *Ber.*, 1941, 74, 1783-1789, (Robinin)

§ α -Rhamnoisorobin; 3-O-[α -L-Rhamnopyranosyl-(1 → 2)-6-O-acetyl- β -D-galactopyranoside]

[CAS No.] 124027-50-5

[化合物分類] フラボノイド (Flavonols; 4 × O-置換基)

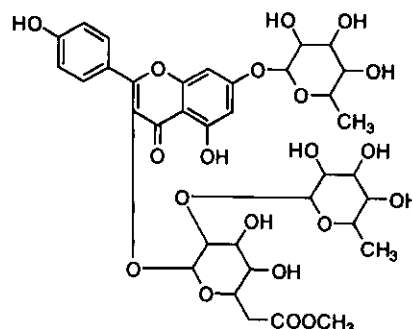
[構造式]

[分子式] $C_{35}H_{42}O_{20}$

[分子量] 782.705

[正確な分子量] 782.22695

[天然基原] 次の植物から分離: *Vicia faba*



-----文献-----

Zemplen, G. et al., Ber., 1941, 74, 1783-1789, (Robinin)

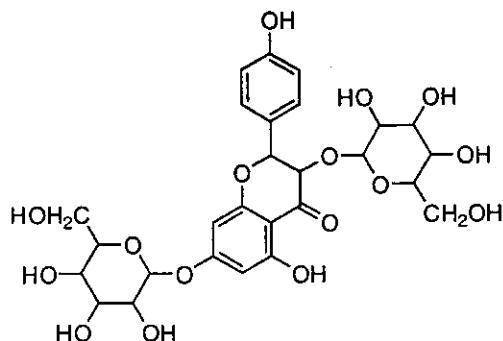
Perez-Castorena, A.-L. et al., Phytochemistry, 1997, 46, 1297-1299, (3-acetylramnoside)

§ 3,4',5,7-Tetrahydroxyflavanone; (2R,3R)-form, 3,7-Di-O-β-D-glucopyranoside

[CAS No.] 80212-10-8

[化合物分類] フラボノイド (Dihydroflavonols; 4 × O-置換基)

[構造式]



[分子式] C₂₇H₃₂O₁₆

[分子量] 612.54

[正確な分子量] 612.16904

[天然基原] *Vicia faba*

[その他のデータ] 構造は未知

-----文献-----

Gripenberg, J., Acta Chem. Scand., 1952, 6, 1152, (分離)

Karrer, W. et al., Konstitution und Vorkommen der Organischen Pflanzenstoffe, 2nd edn., Birkhäuser Verlag, Basel, 1972, nos. 374; 583; 1635, (生育)

§ Tyrosine; (S)-form, N-Jasmonoyl

[化学名・別名] *N*-Jasmonoyltyrosine

[CAS No.] 105801-18-1

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

[構造式]

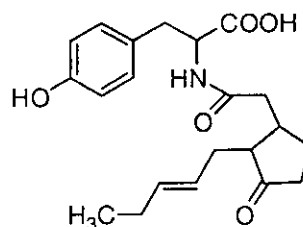
[分子式] C₂₁H₂₉NO₅

[分子量] 373.448

[正確な分子量] 373.188924

[天然基原] *Vicia faba* の花

[その他のデータ] For Jasmonoyl struct., see Jasmonic acid



-----文献-----

Brueckner, C. et al., Phytochemistry, 1986, 25, 2236, (*N*-Jasmonyltyrosine)

§ Wyerone acid; (2E,11Z)-form

[化合物分類] 含酸素複素環式化合物 (Furans), 脂肪族化合物 (Acetylenic acids and s)

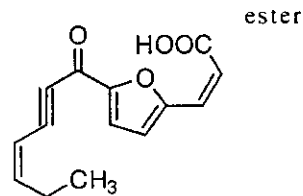
[構造式]

[分子式] C₁₄H₁₈O

[分子量] 244.246

[正確な分子量] 244.07356

[天然基原] 次の植物から分離: ソラマメ leaves (*Vicia faba*) infected with *Botrytis*



ester

spp.

-----文献-----

Fawcett, C.H. et al., J.C.S. (C), 1968, 2455, (分離, 構造決定, alcohol)

Letcher, R.M. et al., Phytochemistry, 1970, 9, 249, (分離)

Mansfield, J.W. et al., Nature (London), 1974, 252, 316, (分離)

Hargreaves, J.A. et al., Ann. Appl. Biol., 1975, 81, 271, (分離, epoxide)

Hargreaves, J.A. et al., Phytochemistry, 1976, 15, 651; 1119, (分離, epoxide)

§ Wyerone acid; (2E,11Z)-form, Me ester

[化学名・別名] Wyerone

[CAS No.] 20079-30-5

[化合物分類] 含酸素複素環式化合物 (Furans), 脂肪族化合物 (Acetylenic acids and esters)

[構造式]

[分子式] $C_{15}H_{14}O_4$

[分子量] 258.273

[基原] ソラマメ *Vicia faba* の発芽種子

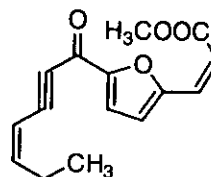
[用途] カビ毒

[性状] 結晶 (hexane or cyclohexane)

[融点] Mp 63.5-64 °C

[溶解性] BERDY SOL: メタノール, ベンゼンに可溶; ヘキサンに易溶; 水に難溶

UV: [neutral] λ_{max} 226 (ϵ 13300); 291 (ϵ 9100); 351 (ϵ 27000) (EtOH) (Derep) [neutral] λ_{max} 226 (ϵ 14000); 291 (ϵ 9100); 351 (ϵ 27000) (MeOH) (Berdy) [neutral] λ_{max} 224 ; 292 ; 351 (EtOH) (Berdy)



-----文献-----

Fawcett, C.H. et al., J.C.S. (C), 1968, 2455, (分離, 構造決定, alcohol)

Letcher, R.M. et al., Phytochemistry, 1970, 9, 249, (分離)

Mansfield, J.W. et al., Nature (London), 1974, 252, 316, (分離)

Hargreaves, J.A. et al., Ann. Appl. Biol., 1975, 81, 271, (分離, epoxide)

Hargreaves, J.A. et al., Phytochemistry, 1976, 15, 651; 1119, (分離, epoxide)

§ Wyerone acid; (2E,11Z)-form, 11,12-Dihydro

[化学名・別名] Dihydrowyerone acid

[CAS No.] 70711-57-8

[化合物分類] 脂肪族化合物 (Acetylenic acids and esters), 含酸素複素環式化合物 (Furans)

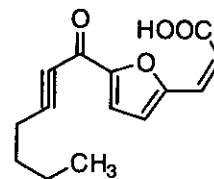
[構造式]

[分子式] $C_{14}H_{14}O_4$

[分子量] 246.262

[基原] *Vicia faba*

[用途] ファイトアレキシン



-----文献-----

Fawcett, C.H. et al., J.C.S. (C), 1968, 2455, (分離, 構造決定, alcohol)

Letcher, R.M. et al., Phytochemistry, 1970, 9, 249, (分離)

Mansfield, J.W. et al., Nature (London), 1974, 252, 316, (分離)

Hargreaves, J.A. et al., Ann. Appl. Biol., 1975, 81, 271, (分離, epoxide)

Hargreaves, J.A. et al., Phytochemistry, 1976, 15, 651; 1119, (分離, epoxide)

§ Wyerone acid; (2E,11Z)-form, 11,12-Dihydro, Me ester

[化学名・別名] Dihydrowyerone

[化合物分類] 脂肪族化合物 (Acetylenic acids and esters), 含酸素複素環式化合物 (Furans)

[構造式]

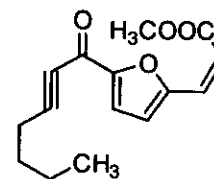
[分子式] $C_{15}H_{16}O_4$

[分子量] 260.289

[基原] *Vicia faba* の微量成分

[性状] 微細プリズム結晶

[融点] Mp 79-80 °C



-----文献-----

Fawcett, C.H. et al., J.C.S. (C), 1968, 2455, (分離, 構造決定, alcohol)

Letcher, R.M. et al., Phytochemistry, 1970, 9, 249, (分離)

Mansfield, J.W. et al., Nature (London), 1974, 252, 316, (分離)

