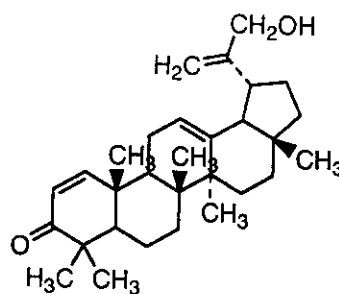


[化学名・別名] Mangiupenone  
[CAS No.] 152369-65-8  
[化合物分類] テルペノイド (Lupane triterpenoids)  
[構造式]



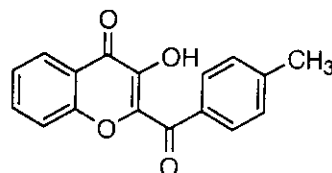
[分子式]  $C_{30}H_{44}O_2$   
[分子量] 436.676  
[基原] *Mangifera indica* var. *Dusehri* の茎皮

----- 文献 -----

Sharma, S.K. et al., *Indian Drugs*, 1993, 30, 446; *CA*, 120, 73344w

§ 3-Hydroxy-2-(4-methylbenzoyl)-4H-1-benzopyran-4-one (CAS 名)

[化学名・別名] 3-Hydroxy-2-(4-methylbenzoyl) chromone  
[CAS No.] 173866-78-9  
[化合物分類] ベンゾピラノイド (1-Benzopyrans)  
[構造式]



[分子式]  $C_{17}H_{13}O_4$   
[分子量] 280.279  
[基原] *Mangifera indica* の根

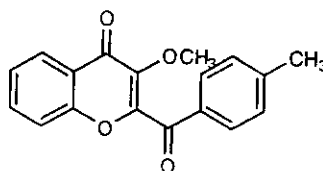
----- 文献 -----

Khan, M.A. et al., *Fitoterapia*, 1995, 66, 423-424. (分離, 構造決定)

§ 3-Hydroxy-2-(4-methylbenzoyl)-4H-1-benzopyran-4-one; Me ether

[化学名・別名] 3-Methoxy-2-(4-methylbenzoyl)-4H-1-benzopyran-4-one. 3-Methoxy-2-(4-methylbenzoyl) chromone

[CAS No.] 173866-79-0  
[化合物分類] ベンゾピラノイド (1-Benzopyrans)  
[構造式]



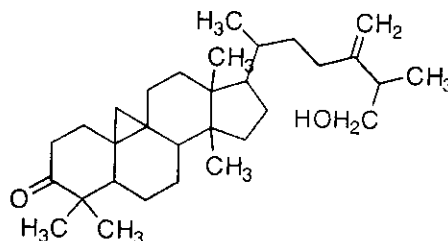
[分子式]  $C_{18}H_{15}O_4$   
[分子量] 294.306  
[基原] *Mangifera indica* の根

----- 文献 -----

Khan, M.A. et al., *Fitoterapia*, 1995, 66, 423-424. (分離, 構造決定)

§ 26-Hydroxy-24-methylenecycloartan-3-one; (25S)-form

[CAS No.] 232266-06-7  
[化合物分類] テルペノイド (Cycloartane triterpenoids)  
[構造式]  
[分子式]  $C_{31}H_{50}O_2$



[分子量] 454.735  
[基原] *Mangifera indica*  
[性状] 針状結晶 (CHCl<sub>3</sub>/MeOH)  
[融点] Mp 145-146 °C  
[比旋光度]:  $[\alpha]_D^{25} +175$  (c. 0.6 in CHCl<sub>3</sub>)

----- 文献 -----

Pupo, M.T. et al., *Phytochemistry*, 1996, 42, 795. (分離, H-NMR, C13-NMR)

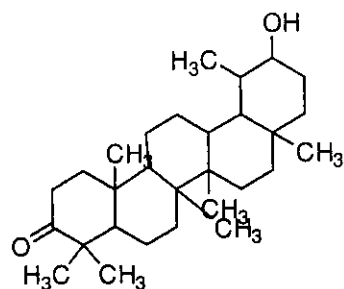
Anjaneyulu, V et al., *Phytochemistry*, 1999, 50, 1229-1236. (分離, H-NMR, C13-NMR)

§ 20-Hydroxy-30-norursan-3-one; 20  $\alpha$ -form

[化学名・別名] Mangiferdesmethylursanone  
[CAS No.] 259144-62-2

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

[分子式]  $C_{29}H_{48}O_2$   
[分子量] 428.697  
[基原] *Mangifera indica* の根皮  
[性状] 結晶 (MeOH)  
[融点] Mp 228-229 °C  
UV: [neutral]  $\lambda_{max}$  242 (log  $\epsilon$  2.1) (MeOH)

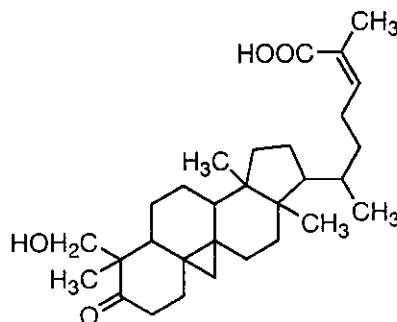


-----文献-----

Gupta, J. et al., Indian J. Chem., Sect. B, 1999, 38, 1093-1098

§ 28-Hydroxy-3-oxocycloart-24-en-26-oic acid; (24E)-form

[化学名・別名] 28-Hydroxymangiferonic acid  
[CAS No.] 155511-27-6  
[化合物分類]テルペノイド (Cycloartane triterpenoids)  
[構造式]  
[分子式]  $C_{30}H_{46}O_4$   
[分子量] 470.691  
[基原] *Mangifera indica*  
[性状] 結晶 ( $C_6H_6$ )  
[融点] Mp 182-183 °C  
[比旋光度]:  $[\alpha]_D^{25} +42$  (c, 1.2 in  $CHCl_3$ )  
[その他のデータ] Incorrectly named as 29-Hydroxymangiferonic acid in ref.

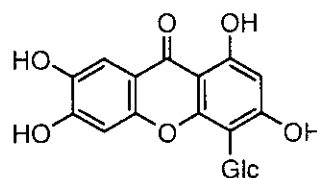


-----文献-----

Anjaneyulu, V. et al., Phytochemistry, 1994, 35, 1301, (分離, H-NMR, C13-NMR)

§ Isomangiferin

[化学名・別名] 4- $\beta$ -D-Glucopyranosyl-1,3,6,7-tetrahydroxy-9H-xanthen-9-one (CAS 名).  
4-Glucosyl-1,3,6,7-tetrahydroxyxanthone  
[CAS No.] 24699-16-9  
[化合物分類] 単環芳香族 (Xanthenes; 4 × O-置換基)  
[構造式]  
[分子式]  $C_{19}H_{18}O_{11}$   
[分子量] 422.345  
[基原] *Anemarrhena asphodeloides*, *Hedysarum flavescens*, *Mangifera indica*, *Iris unguicularis*. Widespread in ferns and apparently randomly distributed among fern spp. (see Murakami review)  
[性状] 青白い黄色の針状結晶 (MeOH)  
[融点] Mp 260 °C で分解  
[比旋光度]:  $[\alpha]_D +5.5$  (Py)

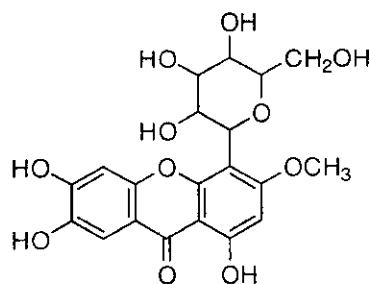


-----文献-----

Aritami, M. et al., Tet. Lett., 1969, 941, (分離, 構造決定)  
Arisawa, M. et al., Chem. Pharm. Bull., 1976, 24, 1609, (分離)  
Fujita, M. et al., Chem. Pharm. Bull., 1982, 30, 2342, (分離)  
Imperato, F., Can. J. Bot., 1991, 69, 218, (Isochinomin)

§ Isomangiferin; 3-Me ether

[化学名・別名] 3-O-Methylisomangiferin. Isochinomin  
[CAS No.] 83118-66-5  
[化合物分類] 単環芳香族 (Xanthenes; 4 × O-置換基)  
[構造式]  
[分子式]  $C_{20}H_{20}O_{11}$   
[分子量] 436.371  
[基原] *Cystopteris fragilis*, *Mangifera indica*  
[その他のデータ] Trivial name is misleading



-----文献-----

Imperato, F., Can. J. Bot., 1991, 69, 218, (Isochinomin)

### § Mangcoumarin

[化学名・別名] 2,3-Dihydro-4,9-dihydroxy-6-methyl-7H-furo[3,2-g][1]benzopyran-7-one (CAS 名)

[CAS No.] 152340-43-7

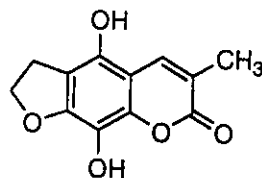
[化合物分類] ベンゾピラノイド (5,7,8-Trioxxygenated coumarins)

[構造式]

[分子式] C<sub>12</sub>H<sub>10</sub>O<sub>5</sub>

[分子量] 234.208

[基原] *Mangifera indica* var. *Dusehri* の茎皮



----- 文 献 -----

Sharma, S.K. et al., *Indian Drugs*, 1993, 30, 446; *CA*, 120, 73344w

### § Mangiferin

[化学名・別名] 2-β-D-Glucopyranosyl-1,3,6,7-tetrahydroxy-9H-xanthen-9-one (CAS 名). Euxanthogen. Chinomine. Alpizarin. Hedysaride. Manniferin. Chedisaride

[CAS No.] 4773-96-0

[関連 CAS No.] 74484-89-2

[化合物分類] 単環芳香族 (Xanthenes; 4 × O-置換基)

[構造式]

[分子式] C<sub>19</sub>H<sub>18</sub>O<sub>11</sub>

[分子量] 422.345

[一般的性質] Manniferin is a CA misprint and Chedisaride appears to be an alternative transliteration of Hedysaride from the Russian

[基原] *Mangifera indica* の葉, 心材, 茎皮, *Iris* spp., また *Salacia prenoides*, *Aphloia madagascariensis*, *Athyrium mesosorum*, *Anemarrhena asphodeloides*, *Belamcanda chinensis*, *Hedysarum ussuriense*. Widespread in ferns (see Murakami review). Distribution in fern spp. appears random

[性状] 青白い黄色の針状結晶 (EtOH 溶液)

[融点] Mp 278-280 °C (270-272 °C (分解))

[比旋光度]: [α]<sub>D</sub><sup>25</sup> +32 (EtOH 溶液)

UV: [neutral] λ<sub>max</sub> 240; 241 (ε 18200); 257 (ε 19500); 315 (ε 9600); 316; 364; 365 (ε 8500) (MeOH) (Berdy) [base] λ<sub>max</sub> 247; 270; 271; 389; 390 (MeOH-NAOH) (Berdy)

[化学物質毒性データ総覧 (RTECS) 登録番号] OP1927800

[販売元] Sigma:M3547

----- 文 献 -----

Bhatia, V.K. et al., *Tetrahedron*, 1967, 23, 1363, (分離, UV, IR)

Glyzina, G.S. et al., *Khim. Prir. Soedin.*, 1969, 5, 322; *Chem. Nat. Compd. (Engl. Transl.)*, 1969, 5, 272, (分離)

Glyzin, V.I. et al., *Khim. Prir. Soedin.*, 1973, 9, 434; *Chem. Nat. Compd. (Engl. Transl.)*, 1973, 9, 409, (Glucomangiferin)

Ghosal, S. et al., *Phytochemistry*, 1978, 17, 2119, (Homomangiferin)

Markham, K.R. et al., *Phytochemistry*, 1980, 19, 415, (6'-O-Acetylmangiferin, benzoylmangiferins)

Fujita, M. et al., *Chem. Pharm. Bull.*, 1982, 30, 2342, (7-O-Methylmangiferin)

Tanaka, T. et al., *Chem. Pharm. Bull.*, 1984, 32, 2676, (Mangiferin 6-gallate)

Wada, H. et al., *Chem. Pharm. Bull.*, 1995, 43, 461, (分離, H-NMR)

\*\*\*RTECS (化学物質毒性データ)\*\*\*

生体影響物質 : 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-ラット.

