

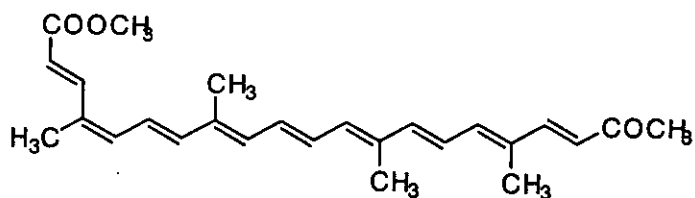
[分子式] $C_{26}H_{32}O_3$

[分子量] 392.537

[基原] *Bixa orellana*

UV: [neutral] λ_{max} 430 ; 455 ; 486

(2-methoxy-2-methylpropane)



文献

Mercadante, A.Z. et al., *Phytochemistry*, 1997, 46, 1379-1383, (分離, H-NMR, C13-NMR)

§ 6'-Oxo-6,6'-diapo-6-carotenoic acid; (9Z)-form, Me ester

[CAS No.] 201996-46-5

[化合物分類] テルペノイド (Apocarotenoids)

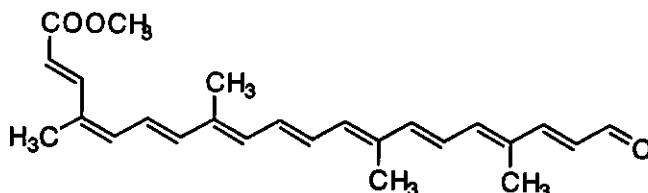
[構造式]

[分子式] $C_{25}H_{30}O_3$

[分子量] 378.51

[基原] *Bixa orellana*

UV: [neutral] λ_{max} 434 ; 459 ; 490 (2-methoxy-2-methylpropane)



文献

Mercadante, A.Z. et al., *Phytochemistry*, 1997, 46, 1379-1383, (分離, H-NMR, C13-NMR)

§ 8'-Oxo-6,8'-diapo-6-carotenoic acid; (9Z)-form, Me ester

[CAS No.] 101034-51-9

[化合物分類] テルペノイド (Apocarotenoids)

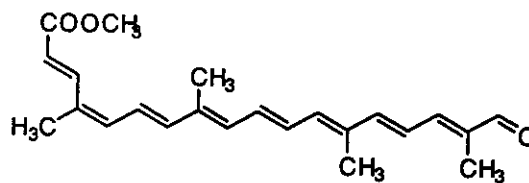
[構造式]

[分子式] $C_{23}H_{28}O_3$

[分子量] 352.472

[基原] *Bixa orellana*

UV: [neutral] λ_{max} 337 ; 415 ; 441 ; 470 (2-methoxy-2-methylpropane)



文献

Mercadante, A.Z. et al., *Phytochemistry*, 1997, 46, 1379-1383, (分離, H-NMR, C13-NMR)

§ 10'-Oxo-6,10'-diapo-6-carotenoic acid; (9Z)-form, Me ester

[CAS No.] 201996-43-2

[化合物分類] テルペノイド (Apocarotenoids)

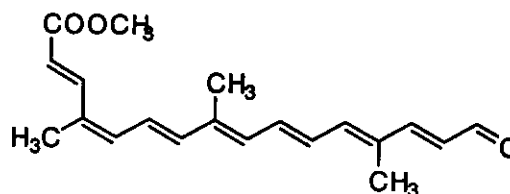
[構造式]

[分子式] $C_{20}H_{24}O_3$

[分子量] 312.408

[基原] *Bixa orellana*

UV: [neutral] λ_{max} 398 ; 420 ; 445 (2-methoxy-2-methylpropane)



文献

Mercadante, A.Z. et al., *Phytochemistry*, 1997, 46, 1379-1383, (分離, H-NMR, C13-NMR)

§ 3',4',5,7,8-Pentahydroxyflavone; 8-O-Sulfate

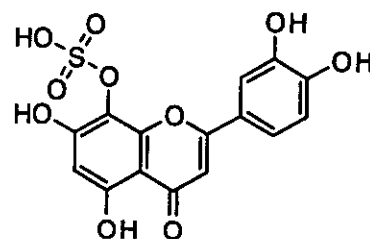
[化合物分類] フラボノイド (Flavones; 5 × O-置換基)

[構造式]

[分子式] $C_{15}H_{10}O_{10}S$

[分子量] 382.304

[基原] 次の植物から分離: *Bixa orellana*



文献

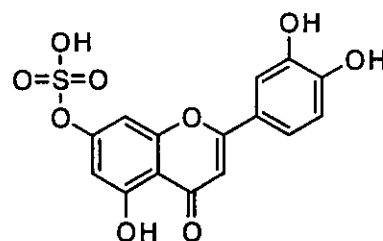
Harborne, J.B., *Phytochemistry*, 1975, 14, 1331, (8-sulfate)

§ 3',4',5,7-Tetrahydroxyflavone; 7-O-Sulfate

[化学名・別名] Luteolin 7-sulfate

[CAS No.] 56857-57-9

[化合物分類]フラボノイド (Flavones; 4 × O-置換基)



[構造式]

[分子式] $C_{15}H_{10}O_6S$

[分子量] 366.305

[基原] 次の植物から分離: *Bixa orellana*

----- 文献 -----

Perkin, A.G., J.C.S., 1900, 77, 1315, (分離)

Diller, E., Ber., 1901, 34, 1452, (分離)

Karrer, W. et al., Konstitution und Vorkommen der Organischen Pflanzenstoffe, 2nd edn., Birkhäuser Verlag, Basel, 1972, nos. 1470; 1473, (生育)

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

Birkofer, L. et al., Annalen, 1989, 725, 196-202, (Neobignonoside)

Imperato, F. et al., Phytochemistry, 1996, 41, 337-338, (7-sophoroside)

Brinkmeier, E. et al., Z. Naturforsch., C, 1998, 53, 1-3, (7-sophorotrioside)

§ 2,3,19,23-Tetrahydroxy-12-oleanen-28-oic acid; (2 α , 3 β , 19 β)-form

[化学名・別名] Tomentosic acid

[CAS No.] 6753-23-7

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

[構造式]

[分子式] $C_{30}H_{48}O_6$

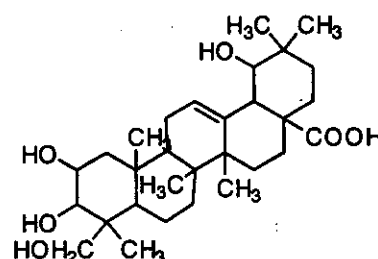
[分子量] 504.706

[基原] *Terminalia tomentosa*, *Bixa orellana*

[性状] 結晶 (Me₂CO)

[融点] Mp 328-330 °C

[比旋光度]: $[\alpha]_D^{25} +64$ (EtOH)



----- 文献 -----

Row, L.R. et al., Tetrahedron, 1962, 18, 827-838, (分離, Tomentosic acid)

Schneider, W.P. et al., J.O.C., 1965, 30, 2856-2857, (構造決定, Tomentosic acid)

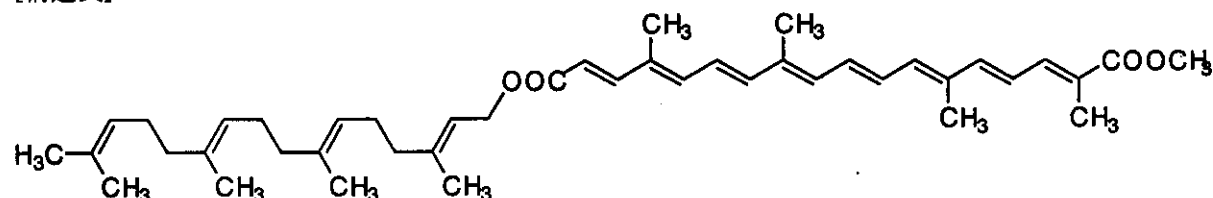
Mahato, S. et al., J.C.S. Perkin 2, 1990, 1445-1450, (結晶構造, Tomentosic acid)