Hargreaves, J.A. et al., Ann. Appl. Biol., 1975, 81, 271, (分離, epoxide)

Hargreaves, J.A. et al., Phytochemistry, 1976, 15, 651; 1119, (分離, epoxide)

§ Wyerone acid; (2E,11Z)-form, 8-Alcohol, Me ester

[化学名・別名] Wyerol. Methyl 3-[5-(1-hydroxy-4-hepten-2-ynyl)-2-furanyl]-2-propenoate

[CAS No.] 20450-52-6

[化合物分類] 脂肪族化合物 (Acetylenic acids and esters), 含酸素複素環式化合物 (Furans)

[構造式]

[分子式] $C_{15}H_{16}O_4$

[分子量] 260.289

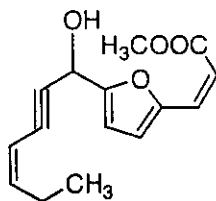
[基原] 次の植物から分離: *Vicia faba*

[用途] ファイトアレキシン

[性状] 針状結晶 (hexane)

[融点] Mp 55-56 °C

UV: [neutral] λ_{max} 312 (EtOH) (Berdy)



-----文献-----

Fawcett, C.H. et al., J.C.S. (C), 1968, 2455, (分離, 構造決定, alcohol)

Letcher, R.M. et al., Phytochemistry, 1970, 9, 249, (分離)

Mansfield, J.W. et al., Nature (London), 1974, 252, 316, (分離)

Hargreaves, J.A. et al., Ann. Appl. Biol., 1975, 81, 271, (分離, epoxide)

Hargreaves, J.A. et al., Phytochemistry, 1976, 15, 651; 1119, (分離, epoxide)

§ Wyerone acid; (2E,11Z)-form, 8-Alcohol, 11,12-dihydro, Me ester

[化学名・別名] Dihydrowyerol

[CAS No.] 70711-58-9

[化合物分類] 脂肪族化合物 (Acetylenic acids and esters), 含酸素複素環式化合物 (Furans)

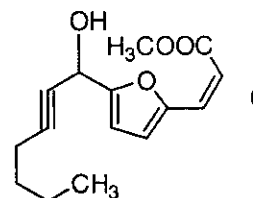
[構造式]

[分子式] $C_{15}H_{16}O_4$

[分子量] 262.305

[基原] *Vicia faba*

[用途] ファイトアレキシン



-----文献-----

Fawcett, C.H. et al., J.C.S. (C), 1968, 2455, (分離, 構造決定, alcohol)

Letcher, R.M. et al., Phytochemistry, 1970, 9, 249, (分離)

Mansfield, J.W. et al., Nature (London), 1974, 252, 316, (分離)

Hargreaves, J.A. et al., Ann. Appl. Biol., 1975, 81, 271, (分離, epoxide)

Hargreaves, J.A. et al., Phytochemistry, 1976, 15, 651; 1119, (分離, epoxide)

§ Wyerone acid; (2E,11Z)-form, 11,12-Epoxyde, Me ester

[化学名・別名] Wyerone epoxide

[CAS No.] 60375-16-8

[化合物分類] 含酸素複素環式化合物 (Furans), 脂肪族化合物 (Acetylenic acids and esters)

[構造式]

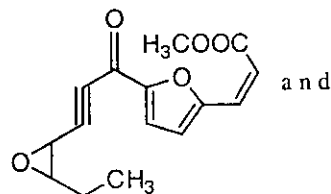
[分子式] $C_{15}H_{14}O_5$

[分子量] 274.273

[基原] *Vicia faba* の発芽種子

[性状] 結晶 (Et2O/hexane)

[融点] Mp 74-76 °C



-----文献-----

Fawcett, C.H. et al., J.C.S. (C), 1968, 2455, (分離, 構造決定, alcohol)

Letcher, R.M. et al., Phytochemistry, 1970, 9, 249, (分離)

Mansfield, J.W. et al., Nature (London), 1974, 252, 316, (分離)

Hargreaves, J.A. et al., Ann. Appl. Biol., 1975, 81, 271, (分離, epoxide)

Hargreaves, J.A. et al., Phytochemistry, 1976, 15, 651; 1119, (分離, epoxide)

§ Wyeronic acid

[化学名・別名] 3-[5-(1-Oxo-4-hexen-2-ynyl)-2-furanyl]-2-propenoic acid (CAS 名)

[CAS No.] 117783-52-5

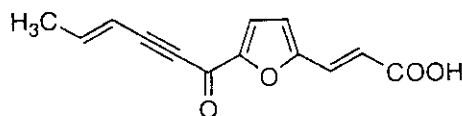
[化合物分類] 含酸素複素環式化合物 (Furans)

[構造式]

[分子式] $C_{15}H_{16}O_4$

[分子量] 230.22

[基原] 次の植物から分離: *Vicia faba*



[用途] ファイトアレキシン

-----文献-----

Thynn, M. et al., Z. Naturforsch., C, 1988, 43, 636; 1989, 44, 237, (分離)

*****マリーゴールド (Marigold) *****

§ § キク科トウキンセンカ (*Calendula officinalis* L.) の花または全草。

§ Ergostan-3-ol; (3 β ,5 α ,24S)-form

[化学名・別名] Ergostanol. Chalinastanol. γ -Ergostanol

[CAS No.] 474-60-2

[その他の CAS No.] 17105-72-5

[化合物分類] ステロイド (Ergostane steroids; excluding withanolides and brassinolides). (C28).

[構造式]

[分子式] C₂₈H₅₀O

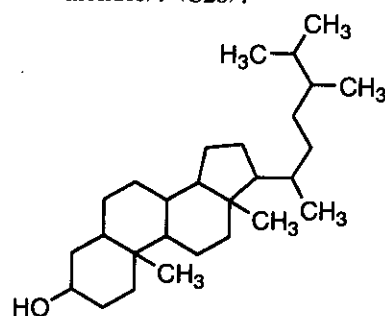
[分子量] 402.702

[基原] コーヒー, *Calendula officinalis*, *Cerastium alpinum*, タバコ細胞培養

[性状] 結晶 (MeOH/Et₂O)

[融点] Mp 144-145 °C

[比旋光度]: [α]_D +15.94 (CHCl₃)



-----文献-----

Karrer, P. et al., Helv. Chim. Acta, 1951, 34, 832, (分離)

Nagasampagi, B.A. et al., Phytochemistry, 1971, 10, 1101, (分離)

Adler, G. et al., Phytochemistry, 1975, 14, 627, (分離)

Bohlin, L. et al., Phytochemistry, 1981, 20, 2397, (分離)

§ Flavochrome

[化学名・別名] 5,8-Epoxy-5,8-dihydro- β , ϵ -carotene

[CAS No.] 473-05-2

[化合物分類] テルペノイド

(Tetraterpenoids)

[構造式]

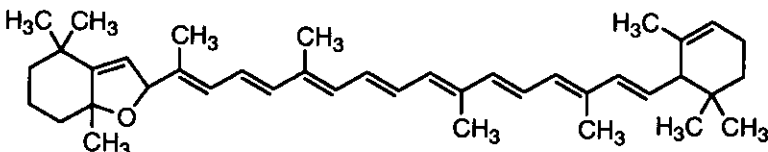
[分子式] C₄₀H₅₆O

[分子量] 552.882

[基原] *Calendula officinalis*. また *Ranunculus acer*, *Centaurea moschata*

[性状] 黄色の結晶 (C₆H₆/MeOH)

[融点] Mp 189 °C



-----文献-----

Karrer, P. et al., Helv. Chim. Acta, 1945, 28, 471, 1146, (分離, 構造決定)

Goodwin, T.W., Biochem. J., 1954, 58, 90, (分離)

§ 3-Glucopyranosyloxy-4',5,7-trihydroxy-3'-methoxyflavone; 6''-O- β -L-Rhamnofuranosyl

[CAS No.] 37138-79-7

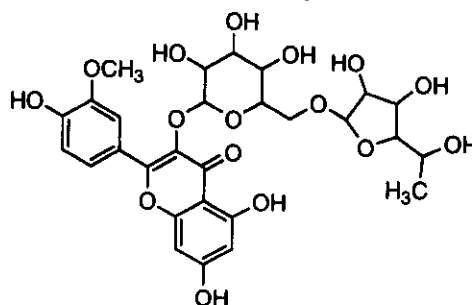
[化合物分類] フラボノイド (Flavonols; 5 × O-置換基)