投与量・期間 : 365 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.

参照文献

*Journal of Pharmaceutical Sciences*. (American Pharmaceutical Assoc., 2215 Constitution Ave., NW, Washington, DC 20037) 61,1838,1972

<<試験方法>> LD50 試験 (50%致死量試験).

被験動物 : げっ歯類-マウス.  
 投与量・期間 : 2300 ug/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

Problemi na Vutreshnata Meditsina. Problems of Internal Medicine. (Durzhavno Izdatel'stvo Meditsina i Fizkultura, Pl. Slaveikov 11, Sofia, Bulgaria) 8(2),109,1980

§ **Mangiferin; 6'-O-(3,4,5-Trihydroxybenzoyl)**

[化学名・別名] Mangiferin 6'-gallate

[CAS No.] 92631-82-8

[化合物分類] タンニン化合物 (Simple gallate esters), 単環芳香族 (Xanthenes; 4 × O-置換基)

[構造式]

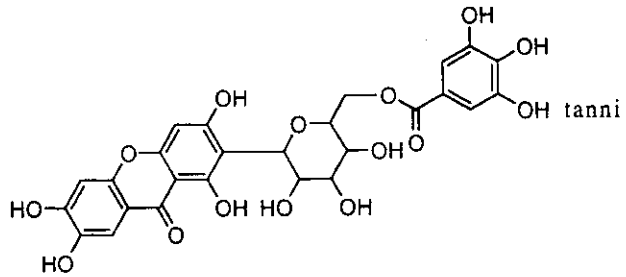
[分子式] C<sub>28</sub>H<sub>22</sub>O<sub>15</sub>

[分子量] 574.451

[基原] 次の植物の葉から分離: *Mangifera indica*

[性状] 黄色の粒状の塊 + 1/2H<sub>2</sub>O (H<sub>2</sub>O)

[比旋光度]: [α]<sub>D</sub><sup>20</sup> -35.2 (c, 0.2 in MeOH)



-----文献-----

Tanaka, T. et al., Chem. Pharm. Bull., 1984, 32, 2676, (Mangiferin 6-gallate)

§ **Mangiferin; 3-Me ether**

[化学名・別名] Homomangiferin. 3-O-Methylmangiferin

[CAS No.] 21794-66-1

[化合物分類] 単環芳香族 (Xanthenes; 4 × O-置換基)

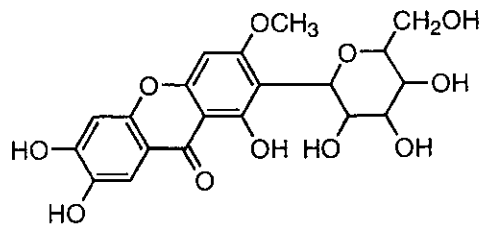
[構造式]

[分子式] C<sub>29</sub>H<sub>20</sub>O<sub>11</sub>

[分子量] 436.371

[基原] *Mangifera indica*, *Hoppea dichotoma*

[融点] Mp 255-257 °C



-----文献-----

Ghosal, S. et al., Phytochemistry, 1978, 17, 2119, (Homomangiferin)

§ **6-Nonyl-2-cyclohexen-1-ol; (ξ)-form, O-β-lucopyranoside**

[化学名・別名] Mangalkanyl glucoside

[CAS No.] 259144-63-3

[化合物分類] 脂肪族化合物 (Monocarbocyclic alcohols)

[構造式]

[分子式] C<sub>27</sub>H<sub>38</sub>O<sub>6</sub>

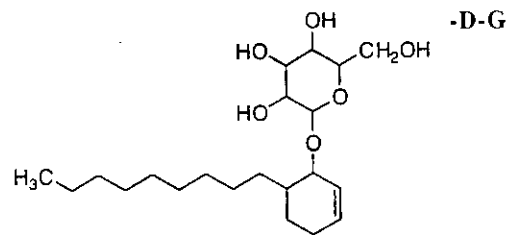
[分子量] 386.528

[基原] *Mangifera indica* の根皮

[性状] 青白い黄色の結晶 (CHCl<sub>3</sub>/MeOH)

[融点] Mp 176-178 °C

UV: [neutral] λ<sub>max</sub> 215 (log ε 6.9) (MeOH)



-----文献-----

Gupta, J. et al., Indian J. Chem., Sect. B, 1999, 38, 1093-1098

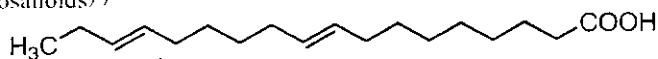
§ **9,15-Octadecadienoic acid; (Z,Z)-form**

[化学名・別名] Mangiferic acid

[CAS No.] 18402-92-1

[化合物分類] 脂肪族化合物 (Unbranched alkenic carboxylic acids and lactones), 脂肪族化合物 (Oxylipins (including Eicosanoids))

[構造式]



[分子式] C<sub>18</sub>H<sub>32</sub>O<sub>2</sub>

[分子量] 280.45

[分子量] 280.45

[基原] *Mangifera indica* の果実, ヒトの乳

----- 文献 -----

Murawski, U. et al., Z. Naturforsch., C, 1974, 29, 1, (分離)

Snyder, J.M. et al., J. Am. Oil Chem. Soc., 1982, 59, 469, (合成法)

Shibahara, A. et al., Biochim. Biophys. Acta, 1993, 1170, 245, (分離, 構造決定)

Gruiec, R. et al., Bull. Soc. Chim. Fr., 1994, 131, 699, (合成法, H-NMR, C13-NMR)

§ 13 (18)-Oleanen-11-one

[化学名・別名] Mangiferoleanone

[CAS No.] 18674-26-5

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

[構造式]

[分子式]  $C_{30}H_{48}O$

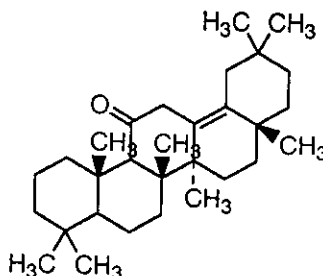
[分子量] 424.709

[基原] *Mangifera indica* の根皮

[性状] 結晶 (CHCl<sub>3</sub>/MeOH)

[融点] Mp 223-225 °C (186-188 °C)

[比旋光度]:  $[\alpha]_D^{25} -48$



----- 文献 -----

Barton, D.H.R. et al., J.C.S. (C), 1968, 1031-1040, (合成法)

Gupta, J. et al., Indian J. Chem., Sect. B, 1999, 38, 1093-1098, (分離, IR, H-NMR, Mass)

§ 3-Oxocycloart-24-en-26-oic acid; (24E)-form

[化学名・別名] Mangiferonic acid

[CAS No.] 13878-90-5

[化合物分類] AJ1760, テルペノイド (Cycloartane triterpenoids)

[構造式]

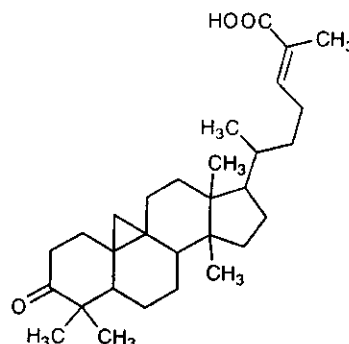
[分子式]  $C_{30}H_{46}O_3$

[分子量] 454.692

[基原] 次の植物から分離: *Shorea acuminata*, *Mangifera indica*

[性状] 結晶

[融点] Mp 187-189 °C



----- 文献 -----

Takahashi, K. et al., Chem. Pharm. Bull., 1975, 23, 538; 1976, 24, 2000, (分離, 構造決定, C13-NMR)

Sy, L.-K. et al., Phytochemistry, 1997, 44, 1099, (C13-NMR)

§ Stigmast-8-ene; (24ξ)-form

[化学名・別名] Mangsterol

[CAS No.] 152369-64-7

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

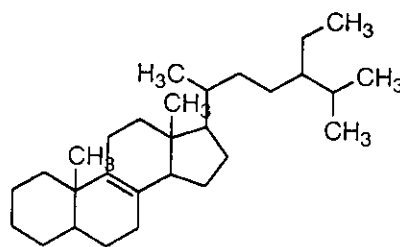
[構造式]

[分子式]  $C_{29}H_{50}$

[分子量] 398.714

[基原] *Mangifera indica* var. *Dusehri* の茎皮

[その他のデータ] Misleading name; not a sterol



----- 文献 -----

Sharma, S.K. et al., Indian Drugs, 1993, 30, 446-449; CA, 120, 73344w

§ 3,20-Taraxastanediol; (3β,20ξ)-form

[化学名・別名] ψ-Taraxastane-3,20-diol

[CAS No.] 10376-47-3

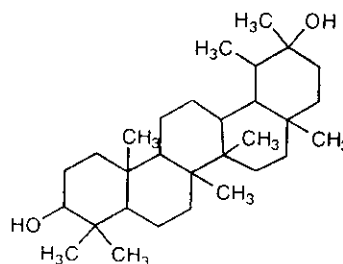
[化合物分類] テルペノイド (Taraxastane triterpenoids)

[構造式]

[分子式]  $C_{30}H_{52}O_2$

[分子量] 444.74

[基原] マニラエレミ樹脂, *Mangifera indica*



[融点] Mp 270-272 °C  
[比旋光度]:  $[\alpha]_D^{25} -10.9$  (c, 1.1 in CHCl<sub>3</sub>)

-----文献-----

Anjaneyulu, V. et al., Phytochemistry, 1999, 50, 1229-1236, ( $\psi$ -Taraxastanol)

§ 3,20-Taraxastanediol; (3  $\beta$ , 20  $\xi$ )-form, 3-Ketone

[化学名・別名] 20-Hydroxy-3-taraxastanone.  $\psi$ -Taraxastanol

[CAS No.] 232266-07-8

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

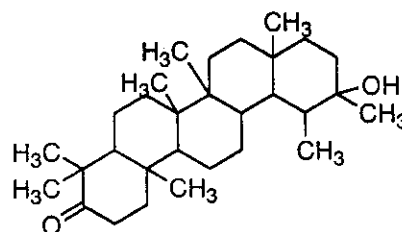
[構造式]

[基原] *Mangifera indica*

[性状] 結晶 (CHCl<sub>3</sub>/MeOH)

[融点] Mp 275-278 °C

[比旋光度]:  $[\alpha]_D^{20} -9$  (CHCl<sub>3</sub>)