§ 2,6,11,15-Tetramethyl-2,4,6,8,10,12,14,16-octadecaene dioic acid; (all-E)-form, 18-(3,7,11,15-Tetramethyl-2,6,10,14-hexadecatetraenoyl) ester, 1-Me ester

[CAS No.] 247030-33-7

[化合物分類]テルペノイド (Apocarotenoids)

[構造式]



[分子式] $C_{33}H_{50}O_4$

[分子量] 640.945

[基原] *Bixa orellana* の種子

UV: [neutral] λ_{max} 330 ; 416 ; 441 ; 469 (2-methoxy-2-methylpropane)

[その他のデータ] Ester with Geranylgeraniol

----- 文献 -----

Mercadante, A.Z. et al., Phytochemistry, 1999, 52, 135-139, (分離, H-NMR, C13-NMR)

§ 4',5,7-Trihydroxyflavone; 7-O-Sulfate

[CAS No.] 56857-56-8

[化合物分類]フラボノイド (Flavones; 3 × O-置換基)

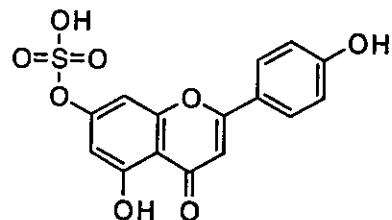
[構造式]

[分子式] C₁₅H₁₀O₆S

[分子量] 350.305

[基原] 次の植物から分離: *Bixa orellana*

[性状] 物理化学的性質に関する報告はない



-----文献-----

Harborne, J.B., *Phytochemistry*, 1975, 14, 1331, (7-sulfate)

*****ベニバナ (Safflower) *****

§ § キク科ベニバナ (*Carthamus tinctorius* L.) の花または地下部。

§ 4,4''-Bi(*N*-4-hydroxycinnamoylserotonin); (*E,E*)-form

[CAS No.] 175702-01-9

[化合物分類] アルカロイド化合物 (Simple bisindole alkaloids), アルカロイド化合物 (Cinnamic acid amides)

[構造式]

[分子式] C₃₈H₃₄N₄O₆

[分子量] 642.71

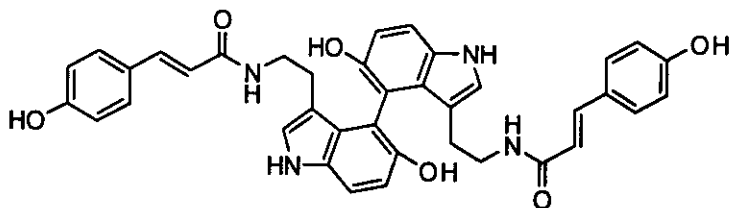
[基原] 次の植物から分離: ベニバナ (*Carthamus tinctorius*) の油かす

[用途] 抗酸化剤

[性状] 粉末

[融点] Mp 180-182 °C

UV: [neutral] λ_{max} 221 (ε 43000); 294 (ε 35000); 305 (ε 34700) (MeOH)



-----文献-----

Zhang, H.-L. et al., *Chem. Pharm. Bull.*, 1997, 45, 1910-1914, (分離, UV, IR, H-NMR, C13-NMR)

§ 4,4''-Bi(*N*-4-hydroxycinnamoylserotonin); (*E,E*)-form, 3'-Methoxy

[化学名・別名] 4-[*N*-(*p*-Coumaroyl) serotonin-4''-yl]-*N*-feruloylserotonin

[CAS No.] 175702-02-0

[化合物分類] アルカロイド化合物 (Simple bisindole alkaloids), アルカロイド化合物 (Cinnamic acid amides)

[構造式]

[分子式] C₃₉H₃₆N₄O₇

[分子量] 672.736

[基原] *Carthamus tinctorius* の油かす

[用途] 抗酸化剤

[性状] 粉末

[融点] Mp 179-181 °C

UV: [neutral] λ_{max} 221 (ε 70500); 292 (ε 51000); 309 (ε 52700) (MeOH)

-----文献-----

Zhang, H.-L. et al., *Chem. Pharm. Bull.*, 1997, 45, 1910-1914, (分離, UV, IR, H-NMR, C13-NMR)

§ 4,4''-Bi(*N*-4-hydroxycinnamoylserotonin); (*E,E*)-form, 3',3'''-Dimethoxy

[化学名・別名] 4,4''-Bis(*N*-feruloyl) serotonin, 4,4''-Bi[*N*-(4-hydroxy-3-methoxycinnamoyl) serotonin]

[CAS No.] 175702-03-1

[化合物分類] アルカロイド化合物 (Cinnamic acid amides), アルカロイド化合物 (Simple bisindole alkaloids)

[構造式]

[分子式] $C_{40}H_{38}N_4O_8$

[分子量] 702.762

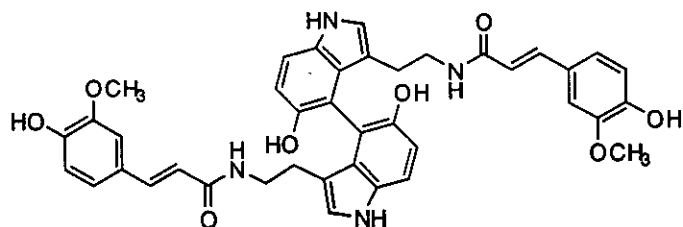
[基原] *Carthamus tinctorius* の油かす

[用途] 抗酸化剤

[融点] Mp 158-160 °C

UV: [neutral] λ_{max} 289 (ϵ 35400); 317 (ϵ

38800) (MeOH)



-----文献-----

Zhang, H.-L. et al., Chem. Pharm. Bull., 1997, 45, 1910-1914, (分離, UV, IR, H-NMR, C13-NMR)

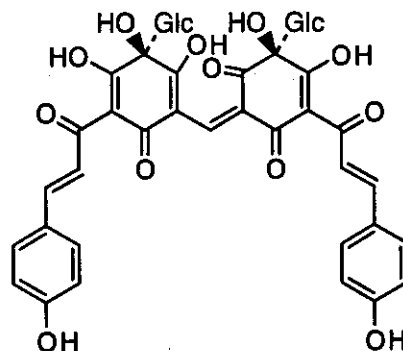
§ Carthamin

[化学名・別名] C.I. Natural Red 26

[CAS No.] 36338-96-2

[化合物分類] フラボノイド (Biflavonoids and polyflavonoids), フラボノイド (Chalcone flavonoids; 5 × O-置換基)

[構造式]



Absolute Configuration

[分子式] $C_{43}H_{42}O_{22}$

[分子量] 910.792

[基原] *Carthamus tinctorius* の花卉の赤色色素

[性状] 赤色の針状結晶 (Py)

[融点] Mp 228-230 °C

-----文献-----

Takahashi, Y. et al., Tet. Lett., 1982, 23, 5163, (構造決定)

Saito, K. et al., Biochem. Physiol. Pflanz., 1989, 184, 145, (分離)

Sato, S. et al., Chem. Lett., 1996, 833, (合成法, CD, 結晶構造, 絶対構造)

Watanabe, T. et al., Biosci., Biotechnol., Biochem., 1997, 61, 1179-1183, (分析)

§ Carthamone

[CAS No.] 86579-00-2

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

[構造式]

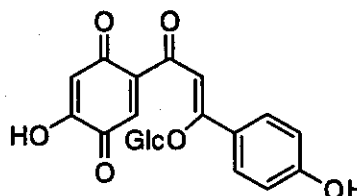
[分子式] $C_{21}H_{20}O_{11}$

[分子量] 448.382

[一般的性質] Incorr. abstracted in CA as lacking the glucosyl group

[基原] 次の植物から分離: *Carthamus tinctorius* の花, また Carthamin の酸化によって得られる

[性状] 赤色色素



-----文献-----

Seshadri, T.R. et al., Curr. Sci., 1960, 29, 54

Harborne, J.B., Comp. Biochem. of the Flavonoids, Academic Press, 1967, 80

§ Cartorimine

[化合物分類] 脂肪族化合物 (Bicycloheteroalicyclics (1 × O))