[構造式]

[分子式] C₂₈H₃₂O₁₆

[分子量] 624.551

[基原] 次の植物から分離: *Calendula officinalis*



-----文献-----

Rahman, W. et al., J.O.C., 1962, 27, 153-155, (分離, 構造決定)

Biryuk, V.A. et al., Farm. Zh. (Kiev), 1972, 27, 44, (6"-rhamnopyranosyl)

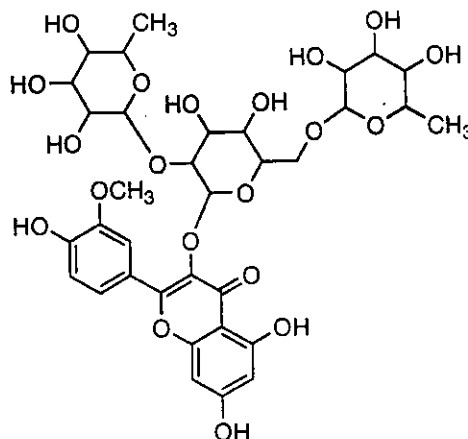
§ 3-Glucopyranosyloxy-4',5,7-trihydroxy-3'-methoxyflavone; 2'',6''-Di-O- α -L-rhamnopyranosyl

[化学名・別名] Typhaneoside

[CAS No.] 104472-68-6

[化合物分類] フラボノイド (Flavonols; 5 × O-置換基)

[構造式]



[分子式] $C_{33}H_{42}O_{20}$

[分子量] 770.694

[基原] 次の植物から分離: *Typha angustifolia* の花粉, *Calendula officinalis*

-----文献-----

Biryuk, V.A. et al., Farm. Zh. (Kiev), 1972, 27, 44, (6"-rhamnopyranosyl)

Webby, R.F. et al., Phytochemistry, 1990, 29, 289-292, (6"-dirhamnopyranosyl)

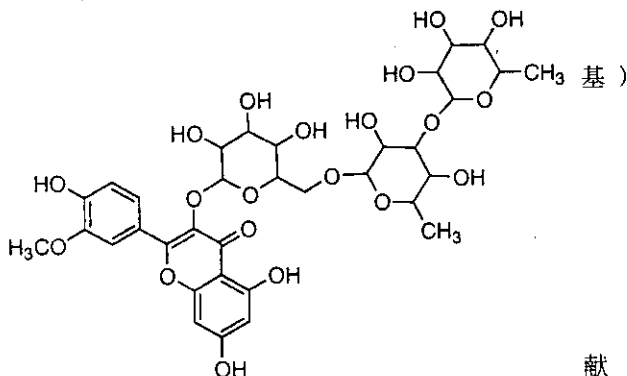
Parker, W.H. et al., Phytochemistry, 1975, 14, 553-555, (6"-rhamnopyranosylrhamnopyranosyl)

§ 3-Glucopyranosyloxy-4',5,7-trihydroxy-3'-methoxyflavone; 6''-O-[α -L-Rhamnopyranosyl-(1 → 3)- α -L-rhamnopyranosyl]

[CAS No.] 122342-15-8

[化合物分類] フラボノイド (Flavonols; 5 × O-置換)

[構造式]



[分子式] $C_{33}H_{42}O_{20}$

[分子量] 770.694

[基原] *Calendula officinalis*

-----文-----

献

Biryuk, V.A. et al., Farm. Zh. (Kiev), 1972, 27, 44, (6"-rhamnopyranosyl)

Parker, W.H. et al., Phytochemistry, 1975, 14, 553-555, (6"-rhamnopyranosylrhamnopyranosyl)

Webby, R.F. et al., Phytochemistry, 1990, 29, 289-292, (6"-dirhamnopyranosyl)

Beck, M.-A. et al., Phytochemistry, 1999, 50, 329-332, (rhamnopyranosylrhamnopyranosyl)

§ 20(29)-Lupene-3,16,28-triol; (3 β ,16 β)-form

[化学名・別名] Heliantriol B₂

[CAS No.] 61229-18-3

[化合物分類] テルペノイド (Lupane triterpenoids)

[構造式]

[分子式] $C_{50}H_{98}O_3$

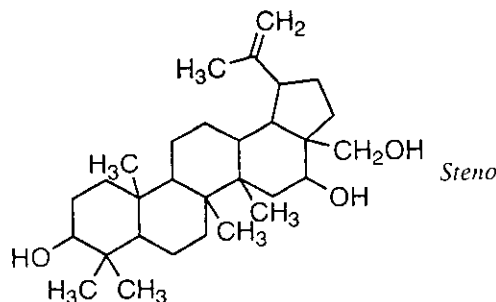
[分子量] 458.723

[基原] *Beyeria brevifolia*, *Calendula officinalis*, *Helianthus annuus*, *cereus thurberi*

[性状] 結晶 (MeOH)

[融点] Mp 300-301 °C

[比旋光度]: $[\alpha]_D^{25} +8$ (c, 0.4 in $CHCl_3$)



-----文献-----

Errington, S.G. et al., Aust. J. Chem., 1976, 29, 1809, (分離, H-NMR)

St Pyrek, J., Pol. J. Chem. (Rocz. Chem.), 1979, 53, 2465, (分離)

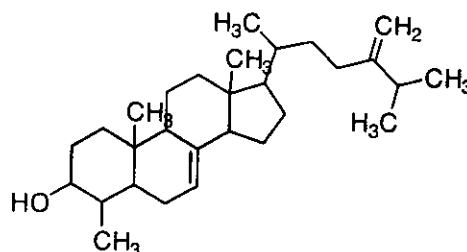
Kircher, H.W., *Phytochemistry*, 1980, 19, 2707. (分離)
Ye, Y. et al., *J. Nat. Prod.*, 1998, 61, 456-460, (16-Hydroxybetulinic acid)

§ 4-Methylergosta-7,24(28)-dien-3-ol; (3 β ,4 β ,5 α)-form

[CAS No.]21490-25-5

[化合物分類]ステロイド (Ergostane steroids;excluding withanolides and brassinolides). (C28)

[構造式]



[分子式]C₂₈H₄₈O

[分子量]412.698

[基原]次の植物から分離: マリーゴールド (*Calendula officinalis*) の花

[融点]Mp 151 °C

-----文献-----

Schreiber, K. et al., *Tetrahedron*, 1964, 20, 2575, (分離)

Osske, G. et al., *Tetrahedron*, 1965, 21, 1559, (分離)

Pyrek, J.St., *Chem. Comm.*, 1969, 107, (分離)

Lenton, J.R. et al., *Phytochemistry*, 1975, 14, 1523, (生合成)

Della Greca, M. et al., *Phytochemistry*, 1990, 29, 1797, (分離, H-NMR)

§ 4-Methylstigmasta-7,24(28)-dien-3-ol; (3 β ,4 β ,5 α ,24Z)-form

[CAS No.]21490-23-3

[化合物分類]AJ1550, ステロイド (Stigmastane steroids). (C29).

[構造式]

[分子式]C₂₉H₅₀O

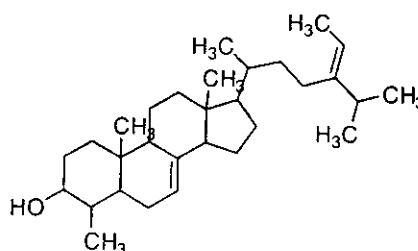
[分子量]426.724

[基原]*Calendula officinalis*

[性状]結晶

[融点]Mp 165 °C

[比旋光度]:[α]_D +6 (CHCl₃)



-----文献-----

Bates, R.B. et al., *Tet. Lett.*, 1968, 6163, (構造決定)

St. Pyrek, J., *Chem. Comm.*, 1969, 107, (分離)

St. Pyrek, J. et al., *Pol. J. Chem. (Rocz. Chem.)*, 1977, 51, 951, (分離, H-NMR)

§ Mutatochrome

[化学名・別名]5,8-Epoxy-5,8-dihydro- β , β -carotene. Citroanthin. Flavacin †

[CAS No.]515-06-0

[関連 CAS No.]15678-54-3, 31613-49-7

[化合物分類]テルペノイド (Tetraterpenoids),

[構造式]