-----文献-----

Anjaneyulu, V. et al., Phytochemistry, 1999, 50, 1229-1236, ( $\psi$ -Taraxastanol)

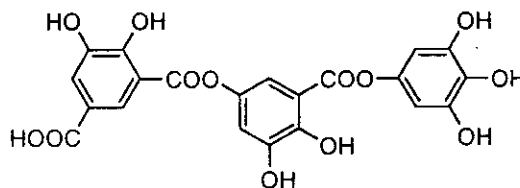
§ *m*-Trigallic acid

[化学名・別名] 3,4-Dihydroxy-5-[(3,4,5-trihydroxybenzoyl)oxy]benzoic acid 5-carboxy-2,3-dihydroxyphenyl ester (CAS 名). Metatrigallic acid

[CAS No.] 2131-66-0

[化合物分類] 単環芳香族 (Simple aryl ketones)

[構造式]



[分子式] C<sub>21</sub>H<sub>14</sub>O<sub>13</sub>

[分子量] 474.334

[基原] Turkish gallotannin and マンゴー (*Mangifera indica*) の果実

[性状] 微細針状結晶 (Me<sub>2</sub>CO 溶液)

[融点] Mp 228 °C (217 °C)

-----文献-----

King, H.G.C. et al., J.C.S., 1961, 3231, (合成法, IR)

Reddy, K.K. et al., Indian J. Chem., 1965, 3, 129; CA, 63, 3226a, (分離)

Crabtree, P.W. et al., J.C.S., 1965, 6888, (合成法, IR)

§ 3-Ursanone

[化学名・別名] Mangiferursanone

[CAS No.] 114717-95-2

[化合物分類] テルペノイド (Ursane triterpenoids)

[構造式]

[分子式] C<sub>30</sub>H<sub>50</sub>O

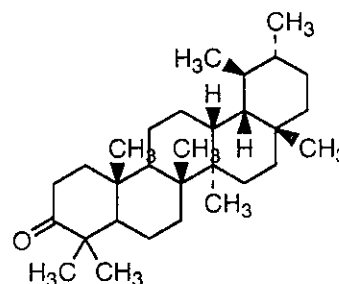
[分子量] 426.724

[基原] *Mangifera indica* の根皮, *Buddleia salviifolia* のオイル

[性状] 結晶 (CHCl<sub>3</sub>/MeOH)

[融点] Mp 236-238 °C

UV: [neutral]  $\lambda_{max}$  222 (log  $\epsilon$  5.4) (MeOH)



-----文献-----

Gupta, J. et al., Indian J. Chem., Sect. B, 1999, 38, 1093-1098

\*\*\*\*\*マンゴスチン (Mangosteen) \*\*\*\*\*

§ § オトギリソウ科マンゴスチン (*Garcinia mangostana* L.) の果実。

§ Calabaxanthone

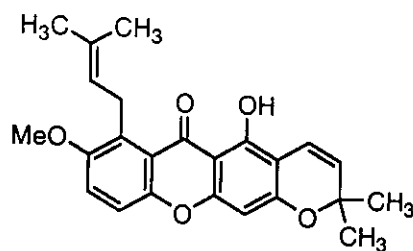
[化学名・別名] 5-Hydroxy-8-methoxy-2,2-dimethyl-7-(3-methyl-2-butenyl)-2*H*,6*H*-pyrano[3.2-*b*]xanthen-6-one (CAS 名)

[CAS No.] 39011-96-6

[化合物分類] 単環芳香族 (Xanthenes; 3 × O-置換基)

[化合物分類] 単環芳香族 (Xanthenes; 3 × O-置換基)  
[構造式]

[分子式]  $C_{24}H_{24}O_5$   
[分子量] 392.451  
[一般的性質] CAS numbering shown  
[基原] *Calophyllum calaba*, *Garcinia mangostana*  
[性状] 黄色の結晶 (EtOH)  
[融点] Mp 172 °C



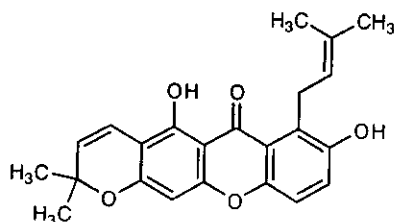
----- 文献 -----

Sen, A.K. et al., *Phytochemistry*, 1980, 19, 2223; 1981, 20, 183-185, (9-Hydroxycalabaxanthone)  
Mahabusarakam, W. et al., *J. Nat. Prod.*, 1987, 50, 474, (Isomangostin, Isomangostin hydrate)  
Chairungrilerd, N. et al., *Phytochemistry*, 1996, 43, 1099, (Mangostanol)

### § Calabaxanthone; O-De-Me

[化学名・別名] Demethylcalabaxanthone  
[CAS No.] 106897-03-4  
[化合物分類] 単環芳香族 (Xanthenes; 3 × O-置換基)  
[構造式]

[分子式]  $C_{23}H_{22}O_5$   
[分子量] 378.424  
[基原] *Calophyllum macrocarpum*, *Calophyllum walkeri*, *Garcinia mangostana*  
[性状] 黄色の針状結晶  
[融点] Mp 85 °C

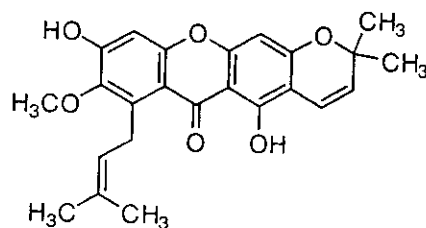


----- 文献 -----

Somanathan, R. et al., *J.C.S. Perkin 1*, 1972, 1935, (構造決定)  
Westerman, P.W. et al., *Org. Magn. Reson.*, 1979, 9, 631, (C13-NMR)  
Sen, A.K. et al., *Phytochemistry*, 1980, 19, 2223; 1981, 20, 183-185, (9-Hydroxycalabaxanthone)  
Ampofo, S.A. et al., *Phytochemistry*, 1986, 25, 2617, (誘導體)  
Mahabusarakam, W. et al., *J. Nat. Prod.*, 1987, 50, 474, (Isomangostin, Isomangostin hydrate)  
Chairungrilerd, N. et al., *Phytochemistry*, 1996, 43, 1099, (Mangostanol)

### § Calabaxanthone; 9-Hydroxy

[化学名・別名] 9-Hydroxycalabaxanthone  
[CAS No.] 35349-68-9  
[化合物分類] 単環芳香族 (Xanthenes; 4 × O-置換基)  
[構造式]  
[分子式]  $C_{23}H_{22}O_6$   
[分子量] 408.45  
[基原] *Garcinia mangostana*  
[性状] Bright 黄色の結晶 ( $C_6H_6$ )  
[融点] Mp 156-156 °C (152-154 °C)

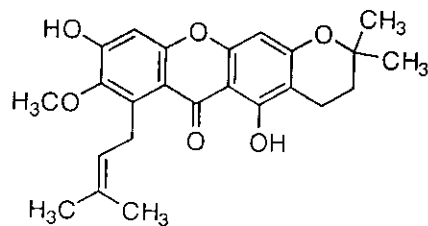


----- 文献 -----

Sen, A.K. et al., *Phytochemistry*, 1980, 19, 2223; 1981, 20, 183-185, (9-Hydroxycalabaxanthone)

### § Calabaxanthone; 3,4-Dihydro, 9-hydroxy

[化学名・別名] 3-Isomangostin  
[CAS No.] 19275-46-8  
[化合物分類] 単環芳香族 (Xanthenes; 4 × O-置換基)  
[構造式]  
[分子式]  $C_{23}H_{24}O_6$   
[分子量] 410.466  
[基原] *Garcinia mangostana*  
[性状] 結晶 ( $C_6H_6$ )  
[融点] Mp 155-160 °C (154-155 °C)



UV: [neutral]  $\lambda_{max}$  243 ( $\epsilon$  39800); 257 ( $\epsilon$  34670); 319 ( $\epsilon$  30200); 355 ( $\epsilon$  13180) (EtOH) (Berdy)

Mahabusarakam, W. et al., J. Nat. Prod., 1987, 50, 474. (Isomangostin, Isomangostin hydrate)

§ Calabaxanthone; 3,4-Dihydro, 3,9-dihydroxy

[化学名・別名] Mangostanol

[CAS No.] 184587-72-2

[化合物分類] 単環芳香族 (Xanthenes; 4 × O-置換基)

[構造式]

[分子式] C<sub>23</sub>H<sub>26</sub>O<sub>7</sub>

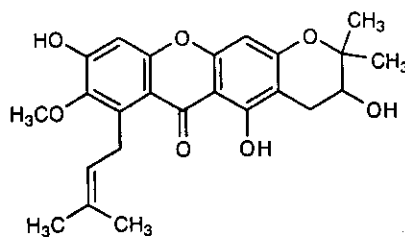
[分子量] 426.465

[基原] *Garcinia mangostana* の果実

[性状] 淡黄色の粉末 (CH<sub>2</sub>Cl<sub>2</sub>/MeOH)

[比旋光度]: [α]<sub>D</sub><sup>25</sup> +16.3 (c, 1 in MeOH)

UV: [neutral] λ<sub>max</sub> 208 (log ε 4.39); 242 (log ε 4.44); 306 (log ε 4.25); 333 (log ε 3.94) (MeOH)



-----文献-----

Chairungrilerd, N. et al., Phytochemistry, 1996, 43, 1099, (Mangostanol)

§ Calabaxanthone; 2',3,3',4-Tetrahydro, 3',9-dihydroxy

[化学名・別名] 3-Isomangostin hydrate

[CAS No.] 26063-96-7

[化合物分類] 単環芳香族 (Xanthenes; 4 × O-置換基)

[構造式]

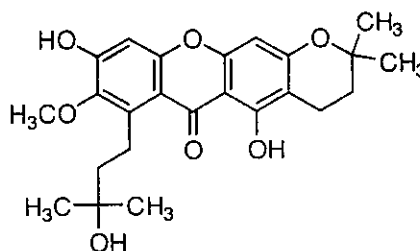
[分子式] C<sub>23</sub>H<sub>28</sub>O<sub>7</sub>

[分子量] 428.481

[基原] *Garcinia mangostana*

[性状] 結晶 (CH<sub>2</sub>Cl<sub>2</sub>)

[融点] Mp 182-183 °C



-----文献-----

Mahabusarakam, W. et al., J. Nat. Prod., 1987, 50, 474, (Isomangostin, Isomangostin hydrate)

§ 2-(3,7-Dimethyl-2,6-octadienyl)-1,3,5-trihydroxyxanthone; (E)-form

[化学名・別名] 2-Geranyl-1,3,5-trihydroxyxanthone. Mangostinone

[CAS No.] 166197-40-6

[化合物分類] 単環芳香族 (Xanthenes; 3 × O-置換基)

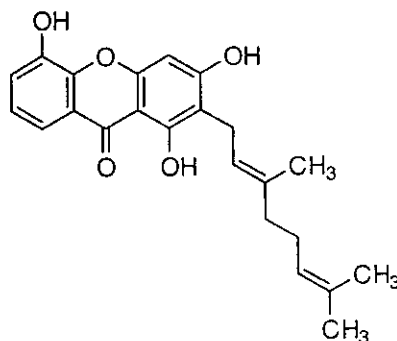
[構造式]