[構造式]

[分子式] $C_{15}H_{14}O_6$

[分子量] 290.272

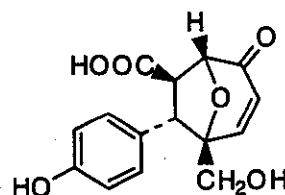
[基原] *Carthamus tinctorius*

[性状] プリズム結晶 (MeOH)

[融点] Mp 206-207 °C

[比旋光度]: $[\alpha]_D^{25}$ -2.6 (c, 0.005 in MeOH)

UV: [neutral] λ_{max} 225 (log ϵ 4.04) (MeOH)



Relative Configuration

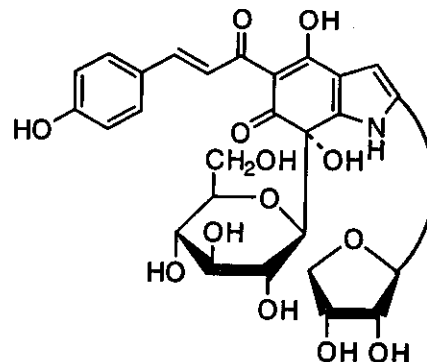
-----文献-----

Yin, H.-B. et al., J. Nat. Prod., 2000, 63, 1164-1165

§ Cartormin

[化合物分類]フラボノイド(Chalcone flavonoids; 4 × O-置換基), アルカロイド化合物(Simple indole alkaloids)

[構造式]



[分子式] $C_{27}H_{29}NO_{13}$

[分子量] 575.525

[一般的性質] Enolised β -diketone

[基原] *Carthamus tinctorius*

[性状] 黄色のプリズム結晶 (MeOH)

[比旋光度]: $[\alpha]_D^{27} -153.4$ (c, 0.01 in Py)

[その他のデータ] Mp >230 °C (分解)

-----文献-----

Yin, H.-B. et al., Tet. Lett., 2000, 41, 1955-1958, (分離, H-NMR, C13-NMR, Mass, 結晶構造)

§ 1-Chloro-3,11-tridecadiene-5,7,9-triyn-2-ol; (E,E)-form

[化合物分類] 脂肪族化合物 (Acetylenic alcohols)

[構造式]

[分子式] $C_{13}H_{11}ClO$

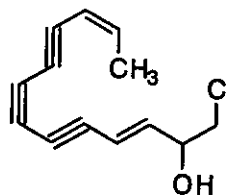
[分子量] 218.682

[基原] 次の植物から分離: *Carthamus tinctorius*

[性状] 黄色がかった結晶 (Et₂O/petrol)

[融点] Mp 83 °C

[比旋光度]: $[\alpha]_{D_{25}} -3$ (c, 0.33 in Et₂O)



-----文献-----

Bohlmann, F. et al., Chem. Ber., 1966, 99, 3433, (分離, UV, IR, H-NMR, ORD, 構造決定)

§ 2-Chloro-3-tridecene-5,7,9,11-tetrayn-1-ol; (E)-form

[化学名・別名] Chlorohydrin

[CAS No.] 71866-99-4

[化合物分類] 脂肪族化合物 (Acetylenic alcohols)

[構造式]

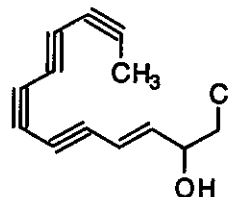
[分子式] $C_{13}H_9ClO$

[分子量] 216.666

[基原] 次の植物から分離: *Centaurea* spp., *Carthamus tinctorius*, *Gnaphalium wrightii* (not all samples definitely E-config.)

[融点] Mp 111-112 °C で分解

[比旋光度]: $[\alpha]_D^{22} -88.5$ (CHCl₃)



-----文献-----

Bohlmann, F. et al., Chem. Ber., 1961, 94, 3179; 1962, 95, 2939; 1964, 97, 809; 1966, 99, 3433, (分離, 構造決定, 合成法, 生合成)

Andersen, A.B. et al., Phytochemistry, 1977, 16, 1829, (分離)

Bohlmann, F. et al., Phytochemistry, 1980, 19, 71, (分離)

§ 2,8-Decadiene-4,6-diyn-1-ol; (2E,8Z)-form, 3-Methylbutanoyl

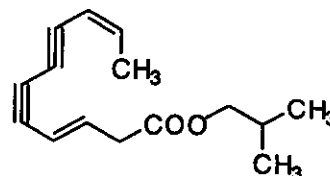
[CAS No.] 29444-87-9

[化合物分類] 脂肪族化合物 (Acetylenic acids and esters)

[構造式]

[基原] *Carthamus tinctorius*

[性状] オイル



-----文献-----

Gardner, J.N. et al., J.C.S., 1960, 691, (分離, 構造決定)

Bohlmann, F. et al., Chem. Ber., 1969, 102, 1679; 1972, 105, 1919, (分離, 合成法, H-NMR)

Davies, D.G. et al., J.C.S. Perkin 1, 1978, 1602, (生合成, 分離)

Shao, Y. et al., *Phytochemistry*, 1995, 38, 675, (Asteryunnanoside I)

§ 4,6-Decadiyn-1-ol (CAS 名)

[化合物分類] 脂肪族化合物 (Acetylenic alcohols)

[構造式] $H_3CCH_2CH_2C \equiv CC \equiv CCH_2CH_2CH_2OH$

[分子式] $C_{10}H_{14}O$

[分子量] 150.22

[基原] *Carthamus tinctorius*

[沸点] $Bp_{0.001}$ 80-90 °C

----- 文献 -----

Bohlmann, F. et al., *Chem. Ber.*, 1956, 89, 1276; 1970, 103, 2853, (分離, 構造決定, 合成法)

§ 4,6-Decadiyn-1-ol; 3-Methylbutanoyl

[化学名・別名] 4,6-Decadiyn-1-ol isovalerate

[CAS No.] 29314-16-7

[化合物分類] 脂肪族化合物 (Acetylenic acids and esters)

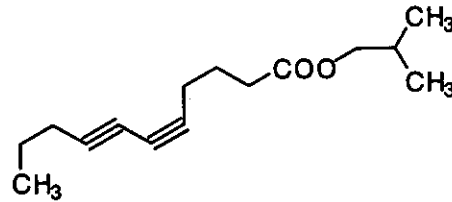
[構造式]

[分子式] $C_{15}H_{22}O_2$

[分子量] 234.338

[基原] 次の植物から分離: *Carthamus tinctorius*

[性状] オイル



----- 文献 -----

Bohlmann, F. et al., *Chem. Ber.*, 1956, 89, 1276; 1970, 103, 2853, (分離, 構造決定, 合成法)

§ 8-Decene-4,6-diyn-1-ol; (Z)-form, 3-Methylbutanoyl

[化合物分類] 脂肪族化合物 (Acetylenic acids and esters)

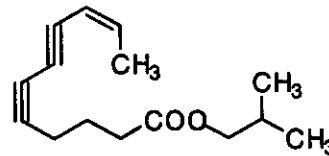
[構造式]

[分子式] $C_{15}H_{20}O_2$

[分子量] 232.322

[基原] *Carthamus tinctorius*

[性状] オイル



----- 文献 -----

Bohlmann, F. et al., *Chem. Ber.*, 1966, 99, 586; 1970, 103, 2853, (分離, UV, IR, H-NMR, 構造決定, 合成法)

Savina, A.A. et al., *Khim. Prir. Soedin.*, 1973, 9, 286; *Chem. Nat. Compd. (Engl. Transl.)*, 1973, 9, 283, (3-methylthiobutenoyl)