[分子式]C₄₀H₅₆O

[分子量]552.882

[基原]オレンジの皮, 藍藻植物,

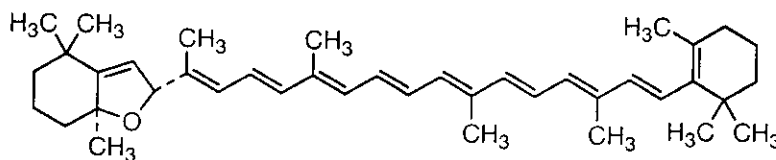
また *Calendula officinalis*,

Capsicum annuum (パプリカ),

Delonix regia, その他

[性状]Yellow-橙色の結晶 (C₆H₆/MeOH)

[融点]Mp 167 °C



-----文献-----

Karrer, P. et al., *Helv. Chim. Acta*, 1944, 28, 1695; 1946, 29, 229; 1947, 30, 536. (分離, 構造決定, 合成法)

Ignasiak, T. et al., *Biochem. Syst. Ecol.*, 1973, 1, 97; 1975, 2, 177. (分離, Cryptoflavin)

Ebert, G. et al., *Helv. Chim. Acta*, 1985, 24, 29. (分離, Cryptoflavin)

§ 8,10,12-Octadecatrienoic acid; (8E,10E,12Z)-form

[化学名・別名] Calendic acid. Calendulic acid

[CAS No.] 28872-28-8

[化合物分類] 脂肪酸化合物 (Unbranched alkenic carboxylic acids and lactones)

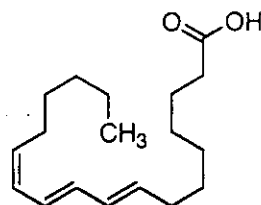
[構造式]

[分子式] $C_{18}H_{30}O_2$

[分子量] 278.434

[基原] 次の植物から分離: *Calendula officinalis* の種子オイル. また *Calendula stellata*, *Osteospermum spinescens*, *Osteospermum hyoseroides*

[融点] Mp 40-40.5 °C



-----文献-----

McLean, J. et al., J.C.S., 1956, 777, (分離)

Chisholm, M.J. et al., Can. J. Chem., 1960, 38, 2500, (分離)

Chisholm, M.J. et al., J.O.C., 1962, 27, 3137, (分離)

§ 12-Oleanene-3,16-diol; (3β,16β)-form

[化学名・別名] Maniladiol

[CAS No.] 595-17-5

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

[構造式]

[分子式] $C_{30}H_{50}O_2$

[分子量] 442.724

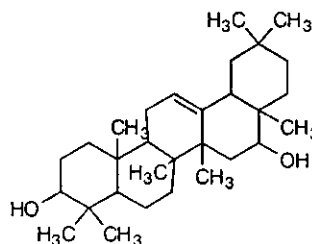
[基原] マニラエレミ. また the cacti *Escontria chiotilla*, *Myrtillocactus eichlamii*, *Baccharis* spp., *Calendula officinalis*, その他

[性状] 結晶 (MeOH 溶液)

[融点] Mp 220-221 °C

[比旋光度]: $[\alpha]_D^{20} +68$ (CHCl₃)

[溶解性] BERDY SOL: ヘキサンに難溶



-----文献-----

Hui, W.-H. et al., J.C.S. Perkin 1, 1977, 897, (Maniladiol)

St. Pyrek, J. et al., Pol. J. Chem. (Rocz. Chem.), 1979, 53, 2465, (分離)

Arriaga-Giner, F.J. et al., Phytochemistry, 1986, 25, 719, (分離)

Quijano, L. et al., Phytochemistry, 1998, 49, 2065-2068, (Maniladiol, 結晶構造)

§ 12-Oleanene-3,28-diol; 3β-form

[化学名・別名] Erythrodiol. Homoolestranol

[CAS No.] 545-48-2

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

[構造式]

[分子式] $C_{30}H_{50}O_2$

[分子量] 442.724

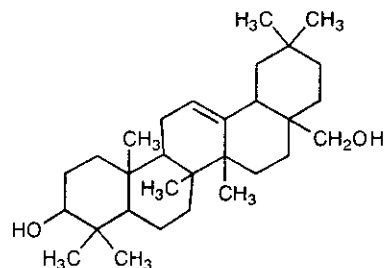
[基原] *Erythroxylum novogranatense*, *Olea europaea*, *Lemaireocereus*

Calendula officinalis, ブドウ, オリーブ, その他の植物. Fairly widely distributed aglycone

[性状] 針状結晶 (Me₂CO)

[融点] Mp 235-237 °C

[比旋光度]: $[\alpha]_D^{20} +77$



spp.,

-----文献-----

Shamma, M. et al., J.O.C., 1959, 24, 726; 1962, 27, 4512, (分離, H-NMR)

Takahashi, H. et al., Phytochemistry, 1999, 51, 543-550, (Coumaroylerythrodiols)

§ 13(18)-Oleanene-3,16-diol; (3β,16β)-form

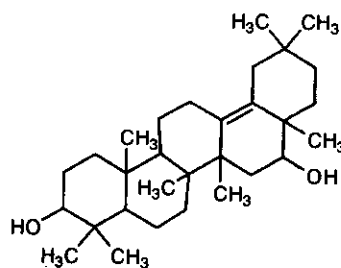
[化学名・別名] Coflodiol. Ursadiol (obsol.) ‡

[CAS No.] 37384-13-7

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

[構造式]

[分子式] $C_{30}H_{50}O_2$
 [分子量] 442.724
 [基原] 次の植物から分離: *Calendula officinalis*
 [性状] 結晶
 [融点] Mp 240-242 °C
 [比旋光度]: $[\alpha]_D^{25} -48$ (c, 0.2 in $CHCl_3$)
 [その他のデータ] Formerly thought to be an ursane

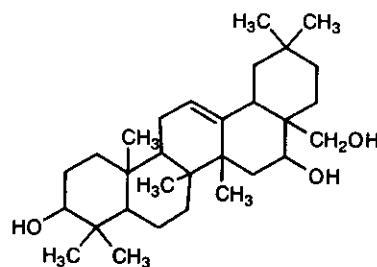


----- 文献 -----

St. Pyrek, J., Pol. J. Chem. (Rocz. Chem.), 1977, 51, 2493
 Tamai, M. et al., Planta Med., 1989, 55, 44, (分離)

§ 12-Oleanene-3,16,28-triol; (3 β,16 β)-form

[化学名・別名] Longispinogenin
 [CAS No.] 465-94-1
 [化合物分類] テルペノイド (Oleanane triterpenoids)
 [構造式]
 [分子式] $C_{30}H_{50}O_3$
 [分子量] 458.723
 [基原] *Lemaireocereus longispinus*, *Calendula officinalis*, その他
 [性状] 結晶 (Me_2CO)
 [融点] Mp 247-249 °C
 [比旋光度]: $[\alpha]_D^{25} +51$ ($CHCl_3$)



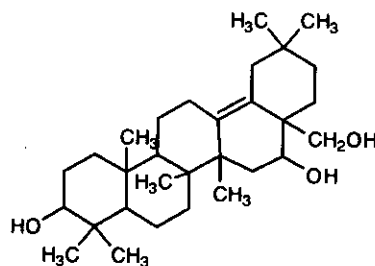
----- 文献 -----

Baigert, D.R. et al., Aust. J. Chem., 1978, 31, 1375, (分離)
 Morales, G. et al., J. Nat. Prod., 1989, 52, 381, (分離, 誘導体, pmr, C13-NMR)

§ 13(18)-Oleanene-3,16,28-triol; (3 β,16 β)-form

[化学名・別名] Heliantriol A, Coflotriol
 [CAS No.] 26540-64-7
 [化合物分類] テルペノイド (Oleanane triterpenoids)
 [構造式]

[分子式] $C_{30}H_{50}O_3$
 [分子量] 458.723
 [基原] 次の植物の花から分離: *Helianthus annuus*, *Calendula officinalis*
 [性状] 針状結晶 (EtOAc)
 [融点] Mp 279-281 °C
 [比旋光度]: $[\alpha]_D -36.7$ (c, 1 in $CHCl_3$)