[分子式] C<sub>23</sub>H<sub>24</sub>O<sub>5</sub>

[分子量] 380.44

[基原] *Garcinia mangostana* の果皮

[性状] 無定型の黄色の粉末



-----文献-----

Asai, F. et al., Phytochemistry, 1995, 39, 943, (分離, UV, H-NMR, C13-NMR, Mass)

§ Garcinone A

[CAS No.] 76996-29-7

[化合物分類] 単環芳香族 (Xanthenes; 3 × O-置換基)

[構造式]

[分子式] C<sub>23</sub>H<sub>24</sub>O<sub>5</sub>

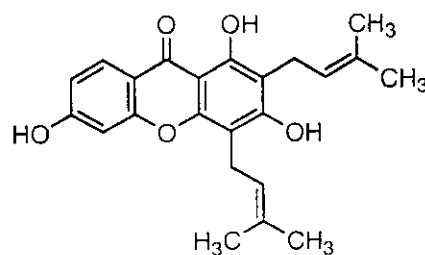
[分子量] 380.44

[一般的性質] The assigned struct. (illus.) has been synthesised incorrect

[基原] *Garcinia mangostana*

[性状] 黄色の結晶 (CHCl<sub>3</sub>/MeOH)

[融点] Mp 224-225 °C



and is

-----文献-----



-----文献-----

Sen, A.K. et al., *Phytochemistry*, 1982, 21, 1747  
Ahluwalia, V.K. et al., *Tetrahedron*, 1984, 40, 3303

§ **Garcinone B**

[化学名・別名] 5,9,11-Trihydroxy-3,3-dimethyl-10-(3-methyl-2-butenyl) pyrano[3,2-*a*] xanthen-12(3*H*)-one (CAS名)

[CAS No.] 76996-28-6

[化合物分類] 単環芳香族 (Xanthenes; 4 × O-置換基)

[構造式]

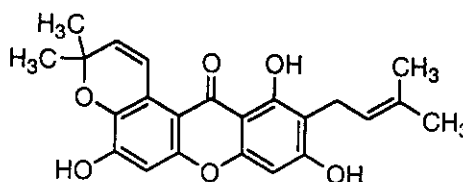
[分子式] C<sub>23</sub>H<sub>22</sub>O<sub>6</sub>

[分子量] 394.423

[基原] *Garcinia mangostana*

[性状] くすんだ黄色の塊 (C<sub>6</sub>H<sub>6</sub>/MeOH)

[融点] Mp 190-192 °C



-----文献-----

Sen, A.K. et al., *Phytochemistry*, 1982, 21, 1747  
Ishiguro, K. et al., *Phytochemistry*, 1995, 38, 867, (分離, H-NMR)

§ **3-Hydroxy-27-norcycloart-23-en-25-one; (3 β, 23E)-form**

[CAS No.] 132943-49-8

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

[構造式]

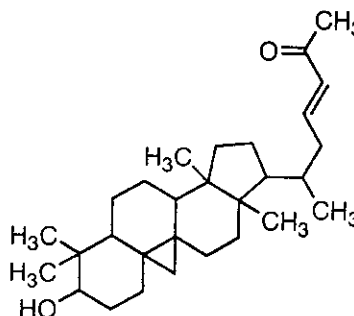
[分子式] C<sub>29</sub>H<sub>46</sub>O<sub>2</sub>

[分子量] 426.681

[基原] *Garcinia mangostana*, *Tillandsia usneoides*

[融点] Mp 142-143 °C

[比旋光度]: [α]<sub>D</sub><sup>27</sup> +32.5 (c, 0.24 in MeOH)



-----文献-----

Parveen, M. et al., *Phytochemistry*, 1991, 30, 361, (分離, H-NMR, Mass)  
Cabrera, G.M. et al., *Phytochemistry*, 1997, 45, 1019-1021, (分離, H-NMR, C13-NMR)

§ **1-Isomangostin**

[CAS No.] 19275-44-6

[関連 CAS No.] 110558-92-4

[化合物分類] 単環芳香族 (Xanthenes; 4 × O-置換基)

[構造式]

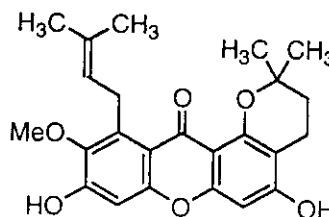
[分子式] C<sub>23</sub>H<sub>20</sub>O<sub>6</sub>

[分子量] 410.466

[基原] *Garcinia mangostana*

[融点] Mp 245-249 °C

UV: [neutral] λ<sub>max</sub> 244 (ε 38000); 254 (ε 33100); 307 (ε 24550); 345 (ε 10700) (EtOH) (Berdy)



-----文献-----

Mahabusarakam, W. et al., *J. Nat. Prod.*, 1987, 50, 474, (分離, H-NMR)

§ **1-Isomangostin; 2',3'-Dihydro, 3'-hydroxy**

[化学名・別名] 1-Isomangostin hydrate

[CAS No.] 26063-95-6

[化合物分類] 単環芳香族 (Xanthenes; 4 × O-置換基)

[構造式]

[分子式] C<sub>23</sub>H<sub>22</sub>O<sub>7</sub>

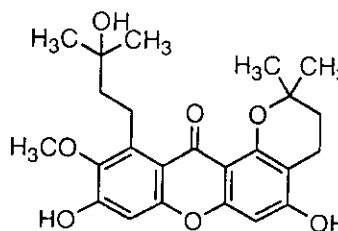
[分子量] 428.481

[基原] *Garcinia mangostana*

[性状] 結晶 (CH<sub>2</sub>Cl<sub>2</sub>)

[融点] Mp 261-263 °C (255-257 °C)

[その他のデータ] Incorrectly named in CA



-----文献-----

§ 2,3',4,4',6-Pentahydroxybenzophenone (旧 CAS 名)

[化学名・別名] (3,4-Dihydroxyphenyl) (2,4,6-trihydroxyphenyl) methanone (CAS 名). Maclurin. Moringerbic acid.

Laguncurin

[CAS No.] 519-34-6

[化合物分類] 単環芳香族 (Benzophenones; 5 × O-置換基)

[構造式]

[分子式] C<sub>15</sub>H<sub>10</sub>O<sub>6</sub>

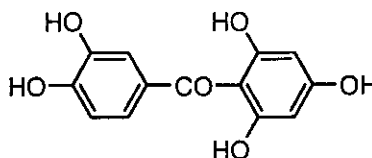
[分子量] 262.218

[基原] *Chlorophora tinctoria* の抽出物, *Garcinia mangostana* の心材. また *Morus alba*, *Laguncularia racemosa*

[性状] 黄色がかったプリズム結晶 (H<sub>2</sub>O)

[融点] Mp 222-222.5 °C

[販売元] Rare Chemicals Library: S40905-7



-----文献-----

Haley, T.J. et al., J. Am. Pharm. Assoc., 1951, 40, 111, (分離)

Locksley, H.D. et al., Tetrahedron, 1967, 23, 2229, (分離)

Holloway, D.M. et al., Phytochemistry, 1975, 14, 2517, (分離)

§ 1,3,5,8-Tetrahydroxy-2,4-diprenylxanthone

[化学名・別名] 1,3,5,8-Tetrahydroxy-2,4-bis(3-methyl-2-butenyl)-9H-xanthen-9-one (CAS 名). Gartanin

[CAS No.] 33390-42-0

[化合物分類] 単環芳香族 (Xanthenes; 4 × O-置換基)

[構造式]

[分子式] C<sub>23</sub>H<sub>24</sub>O<sub>6</sub>

[分子量] 396.439

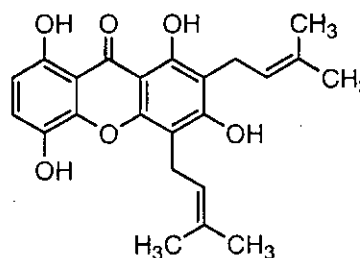
[基原] *Garcinia mangostana* の果実

[性状] 黄色の針状結晶

[融点] Mp 167 °C

UV: [neutral] λ<sub>max</sub> 259 (ε 19950); 284 (ε 24000); 351 (ε 11200)

EtOH) (Berdy)



-----文献-----

Govindachari, T.R. et al., Tetrahedron, 1971, 27, 3919, (分離, 構造決定)

Anand, S.M. et al., Aust. J. Chem., 1974, 27, 1515, (合成法)

Gujral, V. et al., Bull. Chem. Soc. Jpn., 1979, 52, 3679, (合成法)

§ 1,3,6,7-Tetrahydroxy-2,8-diprenylxanthone

[化学名・別名] 1,3,6,7-Tetrahydroxy-2,8-bis(3-methyl-2-butenyl)-9H-xanthen-9-one (CAS 名). γ-Mangostin.

Normangostin

[CAS No.] 31271-07-5

[化合物分類] 単環芳香族 (Xanthenes; 4 × O-置換基)

[構造式]

[分子式] C<sub>23</sub>H<sub>24</sub>O<sub>6</sub>

[分子量] 396.439

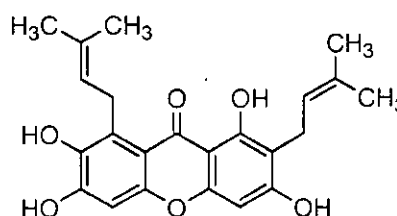
[基原] *Garcinia mangostana*

[性状] 黄色の結晶 (EtOAc/petrol)

[融点] Mp 207 °C

UV: [neutral] λ<sub>max</sub> 247 ; 261 ; 314 ; 364 (MeOH) (Berdy)

] λ<sub>max</sub> 280 ; 350 (EtOH) (Berdy)



[neutral]

-----文献-----

Jefferson, A. et al., Aust. J. Chem., 1970, 23, 2539, (分離, IR, UV, H-NMR, 合成法)

Govindachari, T.R. et al., Indian J. Chem., 1971, 9, 505, (分離, UV, IR, H-NMR)

Govindachari, T.R. et al., Tetrahedron, 1971, 27, 3919, (分離)

Gunasekara, S.P. et al., Phytochemistry, 1973, 12, 232, (分離)

Ravikumar, K. et al., Acta Cryst. C, 1988, 44, 1996, (結晶構造)

§ 1,3,6,7-Tetrahydroxy-2,8-diprenylxanthone; 7-Me ether

[化学名・別名] 1,3,6-Trihydroxy-7-methoxy-2,8-diprenylxanthone. α-Mangostin

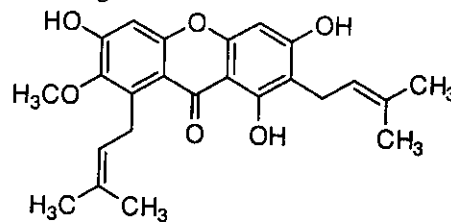
§ 1,3,6,7-Tetrahydroxy-2,8-diprenylxanthone; 7-Me ether

[化学名・別名] 1,3,6-Trihydroxy-7-methoxy-2,8-diprenylxanthone.  $\alpha$ -Mangostin

[CAS No.] 6147-11-1

[化合物分類] 単環芳香族 (Xanthenes; 4 × O-置換基)

[構造式]