Wang, C.Z. et al., *Phytochemistry*, 1998, 48, 711-717, (分離, 配糖体)

Barrero, A.F. et al., *Phytochemistry*, 1998, 48, 1237-1240, (分離, UV, IR, H-NMR, C_{13} -NMR, Mass)

§ 5,7-Dihydroxy-4'-methoxyflavone; 7-O- $[\beta$ -D-Apiofuranosyl-(1 → 6)- β -D-glucopyranoside]

[CAS No.] 239106-94-6

[化合物分類] フラボノイド (Flavones; 3 × O-置換基)

[構造式]

[分子式] $C_{27}H_{30}O_{14}$

[分子量] 578.526

[基原] *Crotalaria podocarpa*, *Carthamus*

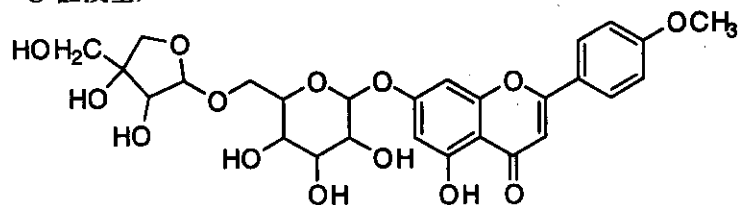
tinctorius の種子

[性状] 黄色の粉末

[融点] Mp 240-244 °C

[比旋光度]: $[\alpha]_D -23$ (c, 1 in MeOH)

UV: [neutral] λ_{max} 268; 325 (MeOH)



----- 文献 -----

Khadzhai, Y. et al., *Farmakol. Toksikol. (Moscow)*, 1969, 32, 451, (薬理)

Wanjala, C.C.W. et al., *Phytochemistry*, 1999, 51, 705-707, (7-apiosylglucoside)

Ahmed, K.M. et al., *Pharmazie*, 2000, 55, 621-622, (7-apiosylglucoside)

§ 15,20-Dihydroxypregn-4-en-3-one; (15 α , 20R)-form

[化合物分類]ステロイド (Pregnane steroids). (C21).
[構造式]

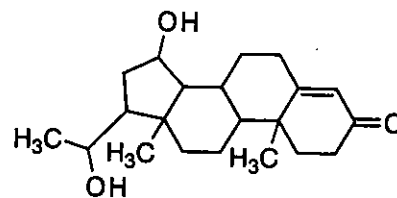
[分子式] $C_{21}H_{32}O_3$

[分子量] 332.482

[基原] the defence secretion of *Platambus maculatus*; *Carthamus tinctorius* から得られる配糖体

[性状] 結晶 (MeOH)

[融点] Mp 132-134 °C



-----文献-----

Schildknecht, H. et al., *Naturwissenschaften*, 1969, 56, 37, (分離)

Palter, R. et al., *Phytochemistry*, 1972, 11, 819, (分離, 構造決定)

Nagatsu, A. et al., *Chem. Pharm. Bull.*, 1998, 46, 1044-1047, (6'-acetylcellobioside, 結晶構造)

Sarker, S.D. et al., *Phytochemistry*, 1998, 48, 1039-1043, (Moschatine)

§ 15,20-Dihydroxypregn-4-en-3-one; (15 α , 20R)-form, 20-O-[β -D-Glucopyranosyl-(1 \rightarrow 4)-6-O-acetyl- β -D-glucopyranoside]

[化合物分類]ステロイド (Pregnane steroids). (C21).

[構造式]

[分子式] $C_{35}H_{54}O_{14}$

[分子量] 698.803

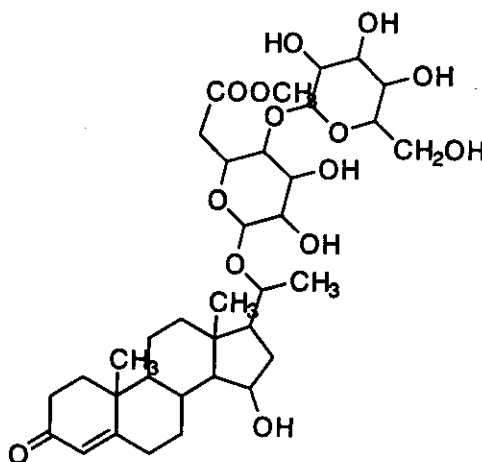
[基原] *Carthamus tinctorius*

[性状] 結晶

[融点] Mp 145-146 °C

[比旋光度]: $[\alpha]_D^{25} +57.9$ (c, 0.6 in MeOH)

UV: [neutral] λ_{max} 241 (ϵ 15700) (MeOH)



-----文献-----

Schildknecht, H. et al., *Naturwissenschaften*, 1969, 56, 37, (分離)

Palter, R. et al., *Phytochemistry*, 1972, 11, 819, (分離, 構造決定)

Smith, K.E. et al., *J. Steroid Biochem.*, 1989, 33, 927, (合成法, H-NMR, 15 α , 20R-form)

Nagatsu, A. et al., *Chem. Pharm. Bull.*, 1998, 46, 1044-1047, (6'-acetylcellobioside, 結晶構造)

Sarker, S.D. et al., *Phytochemistry*, 1998, 48, 1039-1043, (Moschatine)

§ 6,8-Dotriacontanediol; (6R*,8S*)-form

[化学名・別名] erythro-form

[CAS No.] 155800-89-8

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

[構造式]

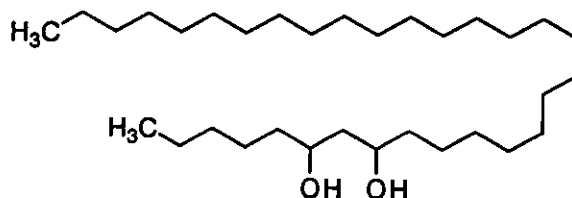
[分子式] $C_{32}H_{66}O_2$

[分子量] 482.872

[基原] *Carthamus tinctorius* のドライフラワー(キク科)

[性状] 結晶 (Me₂CO/MeOH)

[融点] Mp 79-82 °C



-----文献-----

Akihisa, T. et al., *Phytochemistry*, 1994, 36, 105, (分離, Mass)

§ 7,9-Dotriacontanediol; (7R*,9S*)-form

[化学名・別名] erythro-form

[CAS No.] 193419-73-7

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

[構造式]

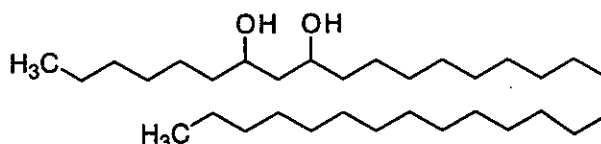
[分子式] $C_{32}H_{66}O_2$

[分子量] 482.872

[基原] *Carthamus tinctorius* のドライフラワー

[性状] 結晶 (Me₂CO/MeOH)

[融点] Mp 77-80 °C



-----文献-----

Akihisa, T. et al., *Phytochemistry*, 1997, 45, 725-728, (分離, Mass)

§ 6,8-Heneicosanediol; (6*R**,8*S**)-form

[化学名・別名] *erythro*-form

[CAS No.] 155800-82-1

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

[構造式]

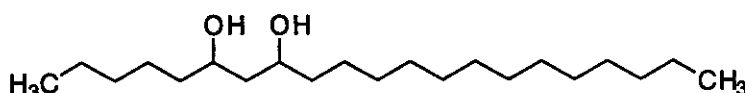
[分子式] $C_{21}H_{44}O_2$

[分子量] 328.577

[基原] *Carthamus tinctorius* のドライ
ラワー (キク科)

[性状] 結晶 (Me₂CO/MeOH)

[融点] Mp 66-68 °C



-----文献-----

Akihisa, T. et al., *Phytochemistry*, 1994, 36, 105, (分離, H-NMR, Mass)