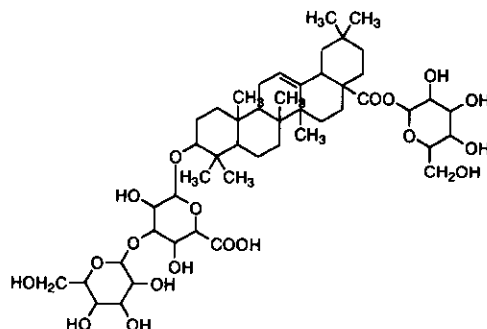


----- 文献 -----

Kubota, T. et al., Tetrahedron, 1967, 23, 3333, (合成法)
 St. Pyrek, J., Pol. J. Chem. (Rocz. Chem.), 1979, 53, 2465, (分離)

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

[化学名・別名] Calendulose H, Calendulaglycoside C
 [CAS No.] 26020-29-1
 [その他の CAS No.] 29893-98-9
 [化合物分類] テルペノイド (Oleanane triterpenoids)
 [構造式]
 [分子式] $C_{48}H_{76}O_{19}$
 [分子量] 957.117
 [基原] *Calendula officinalis*
 [融点] Mp 198-203 °C
 [比旋光度]: $[\alpha]_D^{20} +22.1$ (MEOH)



[その他のデータ] 構造式は暫定的 for Calendulaglycoside C

-----文献-----

Kasprzyk, Z. et al., *Phytochemistry*, 1967, 6, 69, (Calendulaglycosides)

Vecherko, P. et al., *Khim. Prir. Soedin.*, 1974, 10, 532; *Chem. Nat. Compd.* (Engl. Transl.), 1974, 10, 548, (Calenduloside H)

Pizza, C. et al., *J. Nat. Prod.*, 1987, 50, 927, (Calenduloside H)

§ **Oleanolic acid bisdesmosides; Triglycosides, 3-O-[β-D-Galactopyranosyl-(1 → 3)-6-O-methyl-β-D-glucuronopyranoside], 28-O-β-D-glucopyranosyl ester**

[化学名・別名] Calenduloside H methyl ester

[CAS No.] 155740-14-0

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

[構造式]

[分子式] $C_{59}H_{78}O_{19}$

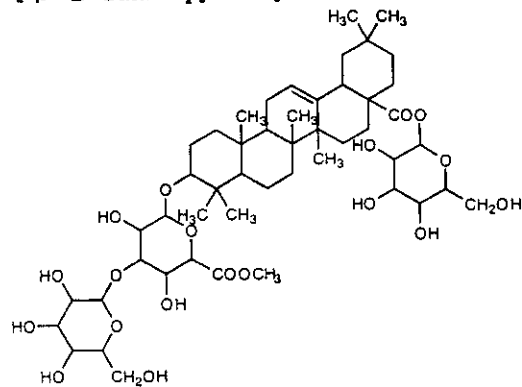
[分子量] 971.144

[基原] *Aralia armata*, *Calendula officinalis*

[性状] 粉末

[比旋光度]: $[\alpha]_D^{30} +12.4$ (c, 0.5 in MeOH)

-----文献-----



Kasprzyk, Z. et al., *Phytochemistry*, 1967, 6, 69, (Calendulaglycosides)

Vecherko, P. et al., *Khim. Prir. Soedin.*, 1974, 10, 532; *Chem. Nat. Compd.* (Engl. Transl.), 1974, 10, 548, (Calenduloside H)

Pizza, C. et al., *J. Nat. Prod.*, 1987, 50, 927, (Calenduloside H)

§ **Calendulaglycoside A**

[CAS No.] 29660-94-4

[化合物分類] テルペノイド

(Oleanane triterpenoids)

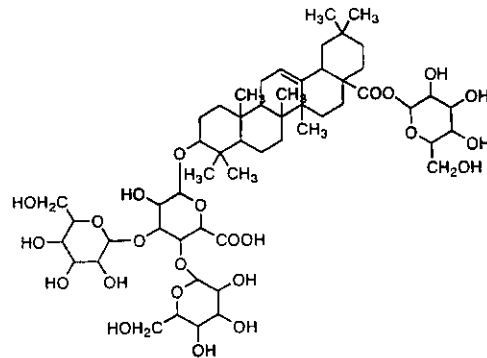
[構造式]

[分子式] $C_{54}H_{86}O_{24}$

[分子量] 1119.259

[基原] 次の植物から分離: *Calendula officinalis*

-----文献-----



Kasprzyk, Z. et al., *Phytochemistry*, 1967, 6, 69, (Calendulaglycosides)

Vecherko, P. et al., *Khim. Prir. Soedin.*, 1974, 10, 532; *Chem. Nat. Compd.* (Engl. Transl.), 1974, 10, 548, (Calenduloside H)

Pizza, C. et al., *J. Nat. Prod.*, 1987, 50, 927, (Calenduloside H)

§ **Oleanolic acid 3-glycosides; Monoglycosides, 3-O-β-D-Glucuronopyranoside**

[化学名・別名] Calenduloside E. Momordin Ib. Calendulaglycoside F

[CAS No.] 26020-14-4

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

[構造式]

[分子式] $C_{35}H_{56}O_9$

[分子量] 632.833

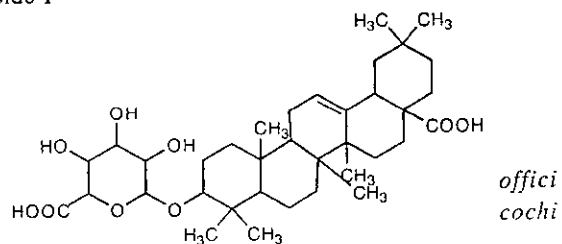
[基原] *Melanthera scandens*, *Aralia armata*, *Calendula nalis*, *Beta vulgaris*, *Hedera nepalensis*, *Momordica nchinensis*

[性状] 針状結晶 (MeOH)

[融点] Mp 264-267 °C で分解

[比旋光度]: $[\alpha]_D +20.4$ (c, 0.8 in MeOH)

-----文献-----



*offici
cochi*

Kasprzyk, Z. et al., *Phytochemistry*, 1967, 6, 69-75, (Calendulaglycosides)
 Transl.), 1971, 7, 19-25; 1974, 10, 548-549, (Calendulosides)
 Vidal-Ollivier, E. et al., *J. Nat. Prod.*, 1989, 52, 1156-1159, (Calendulosides)
 Borel, C. et al., *Helv. Chim. Acta*, 1987, 70, 570-576, (*Swartzia madagascariensis* saponins)

§ **Oleanolic acid 3-glycosides; Diglycosides, 3-O-[β-D-Galactopyranosyl-(1→4)-β-D-glucopyranoside]**

[化学名・別名] Calendulose A

[CAS No.] 32725-74-9

[その他の CAS No.] 98819-24-0

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

[構造式]

[分子式] $C_{42}H_{68}O_{13}$

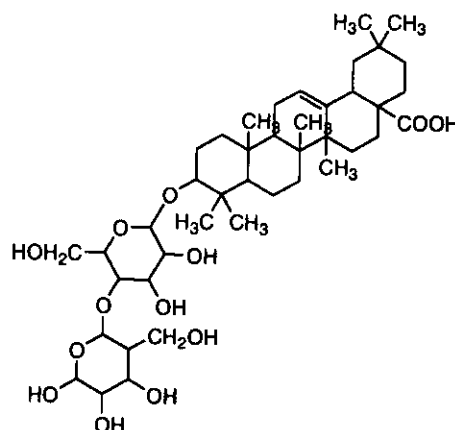
[分子量] 780.991

[基原] 次の植物の根から分離: *Calendula officinalis*

[性状] 一水和物

[融点] Mp 260-262 °C

[比旋光度]: $[\alpha]_D^{20} +41.4$ (c, 0.5 in MeOH)



-----文献-----

Kasprzyk, Z. et al., *Phytochemistry*, 1967, 6, 69-75, (Calendulaglycosides)
 Transl.), 1971, 7, 19-25; 1974, 10, 548-549, (Calendulosides)

§ **Oleanolic acid 3-glycosides; Diglycosides, 3-O-[β-D-Galactopyranosyl-(1→3)-β-D-glucuronopyranoside]**

[化学名・別名] Calendulose G.