[分子式]  $C_{24}H_{26}O_6$

[分子量] 410.466

[基原] *Garcinia mangostana* の色素, *Hydnocarpus octandra*, *Hydnocarpus venenata*

[性状] 黄色の針状結晶 ( $C_6H_6$ , petrol もしくは EtOH 溶液)

[融点] Mp 180-181 °C

UV: [neutral]  $\lambda_{max}$  243 ; 260 ; 314 ; 350 (MeOH) (Berdy) [neutral]  $\lambda_{max}$  243 (34500); 259 (27500); 318 (19000); 351 (7200) (EtOH) (Berdy)

----- 文献 -----

Jefferson, A. et al., Aust. J. Chem., 1970, 23, 2539, (分離, IR, UV, H-NMR, 合成法)

Govindachari, T.R. et al., Tetrahedron, 1971, 27, 3919, (分離)

Gunasekara, S.P. et al., Phytochemistry, 1973, 12, 232, (分離)

Ravikumar, K. et al., Acta Cryst. C, 1988, 44, 1996, (結晶構造)

§ 1,3,6,7-Tetrahydroxy-2,8-diprenylxanthone; 3,7-Di-Me ether

[化学名・別名] 1,6-Dihydroxy-3,7-dimethoxy-2,8-diprenylxanthone.  $\beta$ -Mangostin

[CAS No.] 20931-37-7

[化合物分類] 単環芳香族 (Xanthenes; 4 × O-置換基)

[構造式]

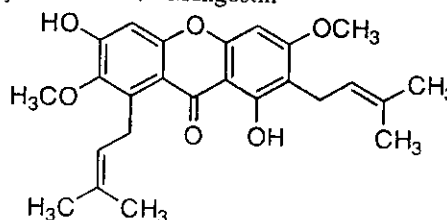
[分子式]  $C_{25}H_{28}O_6$

[分子量] 424.493

[基原] *Garcinia mangostana*

[性状] レモンイエロー色の棒状結晶 (EtOH)

[融点] Mp 175-176 °C



----- 文献 -----

Jefferson, A. et al., Aust. J. Chem., 1970, 23, 2539, (分離, IR, UV, H-NMR, 合成法)

Govindachari, T.R. et al., Indian J. Chem., 1971, 9, 505, (分離, UV, IR, H-NMR)

Govindachari, T.R. et al., Tetrahedron, 1971, 27, 3919, (分離)

Gunasekara, S.P. et al., Phytochemistry, 1973, 12, 232, (分離)

§ 1,3,6,7-Tetrahydroxy-2,8-diprenylxanthone; 3,6,7-Tri-Me ether

[化学名・別名] 1-Hydroxy-3,6,7-trimethoxy-2,8-diprenylxanthone

[CAS No.] 15404-76-9

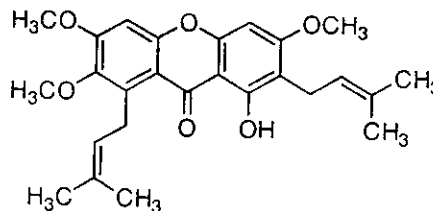
[化合物分類] 単環芳香族 (Xanthenes; 4 × O-置換基)

[構造式]

[基原] *Garcinia mangostana*

[性状] 結晶 (EtOH)

[融点] Mp 120-121 °C



----- 文献 -----

Jefferson, A. et al., Aust. J. Chem., 1970, 23, 2539, (分離, IR, UV, H-NMR, 合成法)

Govindachari, T.R. et al., Indian J. Chem., 1971, 9, 505, (分離, UV, IR, H-NMR)

Govindachari, T.R. et al., Tetrahedron, 1971, 27, 3919, (分離)

Gunasekara, S.P. et al., Phytochemistry, 1973, 12, 232, (分離)

Lee, H.-H., J.C.S. Perkin 1, 1981, 3205, (合成法)

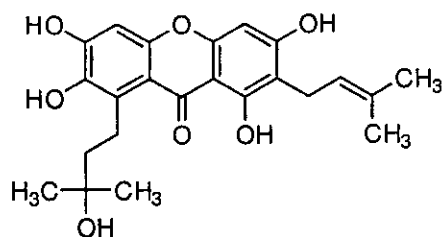
§ 1,3,6,7-Tetrahydroxy-2,8-diprenylxanthone; 3''-Hydroxy, 2'',3''-dihydro

[化学名・別名] Garcinone C

[CAS No.] 76996-27-5

[化合物分類] 単環芳香族 (Xanthenes; 4 × O-置換基)

[構造式]



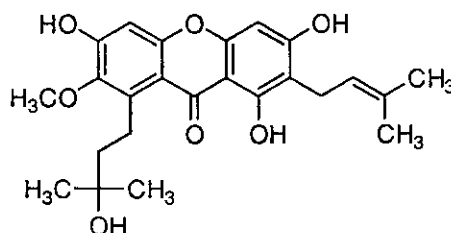
[分子式]  $C_{23}H_{26}O_7$   
 [分子量] 414.454  
 [基原] *Garcinia mangostana*  
 [性状] 黄色の塊 (MeOH)  
 [融点] Mp 216-218 °C

-----文献-----

Sen, A.K. et al., *Phytochemistry*, 1982, 21, 1747, (Garcinone C)

§ 1,3,6,7-Tetrahydroxy-2,8-diprenylxanthone; 3''-Hydroxy, 2'',3''-dihydro, O<sup>7</sup>-Me

[化学名・別名] Garcinone D  
 [CAS No.] 107390-08-9  
 [化合物分類] 単環芳香族 (Xanthenes; 4 × O-置換基)  
 [構造式]  
 [分子式]  $C_{24}H_{28}O_7$   
 [分子量] 428.481  
 [基原] *Garcinia mangostana*  
 [性状] 淡黄色の針状結晶 (MeOH)  
 [融点] Mp 202-204 °C

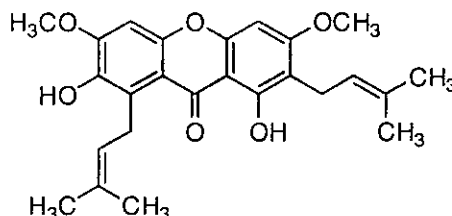


-----文献-----

Sen, A.K. et al., *Indian J. Chem., Sect. B*, 1986, 25, 1157, (Garcinone D)

§ 1,3,6,7-Tetrahydroxy-2,8-diprenylxanthone; 3,6-Di-Me ether

[化学名・別名] 1,7-Dihydroxy-3,6-dimethoxy-2,8-diprenylxanthone  
 [CAS No.] 132031-39-1  
 [化合物分類] 単環芳香族 (Xanthenes; 4 × O-置換基)  
 [構造式]  
 [分子式]  $C_{25}H_{28}O_6$   
 [分子量] 424.493  
 [基原] *Garcinia mangostana*  
 [性状] 青白い黄色の針状結晶 (MeOH)  
 [融点] Mp 192-194 °C



-----文献-----

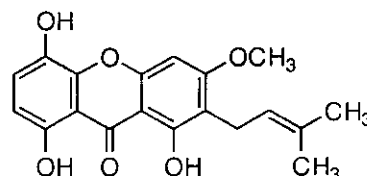
Jefferson, A. et al., *Aust. J. Chem.*, 1970, 23, 2539, (分離, IR, UV, H-NMR, 合成法)

Govindachari, T.R. et al., *Indian J. Chem.*, 1971, 9, 505, (分離, UV, IR, H-NMR)

Govindachari, T.R. et al., *Tetrahedron*, 1971, 27, 3919, (分離)

§ 1,3,5,8-Tetrahydroxy-2-prenylxanthone; 3-Me ether

[化学名・別名] 1,5,8-Trihydroxy-3-methyl-2-prenylxanthone  
 [CAS No.] 110187-11-6  
 [化合物分類] 単環芳香族 (Xanthenes; 4 × O-置換基)  
 [構造式]  
 [分子式]  $C_{19}H_{18}O_6$   
 [分子量] 342.348  
 [基原] *Garcinia mangostana*  
 [性状] 結晶  
 [融点] Mp 193-195 °C



-----文献-----

Perveen, M. et al., *Phytochemistry*, 1988, 27, 3695

Hano, Y. et al., *Heterocycles*, 1990, 31, 1345, (Morusin B)

Bennett, G.J. et al., *J.C.S. Perkin 1*, 1990, 2671

§ 1,3,5,8-Tetrahydroxy-2-prenylxanthone; 3,5-Di-Me ether

[化学名・別名] 1,8-Dihydroxy-3,5-dimethoxy-2-prenylxanthone  
 [CAS No.] 132031-40-4

[化合物分類] 単環芳香族 (Xanthenes; 4 × O-置換基)

[構造式]

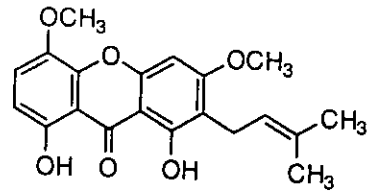
[分子式]  $C_{20}H_{20}O_6$

[分子量] 356.374

[基原] *Garcinia mangostana*

[性状] 黄色の針状結晶 (MeOH)

[融点] Mp 178-181 °C



----- 文献 -----

Perveen, M. et al., *Phytochemistry*, 1988, 27, 3695

Hano, Y. et al., *Heterocycles*, 1990, 31, 1345, (Morusignin B)

Bennett, G.J. et al., *J.C.S. Perkin 1*, 1990, 2671

§ **1,3,6,7-Tetrahydroxy-2,5,8-triprenylxanthone**

[化学名・別名] Garcinone E

[CAS No.] 112649-21-5

[化合物分類] 単環芳香族 (Xanthenes; 4 × O-置換基)

[構造式]

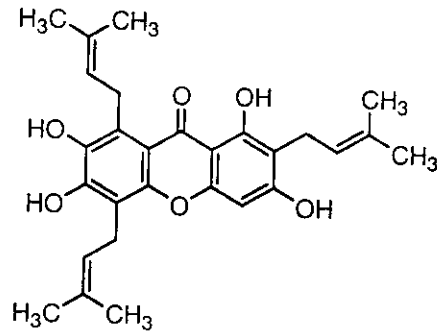
[分子式]  $C_{38}H_{32}O_6$

[分子量] 464.557

[基原] *Garcinia mangostana*

[性状] 黄色の結晶 (EtOAc/hexane)

[融点] Mp 152.5-155.5 °C



----- 文献 -----

Dutta, P.K. et al., *Indian J. Chem., Sect. B*, 1987, 26, 281

Sakai, S. et al., *Chem. Pharm. Bull.*, 1993, 41, 958, (分離, H-NMR, C13-NMR)

Likhitwitayawuid, K. et al., *Phytochemistry*, 1997, 45, 1299, (7-O-Methylgarcinone E)

§ **1,2,4,5-Tetrahydroxyxanthone; 1-Me ether**

[化学名・別名] 2,4,5-Trihydroxy-1-methoxyxanthone. BR-Xanthone B

[CAS No.] 115713-07-0

[化合物分類] 単環芳香族 (Xanthenes; 4 × O-置換基)

[構造式]