§ 6,8-Hentriacontanediol; (6*R**,8*S**)-form

[化学名・別名] *erythro*-form

[CAS No.] 155800-88-7

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

[構造式]

[分子式] $C_{31}H_{64}O_2$

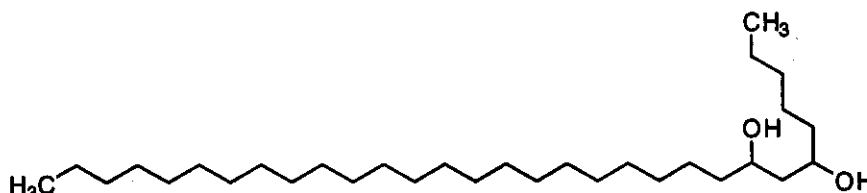
[分子量] 468.845

[基原] *Carthamus tinctorius* のドライラワー (キク科)

[性状] 結晶 (Me₂CO/MeOH)

[融点] Mp 80-81 °C

[比旋光度]: $[\alpha]_D -0.5$ (c, 0.09 in CHCl₃)



-----文献-----

Akihisa, T. et al., *Phytochemistry*, 1994, 36, 105, (分離, IR, H-NMR, C13-NMR, Mass)

§ 8,10-Hentriacontanediol; (8*R**,10*S**)-form

[化学名・別名] *erythro*-form

[CAS No.] 193419-78-2

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

[構造式]

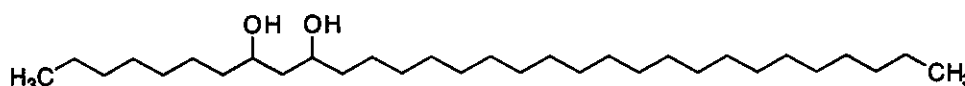
[分子式] $C_{31}H_{64}O_2$

[分子量] 468.845

[基原] *Carthamus tinctorius* のドライラワー

[性状] 結晶 (Me₂CO/MeOH)

[融点] Mp 64-66 °C



-----文献-----

Akihisa, T. et al., *Phytochemistry*, 1997, 45, 725-728, (分離, Mass)

§ 6,8-Heptacosanediol; (6*S*,8*R*)-form

[化学名・別名] *erythro*-form

[CAS No.] 155800-85-4

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

[構造式]

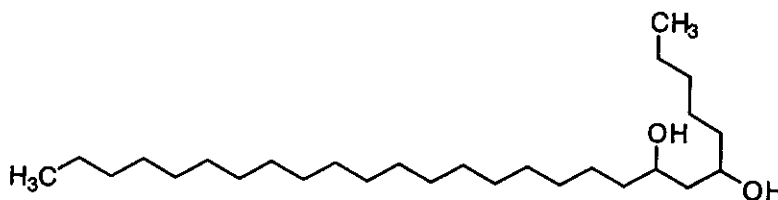
[分子式] $C_{27}H_{56}O_2$

[分子量] 412.738

[基原] *Carthamus tinctorius* の花,
Cynara cardanclus, *Taraxacum*
platycarpum

[性状] 結晶 (Me₂CO/MeOH)

[融点] Mp 66-68 °C



-----文献-----

Akihisa, T. et al., *Phytochemistry*, 1994, 36, 105-108, (分離, Mass)

Ukiya, M. et al., *Chem. Pharm. Bull.*, 2000, 48, 1187-1189, (絶対構造)

§ 8,10-Heptacosanediol; (8*R,10*S**)-form**

[化学名・別名] *erythro*-form

[CAS No.] 193419-76-0

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

[構造式]

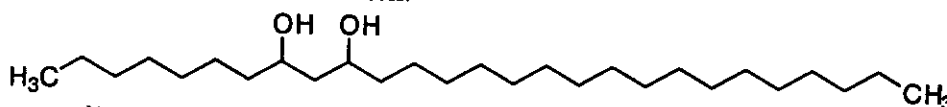
[分子式] $C_{27}H_{56}O_2$

[分子量] 412.738

[基原] *Carthamus tinctorius* のドライフラワー

[性状] 結晶 (Me₂CO/MeOH)

[融点] Mp 54-56 °C



-----文献-----

Akihisa, T. et al., *Phytochemistry*, 1997, 45, 725-728, (分離, Mass)

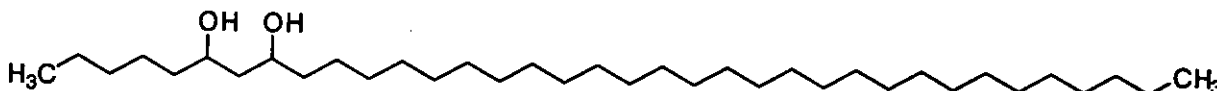
§ 6,8-Hexatriacontanediol; (6*R,8*S**)-form**

[化学名・別名] *erythro*-form

[CAS No.] 193419-70-4

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

[構造式]



[分子式] $C_{36}H_{74}O_2$

[分子量] 538.979

[基原] *Carthamus tinctorius* のドライフラワー

[性状] 結晶 (Me₂CO/MeOH)

[融点] Mp 88-90 °C

-----文献-----

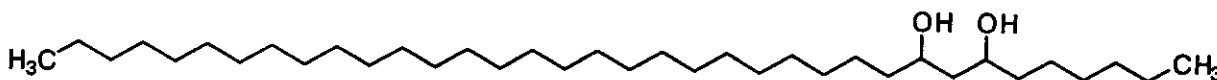
Akihisa, T. et al., *Phytochemistry*, 1997, 45, 725-728, (分離, H-NMR, Mass)

§ 7,9-Hexatriacontanediol; (7*R,9*S**)-form**

[化学名・別名] *erythro*-form

[CAS No.] 193419-75-9

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



[構造式]

[分子式] $C_{36}H_{74}O_2$

[分子量] 538.979

[基原] *Carthamus tinctorius* のドライフラワー

[性状] 結晶 (Me₂CO/MeOH)

[融点] Mp 81-84 °C

-----文献-----

Akihisa, T. et al., *Phytochemistry*, 1997, 45, 725-728, (分離, Mass)

§ Hydroxysafflor yellow A

[CAS No.] 146087-19-6

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

[構造式]

[分子式] C₂₇H₃₂O₁₆

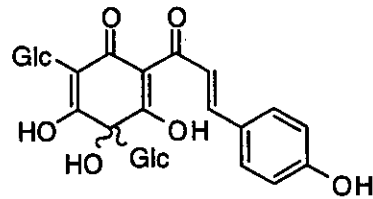
[分子量] 612.54

[一般的性質] Ring-opened form of Safflor Yellow A

[基原] *Carthamus tinctorius* の花卉

[性状] 黄色の粉末

[比旋光度]: [α]_D -54.3 (c, 0.1 in MeOH)



----- 文献 -----

Meselhy, M.R. et al., Chem. Pharm. Bull., 1993, 41, 1796, (分離, H-NMR, C13-NMR)

§ 5-Hydroxytryptamine; N^o-(4-Hydroxycinnamoyl) (E-)

[化学名・別名] N^o-p-Coumaroylserotonin. Ipobscurine A

[CAS No.] 68573-24-0

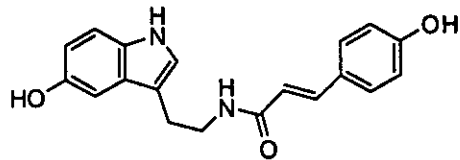
[化合物分類] アルカロイド化合物 (Simple tryptamine alkaloids)

[構造式]

[分子式] C₁₉H₁₈N₂O₃

[分子量] 322.363

[基原] 次の植物の種子から得られるアルカロイド: *Ipomoea obscura*, *Carthamus tinctorius*



----- 文献 -----

Eich, E. et al., Planta Med., 1986, 52, 523, (Ipobscurine A)

§ 5-Hydroxytryptamine; N^o-(4-Hydroxycinnamoyl) (E-), O-β-D-glucopyranoside

[CAS No.] 76423-56-8

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

[構造式]

[分子式] C₂₅H₂₈N₂O₆

[分子量] 484.505

[基原] 次の植物から得られるアルカロイド: HOH₂C

Carthamus tinctorius

[性状] 針状結晶

[融点] Mp 240-242 °C

[比旋光度]: [α]_D²⁵ -14.9 (c, 0.7 in MeOH)

----- 文献 -----

Nishida, R. et al., Experientia, 1987, 43, 342, (5-Hydroxy-N^o-methyltryptamine)

§ 5-Hydroxytryptamine; N^o-(4-Hydroxy-3-methoxycinnamoyl) (E-)

[化学名・別名] N^o-(E)-Feruloylserotonin. Moschamine

[CAS No.] 68573-23-9

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

[構造式]

[分子式] C₂₀H₂₀N₂O₄

[分子量] 352.389

[基原] 次の植物から得られるアルカロイド: *Carthamus tinctorius*, *Centaurea moschata* (キク科)

[性状] 針状結晶

[融点] Mp 115-117 °C

[その他のデータ] Isol. with Z-isomer as a mixt.