Calendulaglycoside G

[CAS No.] 26020-15-5

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

[構造式]

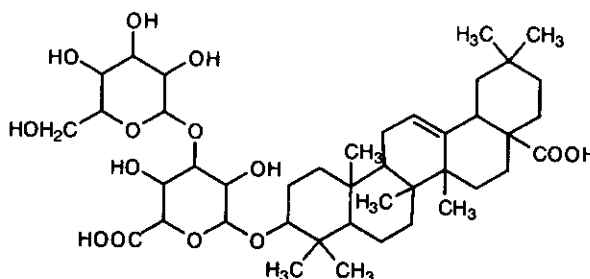
[分子式] $C_{42}H_{66}O_{14}$

[分子量] 794.975

[基原] *Aralia armata*, *Calendula officinalis*

[融点] Mp 117-119 °C (分解). Mp 205-210 °C (dihydrate)

[比旋光度]: $[\alpha]_D^{20} +24.1$ (MeOH)



-----文献-----

Pizza, C. et al., *J. Nat. Prod.*, 1987, 50, 927-931, (Calendulose G)
 Vidal-Ollivier, E. et al., *J. Nat. Prod.*, 1989, 52, 1156-1159, (Calendulosides)

§ **Oleanolic acid 3-glycosides; Diglycosides, 3-O-[β-D-Galactopyranosyl-(1→3)-β-D-glucuronopyranoside], 6'-Me ester**

[化学名・別名] Calendulose G methyl ester

[CAS No.] 155740-15-1

[化合物分類] テルペノイド

(Oleanane triterpenoids)

[構造式]

[分子式] $C_{43}H_{66}O_{14}$

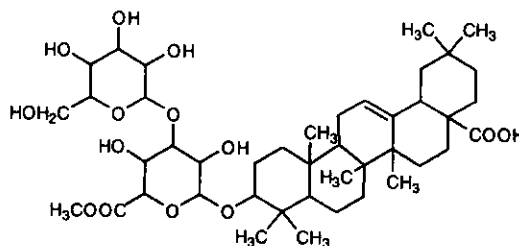
[分子量] 809.002

[基原] *Aralia armata*, *Calendula officinalis*

[性状] 粉末

[融点] Mp 228-230 °C

[比旋光度]: $[\alpha]_D^{28.4} +22.2$ (c, 0.47 in MeOH)



-----文献-----

Vecherko, L.P. et al., *Khim. Prir. Soedin.*, 1971, 7, 22-27; 1974, 10, 532-534; *Chem. Nat. Compd.* (Engl. Transl.), 1971, 7, 19-25; 1974, 10, 548-549, (Calendulosides)
 Pizza, C. et al., *J. Nat. Prod.*, 1987, 50, 927-931, (Calendulose G)
 Vidal-Ollivier, E. et al., *J. Nat. Prod.*, 1989, 52, 1156-1159, (Calendulosides)

§ Oleanolic acid 3-glycosides; Diglycosides, 3-O- $[\beta$ -D-Glucopyranosyl-(1 → 4)- β -D-glucuronopyranoside]

[化学名・別名] Calendulaglycoside E. Ladyginoside A

[CAS No.] 38424-95-2

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

[構造式]

[分子式] $C_{42}H_{66}O_{14}$

[分子量] 794.975

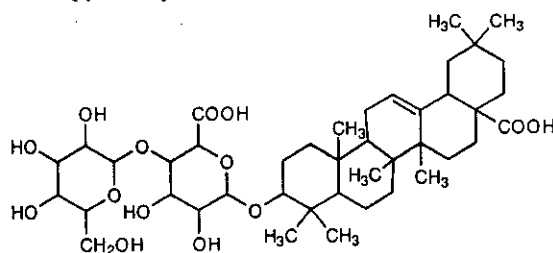
[基原] 次の植物から分離: *Calendula officinalis*,

ginia bucharica の根

[性状] 結晶 (EtOH)

[融点] Mp 240-242 °C

[比旋光度]: $[\alpha]_D^{20} +17.5$ (c, 0.8 in MeOH)



-----文献-----

Vecherko, L.P. et al., *Khim. Prir. Soedin.*, 1971, 7, 22-27; 1974, 10, 532-534; *Chem. Nat. Compd. (Engl. Transl.)*, 1971, 7, 19-25; 1974, 10, 548-549, (Calendulosides)

Kizu, H. et al., *Chem. Pharm. Bull.*, 1985, 33, 3324-3329, (Calenduloside E)

Vidal-Ollivier, E. et al., *J. Nat. Prod.*, 1989, 52, 1156-1159, (Calendulosides)

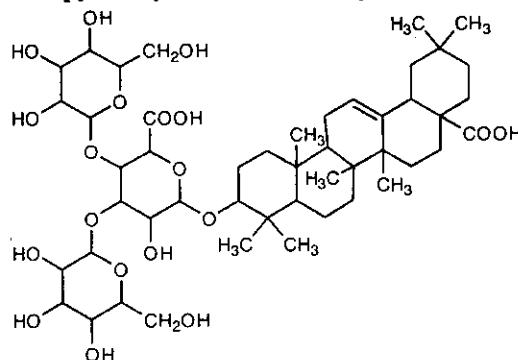
§ Oleanolic acid 3-glycosides; Triglycosides, 3-O- $[\beta$ -D-Glucopyranosyl-(1 → 4)- $[\beta$ -D-galactopyranosyl-(1 → 3)]- β -D-glucuronopyranoside]

[化学名・別名] Calendulaglycoside B

[CAS No.] 29660-93-3

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

[構造式]



[分子式] $C_{48}H_{78}O_{19}$

[分子量] 957.117

[基原] 次の植物から分離: *Calendula officinalis*

-----文献-----

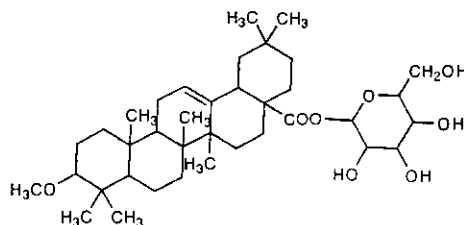
Kasprzyk, Z. et al., *Phytochemistry*, 1967, 6, 69-75, (Calendulaglycosides)

§ Oleanolic acid glycosyl esters; Monoglycosides, Me ether, β -D-glucopyranosyl ester

[CAS No.] 51996-63-5

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

[構造式]



[分子式] $C_{37}H_{60}O_5$

[分子量] 632.876

[基原] 次の植物から分離: *Calendula officinalis*

-----文献-----

Takabe, S. et al., *Carbohydr. Res.*, 1979, 76, 101-108, (Cussonoside B, 合成法)

Kikuchi, M. et al., *Yakugaku Zasshi*, 1982, 102, 533, (Ligustrin A)

Akai, E. et al., *Chem. Pharm. Bull.*, 1985, 33, 3715-3723, (Rotundiosides B and C)

Dubois, M.A. et al., *Planta Med.*, 1986, 52, 80-83, (Cussonoside B)

Shao, Y. et al., *Planta Med.*, 1995, 61, 446-449, (Asteryunnanoside F)

Koichi, M. et al., *Phytochemistry*, 1997, 46, 977-979, (Ligustrins)

Grishkovets, V.I. et al., *Khim. Prir. Soedin.*, 1999, 35, 87-90; *Chem. Nat. Compd. (Engl. Transl.)*, 1999, 35, 70-72, (Helicoside L-8a)

Koichi, M. et al., *Phytochemistry*, 1997, 46, 977-979, (Ligustrins)
Grishkovets, V.I. et al., *Khim. Prir. Soedin.*, 1999, 35, 87-90; *Chem. Nat. Compd. (Engl. Transl.)*, 1999, 35, 70-72, (Helicoside L-8a)

§ **Stigmastan-3-ol; (3 β ,5 α ,24R)-form**

[化学名・別名] Fucostanol. β -Sitostanol. Stigmastanol. Spinastanol. Dihydro- β -sitosterol

[CAS No.] 83-45-4

[その他の CAS No.] 19466-47-8

[化合物分類] ステロイド (Stigmastane steroids). (C29)

[構造式]

[分子式] $C_{29}H_{52}O$

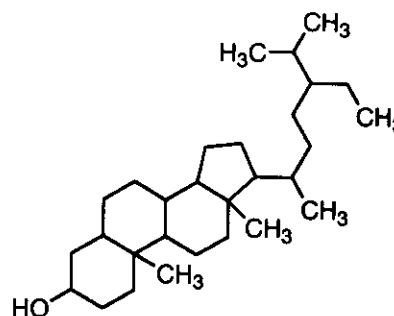
[分子量] 416.729

[基原] *Calendula officinalis*. またその他の高等植物からも得られる, 例えばトウモロコシ, *Calycanthus floridus*, *Sphagnum* のコケ