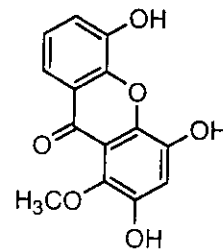
[分子式]  $C_{17}H_{16}O_6$

[分子量] 274.229

[基原] *Garcinia mangostana* の乾燥果実の殻

[性状] 緑がかった黄色の結晶

[融点] Mp 308-310 °C



----- 文献 -----

Balasubramanian, K. et al., *Phytochemistry*, 1988, 27, 1552

§ **Thwaitesixanthone; 5-Hydroxy, 1,2,11,12-tetrahydro**

[化学名・別名] BR-Xanthone A

[CAS No.] 112649-48-6

[化合物分類] 単環芳香族 (Xanthenes; 4 × O-置換基)

[構造式]

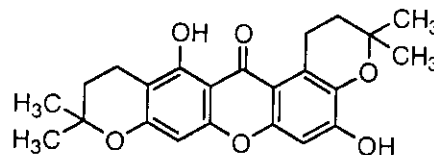
[分子式]  $C_{23}H_{22}O_6$

[分子量] 396.439

[基原] *Garcinia mangostana* の乾燥果実の殻

[性状] 青白い黄色の針状結晶 ( $C_6H_6$ /petrol)

[融点] Mp 181-182 °C



----- 文献 -----

Balasubramanian, K. et al., *Phytochemistry*, 1988, 27, 1552, (BR-Xanthone)

§ **Thwaitesixanthone; 5-Methoxy, 1,2-dihydro**

[化学名・別名] Garcimangosone B

[化合物分類] 単環芳香族 (Xanthenes; 4 × O-置換基)

[構造式]

[分子式]  $C_{24}H_{24}O_6$

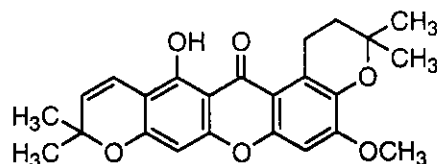
[分子量] 408.45

[基原] *Garcinia mangostana* の乾燥果実の殻

[性状] 黄色の粉末

[融点] Mp 136-138 °C

UV: [neutral]  $\lambda_{max}$  288 (log  $\epsilon$  4.25); 330 (log  $\epsilon$  3.92) (MeOH)



-----文献-----

Huang, Y.L. et al., J. Nat. Prod., 2001, 64, 903-906, (Garcimangosone B)

### § 1,3,5-Trihydroxy-2,4-diprenylxanthone

[化学名・別名] 1,3,5-Trihydroxy-2,4-bis(3-methyl-2-butenyl)-9H-xanthen-9-one. 8-Desoxygartanin

[CAS No.] 33390-41-9

[化合物分類] 単環芳香族 (Xanthenes; 4 × O-置換基)

[構造式]

[分子式]  $C_{23}H_{24}O_5$

[分子量] 380.44

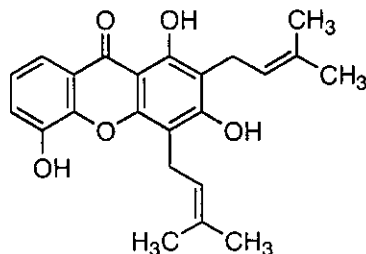
[基原] 次の植物から分離: *Garcinia mangostana*, *Clusia* spp.

[性状] 黄色の針状結晶 ( $C_6H_6$ /hexane)

[融点] Mp 165.5 °C

[溶解性] BERDY SOL: 水に可溶; アセトン, ヘキサンに難溶

UV: [neutral]  $\lambda_{max}$  264 (MeOH) (Berdy) [neutral]  $\lambda_{max}$  264 (E1%/1cm 495) (H<sub>2</sub>O) (Berdy) [acid]  $\lambda_{max}$  264 (HCl) (Berdy)



-----文献-----

Bennett, G.J. et al., J.C.S. Perkin 1, 1990, 2671, (分離, 誘導体)

Hano, Y. et al., Planta Med., 1990, 56, 399, (誘導体)

Ito, C. et al., Chem. Pharm. Bull., 1996, 44, 441, (誘導体, UV, IR, H-NMR, C13-NMR, Mass)

### § 1,3,5-Trihydroxy-2,4-diprenylxanthone; 3,5-Di-Me ether

[化学名・別名] 1-Hydroxy-3,5-dimethoxy-2,4-diprenylxanthone. 3,5-Di-O-methyl-8-deoxygartanin

[CAS No.] 35323-84-3

[化合物分類] 単環芳香族 (Xanthenes; 4 × O-置換基)

[構造式]

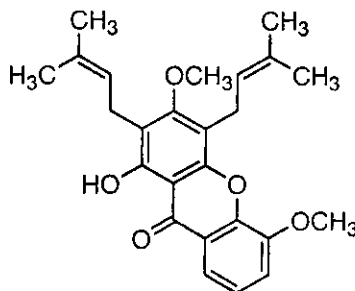
[分子式]  $C_{25}H_{26}O_5$

[分子量] 408.493

[基原] *Garcinia mangostana*

[性状] 黄色の針状結晶 (MeOH)

[融点] Mp 117-118 °C (106-108 °C)



-----文献-----

Govindachari, T.R. et al., Tetrahedron, 1971, 27, 3919

Anand, S.M. et al., Aust. J. Chem., 1974, 27, 1515, (合成法)

Bennett, G.J. et al., J.C.S. Perkin 1, 1990, 2671, (分離, 誘導体)

Hano, Y. et al., Planta Med., 1990, 56, 399, (誘導体)

Ito, C. et al., Chem. Pharm. Bull., 1996, 44, 441, (誘導体, UV, IR, H-NMR, C13-NMR, Mass)

### § 1,3,7-Trihydroxy-2,8-diprenylxanthone

[化学名・別名] 1,3,7-Trihydroxy-2,8-bis(3-methyl-2-butenyl)-9H-xanthen-9-one (CAS 名). 6-Deoxy- $\gamma$ -mangostin

[CAS No.] 105037-94-3

[化合物分類] 単環芳香族 (Xanthenes; 3 × O-置換基)

[構造式]

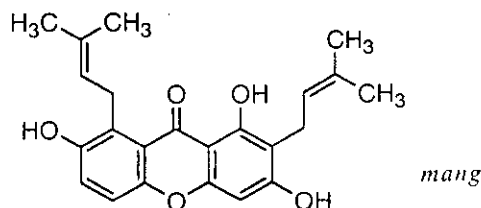
[分子式]  $C_{23}H_{24}O_5$

[分子量] 380.44

[基原] 次の植物から分離: *Calophyllum thwaitesii*, *Garcinia ostana*

[性状] 結晶

[融点] Mp 171-174 °C



mang

[融点] Mp 171-174 °C

-----文献-----

- Kumar, V. et al., *Phytochemistry*, 1982, 21, 807, (Calocalabaxanthone)  
Dharmaratne, H.R.W. et al., *Phytochemistry*, 1986, 25, 1957, (6-Deoxymangostin)  
Mahabusarakam, W. et al., *J. Nat. Prod.*, 1987, 50, 474, (分離, H-NMR)  
Iinuma, M. et al., *Phytochemistry*, 1997, 46, 1423-1429, (Apetalinone A)

§ 1,3,6-Trihydroxy-2-(3-methyl-2-butenyl)-9H-xanthen-9-one; 3-Me ether

[化学名・別名] 1,6-Dihydroxy-3-methoxy-2-(3-methyl-2-butenyl) xanthone

[CAS No.] 119227-98-4

[化合物分類] 単環芳香族 (Xanthenes; 3 × O-置換基)

[構造式]

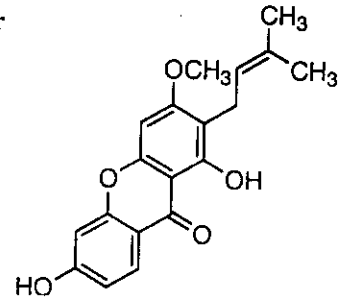
[分子式] C<sub>18</sub>H<sub>18</sub>O<sub>5</sub>

[分子量] 326.348

[基原] *Garcinia mangostana*

[性状] 結晶

[融点] Mp 240 °C



-----文献-----

- Parveen, M. et al., *Phytochemistry*, 1988, 27, 3694

§ 1,3,5-Trihydroxy-2-prenylxanthone; 3-Me ether

[化学名・別名] 1,5-Dihydroxy-3-methoxy-2-prenylxanthone

[CAS No.] 77741-56-1

[化合物分類] 単環芳香族 (Xanthenes; 3 × O-置換基)

[構造式]

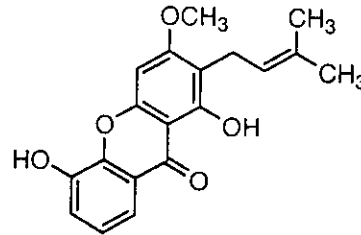
[分子式] C<sub>19</sub>H<sub>18</sub>O<sub>5</sub>

[分子量] 326.348

[基原] *Garcinia mangostana* の果実の殻

[性状] 黄色の薄片 (MeOH)

[融点] Mp 242-244 °C



-----文献-----

- Gunasekera, S.P. et al., *J.C.S. Perkin 1*, 1977, 1505, (分離)  
Sen, A.K. et al., *Phytochemistry*, 1981, 20, 183, (誘導體)  
Bennett, G.J. et al., *J.C.S. Perkin 1*, 1990, 2671, (分離, 誘導體)  
Goh, S.H. et al., *Phytochemistry*, 1991, 30, 366, (分離)  
Peres, V. et al., *Phytochemistry*, 1997, 44, 191, (レビュー, 生育)  
Cortez, D.A.G. et al., *Phytochemistry*, 1998, 47, 1367-1374, (分離)

§ 1,3,5-Trihydroxy-2-prenylxanthone; 3,5-Di-Me ether

[化学名・別名] 1-Hydroxy-3,5-dimethoxy-2-prenylxanthone

[CAS No.] 35323-89-8

[化合物分類] 単環芳香族 (Xanthenes; 3 × O-置換基)

[構造式]

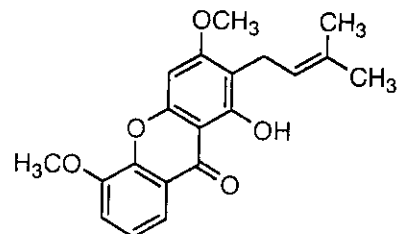
[分子式] C<sub>20</sub>H<sub>20</sub>O<sub>5</sub>

[分子量] 340.375

[基原] *Garcinia mangostana*

[性状] 黄色の針状結晶 (MeOH)

[融点] Mp 168-169 °C

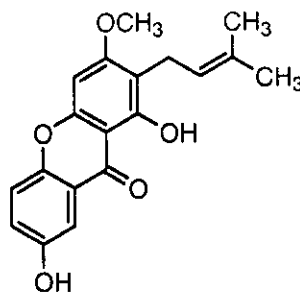


-----文献-----

- Gunasekera, S.P. et al., *J.C.S. Perkin 1*, 1977, 1505, (分離)  
Sen, A.K. et al., *Phytochemistry*, 1981, 20, 183, (誘導體)  
Bennett, G.J. et al., *J.C.S. Perkin 1*, 1990, 2671, (分離, 誘導體)  
Goh, S.H. et al., *Phytochemistry*, 1991, 30, 366, (分離)  
Peres, V. et al., *Phytochemistry*, 1997, 44, 191, (レビュー, 生育)  
Cortez, D.A.G. et al., *Phytochemistry*, 1998, 47, 1367-1374, (分離)