----- 文献 -----

Sarker, S.D. et al., Nat. Prod. Lett., 1997, 9, 189-199, (Moschamines)

§ 5-Hydroxytryptamine; N^o-(4-Hydroxy-3-methoxycinnamoyl) (E-), O-β-D-glucopyranoside

[化合物分類] アルカロイド化合物 (Cinnamic acid amides), アルカロイド化合物 (Simple tryptamine

alkaloids)

[構造式]

[分子式] $C_{26}H_{30}N_2O_9$

[分子量] 514.531

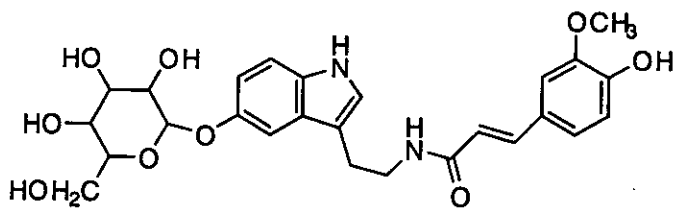
[基原] 次の植物から得られるアルカロイド:

Carthamus tinctorius

[性状] 針状結晶

[融点] Mp 143-145 °C

[比旋光度]: $[\alpha]_D^{25} -8.8$ (c, 1.2 in MeOH)



-----文献-----

Bowden, K. et al., Nature (London), 1954, 174, 925, (分離)

Stoll, A., Helv. Chim. Acta, 1955, 38, 1452, (N-Me)

Mathias, A.P. et al., Nature (London), 1957, 180, 658, (分離, 生育)

Sarker, S.D. et al., Nat. Prod. Lett., 1997, 9, 189-199, (Moschamines)

§ Kinobeon A

[化学名・別名] 4,4'-(2-Butene-1,4-diyliidene) bis (2,6-dimethoxy-2,5-cyclohexadien-1-one) (CAS 名). 1,4-Bis (3,5-dimethoxy-4-oxo-2,5-cyclohexadienylidene)-2-butene

[CAS No.] 155239-87-5

[化合物分類] 多環芳香族 (Extended quinones)

[構造式]

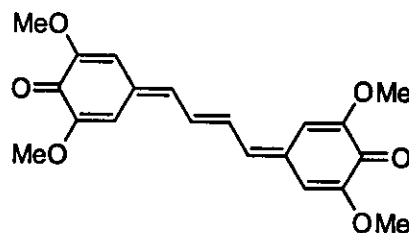
[分子式] $C_{20}H_{20}O_6$

[分子量] 356.374

[基原] *Carthamus tinctorius* (ベニバナ) の培養物から得られる色素 (キク科)

[性状] 赤色の結晶

[融点] Mp 224-226 °C



-----文献-----

Wakayama, S. et al., Z. Naturforsch., C, 1994, 49, 1, (分離, UV)

§ 6,8-Nonacosanediol; (6S,8R)-form

[化学名・別名] erythro-form

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

[構造式]

[分子式] $C_{29}H_{60}O_2$

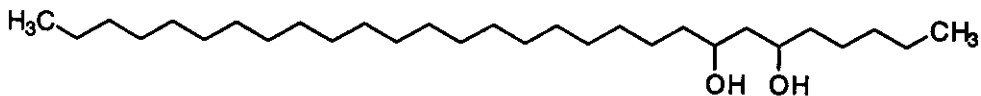
[分子量] 440.792

[基原] *Carthamus*

tinctorius の花, *Cynara cardanclus*, *Taraxacum platycarpum*

[性状] 結晶 (Me₂CO/MeOH)

[融点] Mp 72-74 °C



-----文献-----

Akihisa, T. et al., Phytochemistry, 1994, 36, 105-108, (分離)

Ukiya, M. et al., Chem. Pharm. Bull., 2000, 48, 1187-1189, (絶対構造)

§ 8,10-Nonacosanediol; (8R*,10S*)-form

[化学名・別名] erythro-form

[CAS No.] 193419-77-1

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

[構造式]

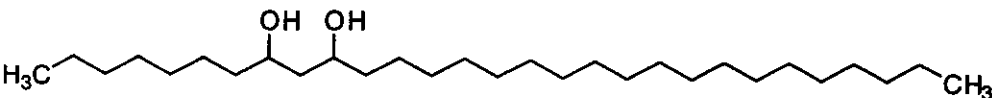
[分子式] $C_{29}H_{60}O_2$

[分子量] 440.792

[基原] *Carthamus tinctorius* のドライフラワー

[性状] 結晶 (Me₂CO/MeOH)

[融点] Mp 52-55 °C



-----文献-----

Akihisa, T. et al., Phytochemistry, 1997, 45, 725-728, (分離, H-NMR, Mass)

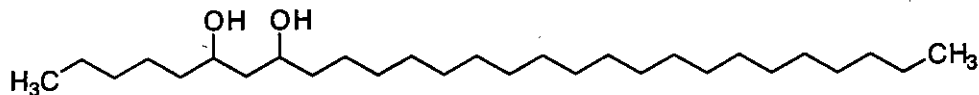
§ 6,8-Octacosanediol; (6*R**,8*S**)-form

[化学名・別名] *erythro*-form

[CAS No.] 155800-86-5

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

[構造式]



[分子式] C₂₈H₅₈O₂

[分子量] 426.765

[基原] *Carthamus tinctorius* のドライフラワー (キク科)

-----文献-----

Akihisa, T. et al., *Phytochemistry*, 1994, 36, 105, (分離, Mass)

§ 7,9-Octacosanediol; (7*R**,9*S**)-form

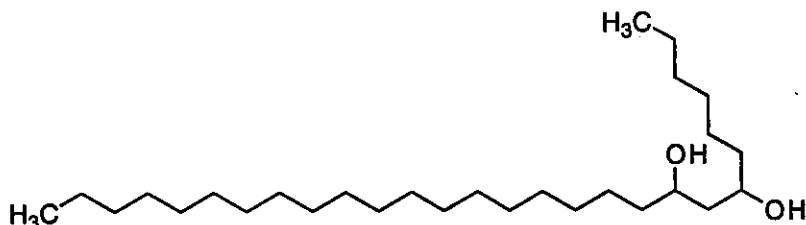
[化学名・別名] *erythro*-form

[CAS No.] 193419-71-5

[化合物分類] 脂肪族化合物

(Saturated unbranched alcohols)

[構造式]



[分子式] C₂₈H₅₈O₂

[分子量] 426.765

[基原] *Carthamus tinctorius* のドライフラワー

[性状] 結晶 (Me₂CO/MeOH)

[融点] Mp 56-58 °C

-----文献-----

Akihisa, T. et al., *Phytochemistry*, 1997, 45, 725-728, (分離, Mass)