[性状] 結晶 (EtOH)

[融点] Mp 136-137 °C

[比旋光度]: $[\alpha]_D^{20} +24.8$ (CHCl₃)



-----文献-----

Larsen, C.D., *J.A.C.S.*, 1938, 60, 2431

Tamura, T. et al., *Nippon Kagaku Zasshi*, 1958, 79, 1011; *CA*, 54, 24857, (Feruloyldihydro- β -sitosterol)

Rubinstein, I. et al., *Phytochemistry*, 1976, 15, 195, (H-NMR)

§ **20-Taraxastene-3,16-diol; (3 β ,16 β)-form**

[化学名・別名] Faradiol. Isoarnidendiol

[CAS No.] 20554-95-4

[化合物分類] テルペノイド (Taraxastane triterpenoids)

[構造式]

[分子式] $C_{30}H_{50}O_2$

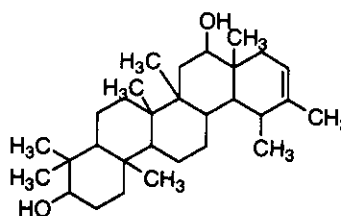
[分子量] 442.724

[基原] *Inter alia*, *Arnica montana*, *Tussilago farfara*, *Helianthus annuus*, *Senecio alpinus*, *Calendula officinalis*

[性状] 結晶

[融点] Mp 236-237 °C

[比旋光度]: $[\alpha]_D +44$



-----文献-----

Zimmerman, J., *Helv. Chim. Acta*, 1943, 26, 642-647, (Faradiol, 分離)

St. Pyrek, J. et al., *Tet. Lett.*, 1973, 809-810, (Faradiol, 構造決定)

St. Pyrek, J., *Pol. J. Chem. (Rocz. Chem.)*, 1977, 51, 2331-2342, (Faradiol, 構造決定)

Zitterl-Eglseer, K. et al., *J. Ethnopharmacol.*, 1997, 57, 139-144, (Faradiol esters)

§ **20-Taraxastene-3,16-diol; (3 β ,16 β)-form, 3-Dodecanoyl**

[化学名・別名] Faradiol laurate

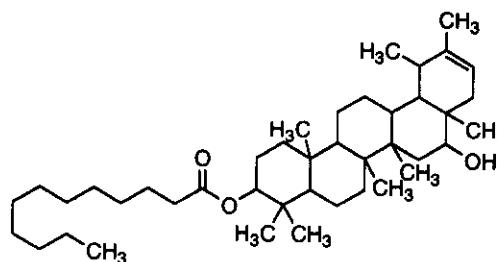
[化合物分類] テルペノイド (Taraxastane triterpenoids)

[構造式]

[分子式] $C_{42}H_{72}O_2$

[分子量] 625.029

[基原] *Calendula officinalis*



-----文献-----

Zimmerman, J., *Helv. Chim. Acta*, 1943, 26, 642-647, (Faradiol, 分離)

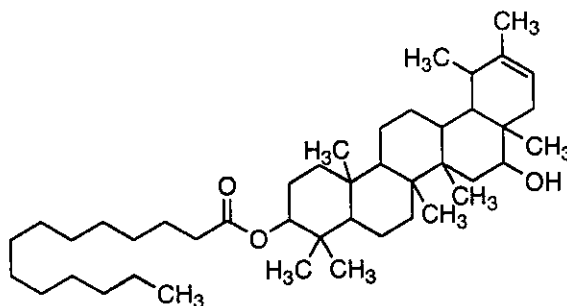
St. Pyrek, J. et al., *Tet. Lett.*, 1973, 809-810, (Faradiol, 構造決定)

St. Pyrek, J., *Pol. J. Chem. (Rocz. Chem.)*, 1977, 51, 2331-2342, (Faradiol, 構造決定)

St. Pyrek, J. et al., *Pol. J. Chem. (Rocz. Chem.)*, 1978, 52, 97-106, (Mass)

Zitterl-Eglseer, K. et al., *J. Ethnopharmacol.*, 1997, 57, 139-144, (Faradiol esters)

[化学名・別名] Faradiol myristate
[CAS No.] 193690-82-3
[化合物分類] テルペノイド
(Taraxastane triterpenoids)
[構造式]



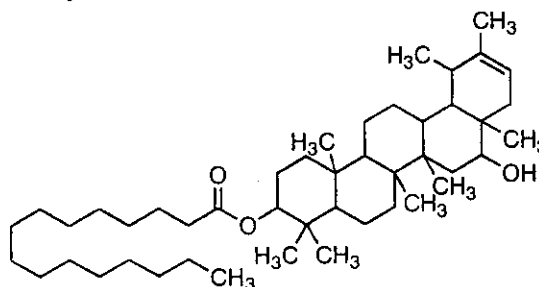
[分子式] $C_{44}H_{76}O_3$
[分子量] 653.083
[基原] *Calendula officinalis*

-----文献-----

Zimmerman, J., *Helv. Chim. Acta*, 1943, 26, 642-647, (Faradiol, 分離)
St. Pyrek, J. et al., *Tet. Lett.*, 1973, 809-810, (Faradiol, 構造決定)
St. Pyrek, J., *Pol. J. Chem. (Rocz. Chem.)*, 1977, 51, 2331-2342, (Faradiol, 構造決定)
St. Pyrek, J. et al., *Pol. J. Chem. (Rocz. Chem.)*, 1978, 52, 97-106, (Mass)
Zitterl-Eglseer, K. et al., *J. Ethnopharmacol.*, 1997, 57, 139-144, (Faradiol esters)

§ 20-Taraxastene-3,16-diol; (3 β ,16 β)-form, 3-Hexadecanoyl

[化学名・別名] Faradiol palmitate
[CAS No.] 193690-84-5
[化合物分類] テルペノイド (Taraxastane triterpenoids)
[構造式]



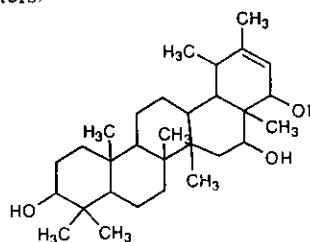
[分子式] $C_{46}H_{80}O_3$
[分子量] 681.136
[基原] *Calendula officinalis*

-----文献-----

Zimmerman, J., *Helv. Chim. Acta*, 1943, 26, 642-647, (Faradiol, 分離)
St. Pyrek, J. et al., *Tet. Lett.*, 1973, 809-810, (Faradiol, 構造決定)
St. Pyrek, J., *Pol. J. Chem. (Rocz. Chem.)*, 1977, 51, 2331-2342, (Faradiol, 構造決定)
St. Pyrek, J. et al., *Pol. J. Chem. (Rocz. Chem.)*, 1978, 52, 97-106, (Mass)
Zitterl-Eglseer, K. et al., *J. Ethnopharmacol.*, 1997, 57, 139-144, (Faradiol esters)

§ 20-Taraxastene-3,16,22-triol; (3 β ,16 β ,22 α)-form

[化学名・別名] Heliantriol C
[CAS No.] 71876-60-3
[化合物分類] テルペノイド (Taraxastane triterpenoids)
[構造式]



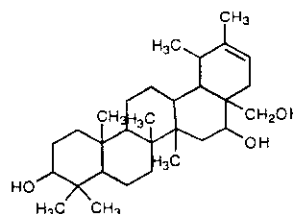
[基原] *Calendula officinalis*, *Helianthus annuus*
[性状] 結晶
[融点] Mp 229-230 °C (220-226 °C)
[比旋光度]: $[\alpha]_D^{20} +77$ (MeOH)

-----文献-----

St Pyrek, J., *Pol. J. Chem. (Rocz. Chem.)*, 1979, 53, 1071, (分離, H-NMR, Mass)
Wilkomorski, B. et al., *Phytochemistry*, 1985, 24, 3066; 1986, 25, 2667, (分離, H-NMR, Mass)
Hu, L. et al., *Zhiwu Xuebao*, 1997, 39, 85; *CA*, 127, 231901b, (hexadecanoyl)