§ 1,3,7-Trihydroxy-2-prenylxanthone; 3-Me ether

[化学名・別名] 1,7-Dihydroxy-3-methoxy-2-prenylxanthone  
 [CAS No.] 77741-58-3  
 [化合物分類] 単環芳香族 (Xanthenes; 3 × O-置換基)  
 [構造式]  
 [分子式] C<sub>19</sub>H<sub>18</sub>O<sub>5</sub>  
 [分子量] 326.348  
 [基原] 次の植物から分離: *Garcinia mangostana* の果皮  
 [性状] 黄色の結晶 (C<sub>6</sub>H<sub>6</sub>/MeOH)  
 [融点] Mp 220-222 °C



-----文献-----

Jackson, B. et al., J.C.S. (C), 1967, 2500, (分離)  
 Carpenter, I. et al., J.C.S. (C), 1969, 486, (分離)  
 Anand, S.M. et al., Indian J. Chem., 1973, 11, 1233, (分離)  
 Owens, P.J. et al., J.C.S. Perkin 1, 1974, 1018, (分離)  
 Sen, A.K. et al., Phytochemistry, 1981, 20, 183, (3-Me ether)  
 Harrison, L.J. et al., Phytochemistry, 1993, 33, 727, (分離, H-NMR, C13-NMR)  
 Peres, V. et al., Phytochemistry, 1997, 44, 191, (レビュー, 生育)  
 Cortez, D.A.G. et al., Phytochemistry, 1998, 47, 1367-1374, (分離, UV, H-NMR, C13-NMR, Mass)

\*\*\*\*\*マンナノキ (Manna ash) \*\*\*\*\*

§ § モクセイ科マンナノキ (*Fraxinus ornus* L.) の樹皮または樹液。

§ 6,7-Dihydroxy-2H-1-benzopyran-2-one; 6-O-β-D-Glucopyranoside

[化学名・別名] Aesculin. Esculin. Crataegin. Bicolorin. Polychrome. Vitamin C. Esculoside

[CAS No.] 531-75-9

[化合物分類] ベンゾピラノイド (6,7-Dioxygenated coumarins), 薬物: 抗炎症薬 (Antiinflammatory agents)

[構造式]

[分子式] C<sub>15</sub>H<sub>16</sub>O<sub>9</sub>

[分子量] 340.286

[基原] *Fraxinus ornus* の樹皮, *Solanum pinnatisectum* の花, *Fraxinus japonica*, その他

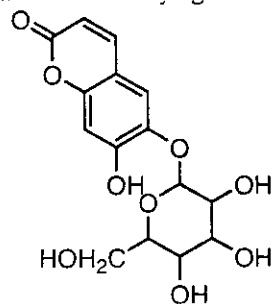
[用途] 抗炎症剤

[融点] Mp 205 °C

[比旋光度]: [α]<sub>D</sub> -77.5 (c. 3 in aq. dioxan)

[Log P 計算値] Log P -2.07 (計算値)

[販売元] Aldrich:E280-9; Fluka:2350; Sigma:E8250



の他

-----文献-----

Karrer, W. et al., Konstitution und Vorkommen der Organischen Pflanzenstoffe, 2nd edn., Birkhaumluser Verlag, Basel, 1972, nos. 1325-1327, (生育)  
 Forgacs, P. et al., Tet. Lett., 1978, 4783, (Diospyroside)  
 Ishikura, N. et al., Bot. Mag., 1982, 95, 303-308, (6-(3'-Glucosylcaffeoyl) esculetin)  
 Nonaka, G. et al., Chem. Pharm. Bull., 1989, 37, 2030, (Aesculin 6'-gallate)

§ 6,7-Dihydroxy-2H-1-benzopyran-2-one; 7-O-β-D-Glucopyranoside

[化学名・別名] Cichoriin. 6-Hydroxyskimmin. Cichorioside

[CAS No.] 531-58-8

[化合物分類] ベンゾピラノイド (6,7-Dioxygenated coumarins)

[構造式]

[分子式] C<sub>15</sub>H<sub>16</sub>O<sub>9</sub>

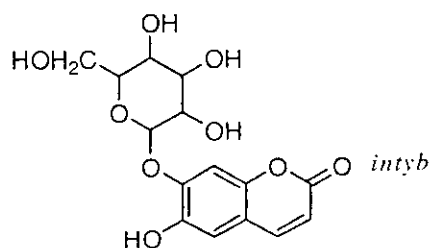
[分子量] 340.286

[基原] *Fraxinus ornus* の花, *Solanum pinnatisectum* の花, また *Cichorium*

*us*

[融点] Mp 213-214 °C

[比旋光度]: [α]<sub>D</sub><sup>20</sup> -104 (dioxan)



intyb

-----文献-----



Karrer, W. et al., Konstitution und Vorkommen der Organischen Pflanzenstoffe, 2nd edn., Birkhauser Verlag, Basel, 1972, nos. 1325-1327, (生育)  
Murray, R.D.H. et al., The Natural Coumarins, J. Wiley, 1982, (生育, レビュー)

§ 2-(3,4-Dihydroxyphenyl) ethanol; 1-O- $\beta$ -D-Glucopyranosyl-(1  $\rightarrow$  6)-[3,4-dihydroxy-E-cinnamoyl-( $\rightarrow$  3)]- $\beta$ -D-glucopyranoside

[化学名・別名] Isolugrandoside

[CAS No.] 221660-27-1

[化合物分類] 炭水化物 (Disaccharides),

単環芳香族 (Simple phenylpropanoids)

[構造式]

[分子式]  $C_{29}H_{36}O_{16}$

[分子量] 640.594

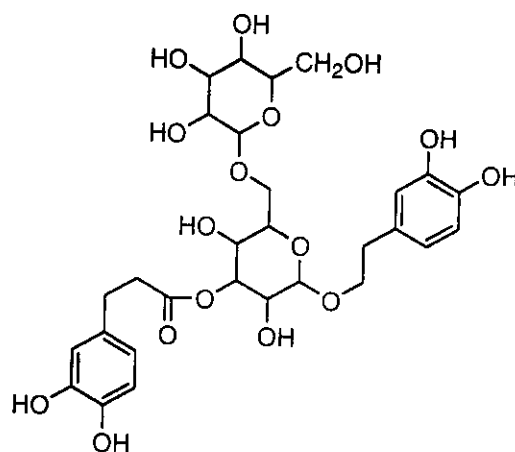
[基原] *Fraxinus ornus* の樹皮

[性状] 無定形の粉末

[比旋光度]:  $[\alpha]_D^{25} -16.6$  (c, 0.06 in MeOH)

UV: [neutral]  $\lambda_{max}$  222 (log  $\epsilon$  4.44); 255 (sh) (log  $\epsilon$  4);

292 (log  $\epsilon$  4.01); 328 (log  $\epsilon$  4.05) (MeOH)



----- 文献 -----

Jimenez, C. et al., Nat. Prod. Rep., 1994, 591, (レビュー, 配糖体)

Kikuchi, M. et al., CA, 1987, 107, 28255, (Isooleuropein)

Kikuchi, M. et al., Yakugaku Zasshi, 1987, 107, 245, (Isoligustroside)

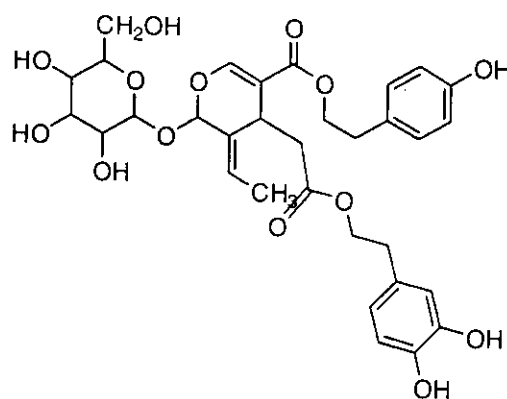
Tanahashi, T. et al., Phytochemistry, 1993, 32, 133, (Isoligustrosidic acid)

§ Isoligustrosidic acid; [(3,4-Dihydroxyphenyl) ethyl] ester

[化学名・別名] Hydroxyframoside A

[化合物分類] テルペノイド (Secoiridoid monoterpenoids)

[構造式]



[分子式]  $C_{33}H_{38}O_{14}$

[分子量] 646.644

[基原] *Fraxinus ornus*

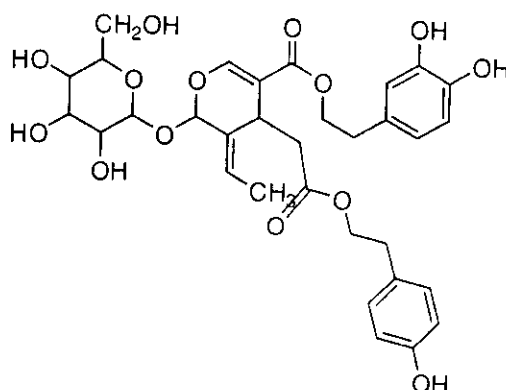
----- 文献 -----

Iossifova, T. et al., Phytochemistry, 1998, 49, 1329-1332, (Hydroxyframosides)

§ Isoligustrosidic acid; 3''-Hydroxy, [(4-hydroxyphenyl) ethyl] ester

[化合物分類] テルペノイド (Secoiridoid monoterpenoids)

[構造式]



[分子式]  $C_{33}H_{38}O_{14}$

[分子量] 646.644

[基原] *Fraxinus ornus*

Kikuchi, M. et al., CA, 1987, 107, 28255. (Isooleuropein)  
 Kikuchi, M. et al., Yakugaku Zasshi, 1987, 107, 245, (Isoligustroside)  
 Tanahashi, T. et al., Phytochemistry, 1993, 32, 133, (Isoligustrosidic acid)  
 He, Z.D. et al., Phytochemistry, 1994, 35, 177, (分離, H-NMR, C13-NMR)  
 Iossifova, T. et al., Phytochemistry, 1998, 49, 1329-1332, (Hydroxyframosides)

### § Ornosol

[化学名・別名] 4-Hydroxy-3-[4-(2-hydroxyethyl) phenoxy] benzeneethanol (CAS 名). 2-Hydroxy-4',5-bis(2-hydroxyethyl) diphenyl ether

[CAS No.] 150044-51-2

[化合物分類] 単環芳香族 (Diphenyl ethers), 単環芳香族 (Simple phenols)

[構造式]

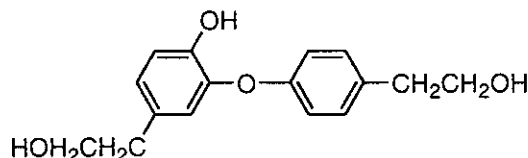
[分子式]  $C_{16}H_{18}O_4$

[分子量] 274.316

[基原] *Fraxinus ornus* の樹皮

[性状] 結晶 (CHCl<sub>3</sub>)

[融点] Mp 114-116 °C



### -----文献-----

Tanahashi, T. et al., Phytochemistry, 1993, 33, 397, (H-NMR, C13-NMR)  
 Iossifova, T. et al., Phytochemistry, 1993, 34, 1373, (分離, H-NMR)  
 Kostova, I. et al., Planta Med. (Suppl.), 1993, 59, A705, (分離)