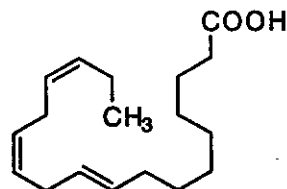
§ 9,12,15-Octadecatrienoic acid; (*E,E,E*)-form

[化学名・別名] Linolenelaidic acid. Elaidolinolenic acid

[CAS No.] 28290-79-1

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

[構造式]



[分子式] C₁₈H₃₀O₂

[分子量] 278.434

[基原] 次の植物から分離: ベニバナ (*Carthamus tinctorius*) の種子オイル, *Chilopsis linearis*, *Catalpa bignonioides*, 等

[性状] 結晶 (C₆H₆)

[融点] Mp 29.5-30 °C

[沸点] Bp_{0.5} 179-183 °C

[屈折率] n_D²⁷ 1.4655

[販売元] Sigma:L2406

-----文献-----

Chisholm, M.J. et al., *Can. J. Chem.*, 1963, 41, 1888; 1965, 43, 2566, (分離, UV, IR)

Strocchi, A. et al., *Rev. Fr. Corps. Gras*, 1969, 13, 3, (isom)

Karrer, W. et al., *Konstitution und Vorkommen der Organischen Pflanzenstoffe*, 2nd edn., Birkhäuser Verlag, Basel, 1972, no. 759, (生育)

Sandri, J. et al., *Synthesis*, 1995, 271, (linolenic acid, 合成法, H-NMR, C13-NMR, IR)

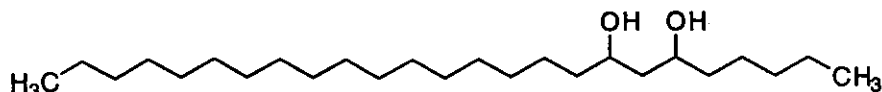
§ 6,8-Pentacosanediol; (6*R**,8*S**)-form

[化学名・別名] *erythro*-form

[CAS No.] 155800-84-3

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

[構造式]



[分子式] C₂₅H₅₂O₂

[分子量] 384.685

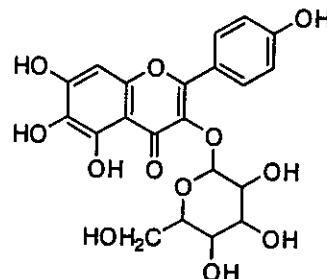
[基原] *Carthamus tinctorius* のドライフラワー (キク科)
[性状] 結晶 (Me₂CO/MeOH)
[融点] Mp 59-62 °C

----- 文献 -----

Akihisa, T. et al., *Phytochemistry*, 1994, 36, 105, (分離, Mass)

§ 3,4',5,6,7-Pentahydroxyflavone; 3-O-β-D-Glucopyranoside

[CAS No.] 145134-61-8
[化合物分類] フラボノイド (Flavonols; 5 × O-置換基)
[構造式]
[分子式] C₂₁H₂₀O₁₂
[分子量] 464.382



[基原] 次の植物から分離: *Carthamus tinctorius* の乾燥花卉
[性状] 黄色の針状結晶 (MeOH)
[融点] Mp 263-265 °C

----- 文献 -----

Southwick, L. et al., *Phytochemistry*, 1972, 11, 2351, (分離, 構造決定)

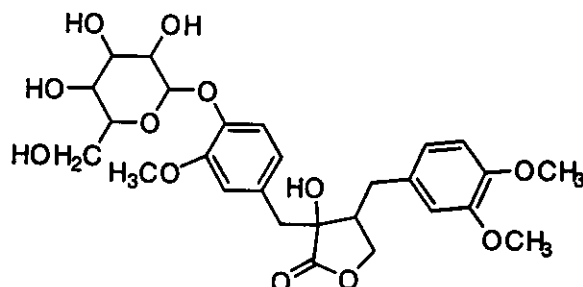
Rodriguez, E. et al., *Phytochemistry*, 1972, 11, 3509, (分離, 構造決定)

Ulubelen, A. et al., *Phytochemistry*, 1980, 19, 1761, (4',5,6,7-Tetrahydroxy-3-methoxyflavone)

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

§ 3,3',4,4',8-Pentahydroxylignan-9,9'-olide; (8S,8'S)-form, 3,3',4'-Tri-Me ether, 4-O-β-D-glucopyranoside

[化学名・別名] Tracheloside
[CAS No.] 33464-71-0
[化合物分類] リグナン化合物
(Saturated dibenzylbutyrolactone lignans)
[構造式]



[分子式] C₂₇H₃₄O₁₂
[分子量] 550.558
[基原] *Trachelospermum* spp., *Carthamus tinctorius*
[性状] 結晶 (EtOAc)
[融点] Mp 168-170 °C
[比旋光度]: [α]_D²⁰ -60 (EtOH)

----- 文献 -----

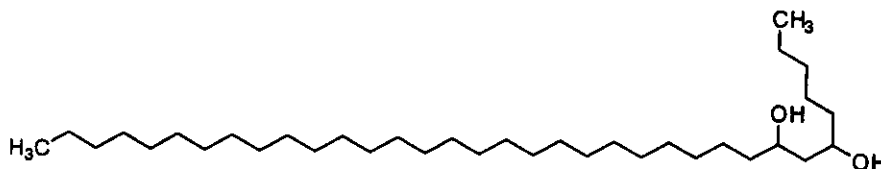
Khamlach, K. et al., *Tetrahedron*, 1992, 48, 10115-10126, (Trachelogenin)

Moritani, Y. et al., *J.O.C.*, 1996, 61, 6922-6930, (合成法, Trachelogenin)

§ 6,8-Pentatriacontanediol; (6R*,8S*)-form

[化学名・別名] erythro-form
[CAS No.] 155800-92-3
[化合物分類] 脂肪族化合物
(Saturated unbranched
alcohols)

[構造式]
[分子式] C₃₅H₇₂O₂
[分子量] 524.953



[基原] *Carthamus tinctorius* のドライフラワー (キク科)
[性状] 結晶 (Me₂CO/MeOH)
[融点] Mp 85-87 °C
[比旋光度]: [α]_D +1.9 (c, 0.14 in CHCl₃)

----- 文献 -----

Akihisa, T. et al., *Phytochemistry*, 1994, 36, 105, (分離, Mass)

§ 8,10-Pentatriacontanediol; (8R*,10S*)-form

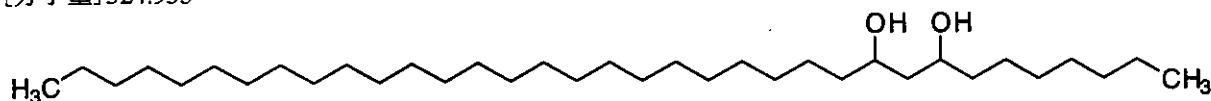
[化学名・別名] erythro-form
[CAS No.] 193419-80-6

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

[構造式]

[分子式] $C_{35}H_{72}O_2$

[分子量] 524.953



[基原] *Carthamus tinctorius* のドライフラワー

[性状] 結晶 (Me₂CO/MeOH)

[融点] Mp 75-78 °C

----- 文献 -----

Akihisa, T. et al., *Phytochemistry*, 1997, 45, 725-728, (分離, Mass)

§ PRE

[CAS No.] 160564-02-3

[化合物分類] フラボノイド (Chalcone flavonoids; 5 × O-置換基), フラボノイド (Biflavonoids and polyflavonoids)

[構造式]