§ 20-Taraxastene-3,16,28-triol; (3 β ,16 β)-form

[化学名・別名] Heliantriol B₀, Heterobetulin
[CAS No.] 74715-49-4
[化合物分類] テルペノイド (Taraxastane triterpenoids)
[構造式]
[分子式] $C_{30}H_{50}O_3$
[分子量] 458.723
[基原] *Helianthus annuus*, *Calendula officinalis*



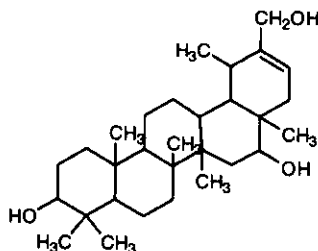
[分子量] 458.723
[基原] *Helianthus annuus*, *Calendula officinalis*
[性状] 結晶 (EtOH 溶液)
[融点] Mp 248-254 °C
[比旋光度]: $[\alpha]_D +33$ (MeOH)

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St Pyrek, J., Pol. J. Chem. (Rocz. Chem.), 1979, 53, 2465, (分離, H-NMR, Mass)

§ 20-Taraxastene-3,16,30-triol; (3 β , 16 β)-form

[化学名・別名] Heliantriol F
[CAS No.] 71876-59-0
[化合物分類] テルペノイド (Taraxastane triterpenoids)
[構造式]
[分子式] $C_{30}H_{50}O_3$
[分子量] 458.723
[基原] *Helianthus annuus*, *Calendula officinalis*
[性状] 結晶 (EtOH 溶液) (as tri-Ac)
[融点] Mp 190-193 °C (tri-Ac)
[比旋光度]: $[\alpha]_D +53.1$ (MeOH) (tri-Ac)



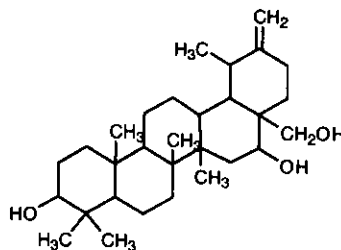
-----文献-----

St Pyrek, J., Pol. J. Chem. (Rocz. Chem.), 1979, 53, 1071, (分離, H-NMR, Mass)

Wilkomorski, B. et al., Phytochemistry, 1985, 24, 3066; 1986, 25, 2667, (分離, H-NMR, Mass)

§ 20(30)-Taraxastene-3,16,28-triol; (3 β , 16 β)-form

[化学名・別名] Heliantriol B₁
[CAS No.] 74715-48-3
[化合物分類] テルペノイド (Taraxastane triterpenoids)
[構造式]
[分子式] $C_{30}H_{50}O_3$
[分子量] 458.723
[基原] *Helianthus annuus*, *Calendula officinalis*
[性状] 結晶 (hexane) (as tri-Ac)
[融点] Mp 182-187 °C (tri-Ac)

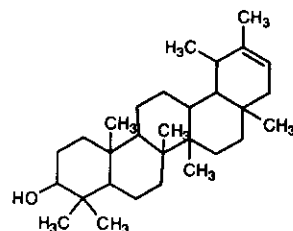


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St Pyrek, J., Pol. J. Chem. (Rocz. Chem.), 1979, 53, 2465, (分離, H-NMR)

§ 20-Taraxasten-3-ol; 3 β -form

[化学名・別名] psi-Taraxasterol. Heterolupeol. Calendol. Pseudotaraxasterol
[CAS No.] 464-98-2
[化合物分類] テルペノイド (Taraxastane triterpenoids)
[構造式]
[分子式] $C_{30}H_{50}O$
[分子量] 426.724
[基原] *Taraxacum officinale*, *Calendula officinalis*. また *Doona* spp., *Arnica montana*, *Sonchus* spp., その他からも得られる
[性状] 結晶 (EtOH)
[融点] Mp 217-219 °C
[比旋光度]: $[\alpha]_D +50$ (CHCl₃)



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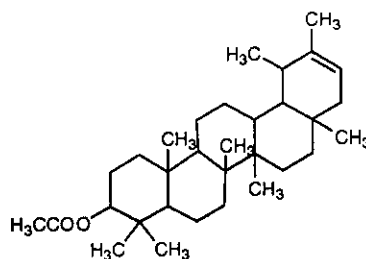
Ames, T.R. et al., J.C.S., 1954, 1905, (構造決定)

Karrer, W. et al., Konstitution und Vorkommen der Organischen Pflanzenstoffe, 2nd edn., Birkhäuser Verlag, Basel, 1972, no. 2013, (生育)

§ 20-Taraxasten-3-ol; 3 β -form, Ac

[CAS No.] 4586-65-6
[化合物分類] テルペノイド (Taraxastane triterpenoids)
[構造式]

[分子式] $C_{22}H_{32}O_2$
 [分子量] 468.762
 [基原] *Calendula officinalis*, *Cirsium*, *Elateriospermum*, その他
 [性状] 結晶 (EtOAc)
 [融点] Mp 240-241 °C
 [比旋光度]: $[\alpha]_D^{25} +53$ (CHCl₃)

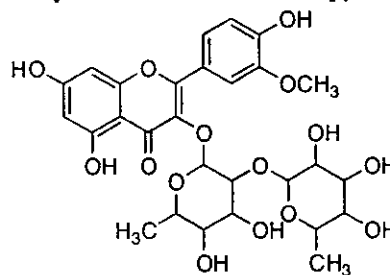


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Ames, T.R. et al., J.C.S., 1954, 1905, (構造決定)
 Karrer, W. et al., Konstitution und Vorkommen der Organischen Pflanzenstoffe, 2nd edn., Birkhäuser Verlag, Basel, 1972, no. 2013, (生育)
 Chiang, Y.M. et al., J. Nat. Prod., 2000, 63, 898-901, (epoxide-Ac)

§ 3,4',5,7-Tetrahydroxy-3'-methoxyflavone; 3-O-[α -L-Rhamnopyranosyl-(1 \rightarrow 2)- α -L-rhamnopyranoside]

[化学名・別名] Calendoflaside
 [CAS No.] 121064-69-5
 [化合物分類] フラボノイド (Flavonols; 5 \times O-置換基)
 [構造式]



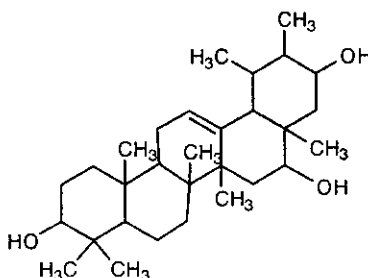
[分子式] $C_{28}H_{32}O_{15}$
 [分子量] 608.552
 [基原] 次の植物から分離: *Calendula officinalis*

-----文献-----

Bolzani, V. da S. et al., J. Braz. Chem. Soc., 1996, 7, 157-160; CA, 125, 270483v, (3-rhamnoside)

§ 12-Ursene-3,16,21-triol; (3 ξ , 16 θ , 21 θ)-form

[CAS No.] 52084-05-6
 [化合物分類] テルペノイド (Ursane triterpenoids)
 [構造式]
 [分子式] $C_{30}H_{50}O_3$
 [分子量] 458.723
 [基原] *Calendula officinalis* の花
 [性状] 結晶
 [融点] Mp 244-250 °C

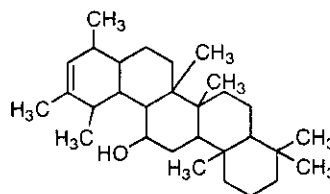


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Kasprzyk, Z. et al., Phytochemistry, 1973, 12, 2299
 Wilkomirski, B. et al., Phytochemistry, 1985, 24, 3066. (分離)

§ 20-Ursen-12-ol; 12 β -form

[CAS No.] 20545-50-0
 [化合物分類] テルペノイド (Ursane triterpenoids)
 [構造式]
 [分子式] $C_{30}H_{50}O$
 [分子量] 426.724
 [基原] 次の植物の花から分離: *Calendula officinalis*
 [融点] Mp 185-186 °C
 [比旋光度]: $[\alpha]_D^{25} +39$ (CHCl₃)
 [その他のデータ] Poorly descr. in the paper; not clear that it is a nat. prod.



-----文献-----

Kasprzyk, Z. et al., Phytochemistry, 1968, 7, 1631

*****マルバダイオウ (Garden rhubarb, Edible rhubarb) *****

§ § タデ科マルバダイオウ (*Rheum rhaponticum* L.) の葉柄または根。