### § Stachyose

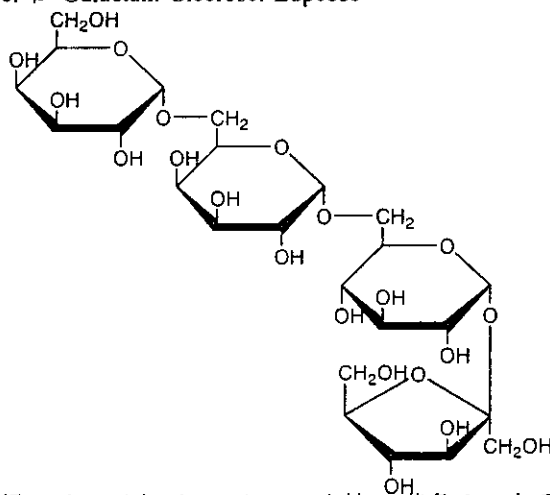
[化学名・別名]  $\beta$ -D-Fructofuranosyl *O*- $\alpha$ -D-galactopyranosyl-(1  $\rightarrow$  6)-*O*- $\alpha$ -D-galactopyranosyl-(1  $\rightarrow$  6)- $\alpha$ -D-glucopyranoside (CAS 名) (旧 CAS 名). Manneotetrose.  $\beta$ -Galactan. Cicerose. Lupeose

[CAS No.] 470-55-3

[関連 CAS No.] 10094-58-3

[化合物分類] 炭水化物 (Oligosaccharides)

[構造式]



[分子式]  $C_{21}H_{42}O_{21}$

[分子量] 666.583

[基原] 多くの植物から分離, 例えば *Stachys* spp. の根, ホワイトジャスミンの小枝, 黄色のハウチワマメ (*Lupinus luteus*) の種子, ダイズ (*Soja max*), レンズマメ, マンナノキ (*Fraxinus ornus*)

[性状] 結晶・四もしくは五水和物

[融点] Mp 101-105 °C (sealed tube). Mp 167-170 °C (無水物)

[比旋光度]:  $[\alpha]_D^{25} +131.3$  (c, 4.5 in H<sub>2</sub>O)

[販売元] Fluka:85638

### -----文献-----

Wolfrom, M.L. et al., Methods Carbohydr. Chem., 1962, 1, 368, (分離)  
 Pazur, J.H., The Carbohydrates, Academic Press, 2nd Ed., 1970, 69, (レビュー)  
 Karrer, W. et al., Konstitution und Vorkommen der Organischen Pflanzenstoffe, 2nd edn., Birkhauser Verlag, Basel, 1972, no. 672, (生育, 成書)

### § Uhdoside A

[化学名・別名] Ornoside. Insularoside

[CAS No.] 150044-49-8

[化合物分類] 単環芳香族 (Diphenyl ethers).

テルペノイド (Secoiridoid monoterpenoids)

[構造式]

[分子式]  $C_{27}H_{36}O_{11}$

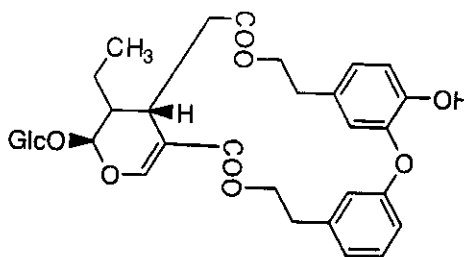
[分子量] 628.629

[基原] *Fraxinus uhdei*, *Fraxinus insularis*, *Fraxinus ornus*

[性状] 無定型の粉末

[比旋光度]:  $[\alpha]_D^{20} -72$  (c, 1 in MeOH)

[その他のデータ] Uhdoside A, Ornoside and Insularoside not compared



----- 文献 -----

Shen, Y.-C. et al., J. Nat. Prod., 1993, 56, 1905, (分離, H-NMR, C13-NMR)

Tanahashi, T. et al., Phytochemistry, 1993, 33, 397, (分離, H-NMR, C13-NMR)

Iossifova, T. et al., Phytochemistry, 1993, 34, 1373, (分離, H-NMR, C13-NMR)

Pa, L. et al., Zhongcaoyao, 1997, 28, 643-645; CA, 128, 228475f, (配糖体)

Tanahashi, T. et al., Phytochemistry, 1998, 49, 1333-1337, (配糖体)

§ § モクセイ科 (*Fraxinus rotundifolia* Miller) の樹皮または樹液。

本調査研究では、成分に関する文献はなかった。

\*\*\*\*\*ミカン (Mikan) \*\*\*\*\*

§ § ミカン科ウンシュウミカン (*Citrus unshiu* Markovich)

§ **Bufotenine; O-β-D-Glucopyranoside**

[化学名・別名] Bufotenine O-glucoside

[CAS No.] 64656-15-1

[化合物分類] アルカロイド化合物 (Simple tryptamine alkaloids)

[構造式]

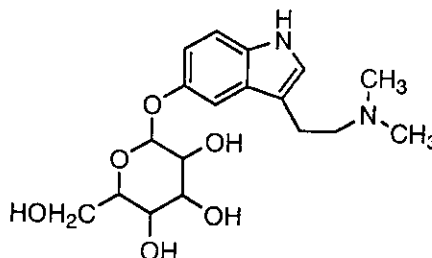
[分子式]  $C_{18}H_{26}N_2O_6$

[分子量] 366.413

[基原] 次の植物から得られるアルカロイド: *Citrus unshiu* の葉

[比旋光度]:  $[\alpha]_D^{20} -58$  (c, 0.5 in H<sub>2</sub>O)

UV: [neutral]  $\lambda_{max}$  224; 274 (溶媒の報告はない)



----- 文献 -----

Wieland, T. et al., Annalen, 1953, 581, 10, (分離, UV)

Stromberg, V.L., J.A.C.S., 1954, 76, 1707, (分離, UV)

Fish, M.S. et al., J.A.C.S., 1955, 77, 5892, (酸化物)

Erspamer, V. et al., Biochem. Pharmacol., 1959, 2, 270, (Bufoviridine)

Pachter, I.J. et al., J.O.C., 1959, 24, 1285, (分離, 誘導體)

Roseghini, M. et al., Comp. Biochem. Physiol., C: Comp. Pharmacol., 1976, 54, 31; 1989, 94, 455, (Bufoviridine)

Barlow, R.B. et al., Br. J. Pharmacol., 1980, 69, 597, (薬理)

Nishida, R. et al., Agric. Biol. Chem., 1990, 54, 1853, (配糖体)

Martindale. The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 1345

§ **Casegravol; 4'-O-(3-Methylbutanoyl)**

[化学名・別名] Casegravol isovalerate

[化合物分類] ベンゾピラノイド (7-Oxygenated coumarins, 8-substituted)

[構造式]

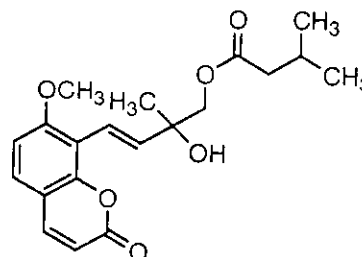
[分子式]  $C_{20}H_{24}O_6$

[分子量] 360.406

[基原] *Citrus unshiu*

[性状] 無定型の塊

[比旋光度]:  $[\alpha]_D^{20} 0$  (CHCl<sub>3</sub>)



Ito, C. et al., Chem. Pharm. Bull., 1989, 37, 2217. (Casegravol isovalerate)

§ Citrusin I

[CAS No.] 139626-28-1

[化合物分類] アミノ酸とペプチド (Cyclic oligo- and polypeptides)

[構造式]

[分子式]  $C_{34}H_{53}N_7O_9$

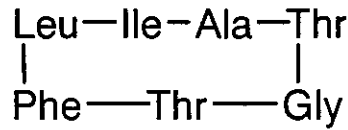
[分子量] 703.834

[基原] 次の植物から分離: *Citrus unshiu* の未熟果実

[性状] 結晶

[融点] Mp 300 °C

[比旋光度]:  $[\alpha]_D^{22} -25.92$  (c, 0.03 in MeOH)



-----文献-----

Matsubara, Y. et al., Agric. Biol. Chem., 1991, 55, 2923, (分離, H-NMR, C13-NMR, Mass)

§ 3,6-Diglucopyranosyl-4',5,7-trihydroxyflavone

[化学名・別名] 3,6-Di-β-D-glucopyranosyl-5,7-dihydroxy-2-(4-hydroxyphenyl)-4H-1-benzopyran-4-one.

3,6-Diglucopyranosylapigenin. 3,6-Diglucoylapigenin

[CAS No.] 90456-55-6

[化合物分類] フラボノイド (Flavones; 3 × O-置換基)

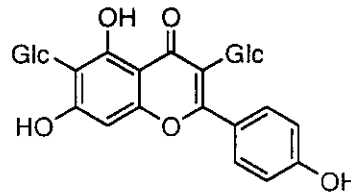
[構造式]

[分子式]  $C_{27}H_{30}O_{15}$

[分子量] 594.25

[基原] 次の植物から分離: *Citrus unshiu*

[性状] 物理化学的性質に関する報告はない



-----文献-----

Matsubara, Y. et al., Agric. Biol. Chem., 1985, 49, 909, (分離)

Kumamoto, H. et al., Agric. Biol. Chem., 1985, 49, 2613, (誘導体)

§ 3,5-Dihydroxy-6,7-megastigmadien-9-one; 5-O-β-D-Glucopyranoside

[化学名・別名] Citroside A

[CAS No.] 120330-44-1

[化合物分類] テルペノイド (Megastigmane norterpeneoids),

脂肪族化合物 (Acetylenic alcohols)

[構造式]

[分子式]  $C_{19}H_{30}O_8$

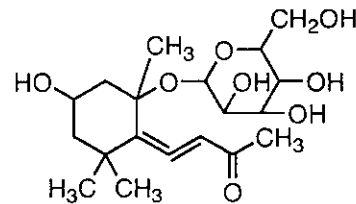
[分子量] 386.441

[基原] *Citrus unshiu*

[性状] 無定型の粉末 + 1/2H<sub>2</sub>O

[比旋光度]:  $[\alpha]_D^{23} -95.7$  (c, 0.4 in MeOH)

UV: [neutral]  $\lambda_{max}$  230 (log ε 4.12) (MeOH)



-----文献-----

Umehara, K. et al., Chem. Pharm. Bull., 1988, 36, 5004, (Citrosides)

§ 3,5-Dihydroxy-6,7-megastigmadien-9-one; (S)<sub>300</sub> Diastereomer, 5-O-β-D-glucopyranoside

[化学名・別名] Citroside B

[CAS No.] 120278-09-3

[化合物分類] テルペノイド (Megastigmane norterpeneoids),

脂肪族化合物 (Allenenes)

[構造式]

[分子式]  $C_{19}H_{30}O_8$

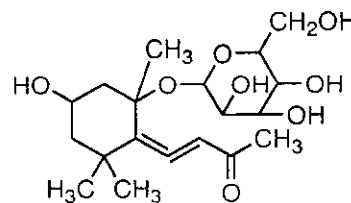
[分子量] 386.441

[基原] *Citrus unshiu*

[性状] 無定型の粉末 + 1/2H<sub>2</sub>O

[比旋光度]:  $[\alpha]_D^{21} -48.2$  (c, 0.3 in MeOH)

UV: [neutral]  $\lambda_{max}$  230 (log ε 4.17) (MeOH)



-----文献-----