[分子式] $C_{44}H_{44}O_{24}$

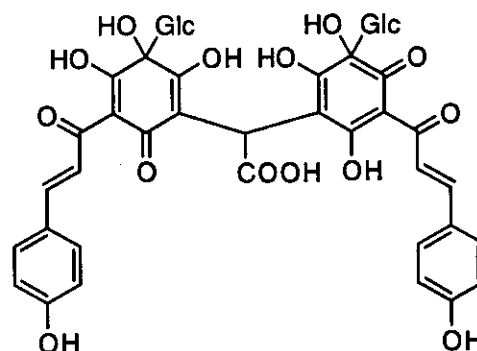
[分子量] 956.817

[基原] 次の植物から分離: *Carthamus tinctorius* の花

[用途] Carthamin の前駆物質

[性状] 不安定な黄色の微細針状結晶

[融点] Mp 300 °C



----- 文献 -----

Kumazawa, T. et al., *Chem. Lett.*, 1994, 2343, (分離, UV, H-NMR, C13-NMR, Mass)

§ Precarthamin

[化学名・別名] 2,4,6-Trihydroxy-3-[1-hydroxy-3-(4-hydroxyphenyl)-2-propenyl] phenyl β-D-glucopyranoside (CAS 名)

[CAS No.] 102716-32-5

[化合物分類] フラボノイド (Chalcone flavonoids; 5 × O-置換基), 単環芳香族 (Acylphloroglucinols)

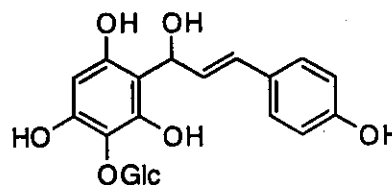
[構造式]

[分子式] $C_{21}H_{24}O_{11}$

[分子量] 452.414

[基原] *Carthamus tinctorius* の花から得られる赤色色素

[用途] Carthamin の生合成の前駆体



----- 文献 -----

Saito, K. et al., *Acta Soc. Bot. Pol.*, 1989, 58, 593

Kazuma, K. et al., *CA*, 1995, 123, 93009f, (分離, 構造決定)

§ Precarthamin

[CAS No.] 168216-23-7

[化合物分類] 単環芳香族 (Acylphloroglucinols), フラボノイド (Chalcone flavonoids; 5 × O-置換基), フラボノイド (Biflavonoids and polyflavonoids)

[構造式]

[分子式] $C_{44}H_{44}O_{24}$

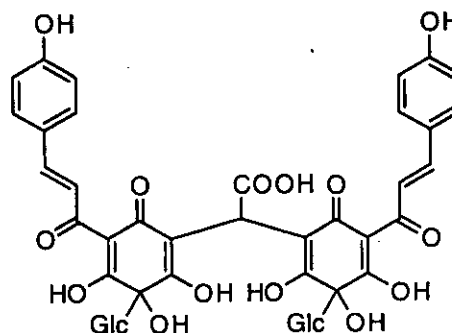
[分子量] 956.817

[基原] *Carthamus tinctorius* (キク科) の花の黄色色素

[用途] Carthamin の生合成の前駆体

[性状] 無定形の黄色の粉末

UV: [neutral] λ_{max} 238 (ε 23600); 406 (ε 46400) (MeOH)

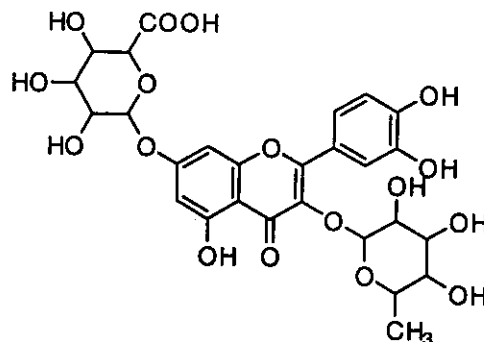


----- 文献 -----

Kazuma, K. et al., Biosci., Biotechnol., Biochem., 1995, 59, 1588-1590; 2000, 64, 1588-1599, (分離, H-NMR, C13-NMR, 構造決定)

§ Quercitrin; 7-O-β-D-Glucuronopyranoside

[化学名・別名] Quercetin 7-glucuronide 3-rhamnoside
[化合物分類] フラボノイド (Flavonols; 5 × O-置換基)
[構造式]



[分子式] C₂₇H₂₈O₁₇

[分子量] 624.508

[基原] *Carthamus tinctorius*

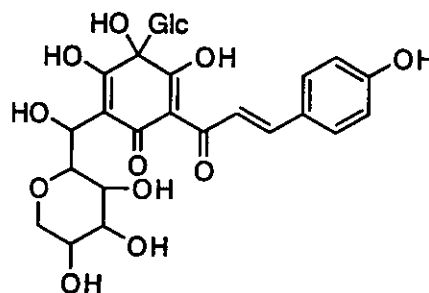
-----文献-----

Karrer, W. et al., Konstitution und Vorkommen der Organischen Pflanzenstoffe, 2nd edn., Birkhäuser Verlag, Basel, 1972, no. 1525, (生育)

Kazuma, K. et al., Biosci., Biotechnol., Biochem., 2000, 64, 1588-1599, (7-glucuronide)

§ Safflomin A

[化学名・別名] SY-1
[CAS No.] 78281-02-4
[化合物分類] フラボノイド (Chalcone flavonoids; 5 × O-置換基)
[構造式]



[分子式] C₂₇H₂₂O₁₆

[分子量] 612.54

[基原] ベニバナ (*Carthamus tinctorius*) から得られる色素

[性状] 黄色の粉末

[融点] Mp 300 °C で分解

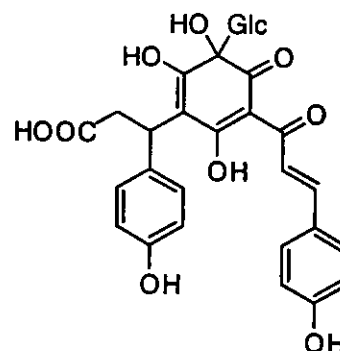
-----文献-----

Onodera, J. et al., Chem. Lett., 1981, 433; 887

Watanabe, T. et al., Biosci., Biotechnol., Biochem., 1997, 61, 1179-1183, (分析)

§ Safflomin C

[CAS No.] 126093-98-9
[化合物分類] フラボノイド (Chalcone flavonoids; 5 × O-置換基)
[構造式]



[分子式] C₃₀H₃₀O₁₄

[分子量] 614.559

[基原] ベニバナ (*Carthamus tinctorius*) から得られる黄色色素

[性状] 黄色の粉末

[融点] Mp 300 °C で分解

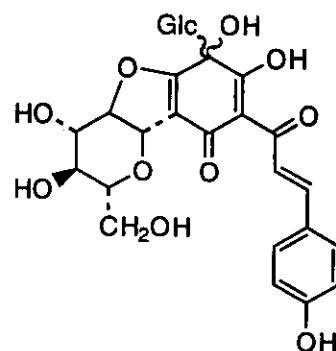
-----文献-----

Onodera, J. et al., Chem. Lett., 1989, 1571

Sato, S. et al., Bull. Chem. Soc. Jpn., 1992, 65, 452, (合成法, C13-NMR)

§ Safflor Yellow A

[CAS No.] 85532-77-0
[化合物分類] フラボノイド (Chalcone flavonoids; 3 × O-置換基)
[構造式]



[分子式] C₂₇H₃₀O₁₅

[分子量] 594.525

[基原] *Carthamus tinctorius* の花卉から得られる黄色色素

[化学物質毒性データ総覧 (RTECS) 登録番号] UQ0333750

-----文献-----

Takahashi, Y. et al., Tet. Lett., 1982, 23, 5163, (構造決定)

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 : 経口投与.

被験動物 : げっ歯類-マウス.

投与量・期間 : 5530 mg/kg

毒性影響 : [行動] 痙攣または発作閾値への影響.

[行動] 運動失調.

[肺,胸郭,または呼吸] 呼吸困難.

参考文献

Zhongcaoyao. Chinese Traditional and Herbal Medicine. (China International Book Trading Corp., POB 2820, Beijing, Peop. Rep. China) 15,348,1984

<<試験方法>> LD50 試験 (50%致死量試験).

曝露経路 : 腹腔内投与.

被験動物 : げっ歯類-マウス.

投与量・期間 : 5490 mg/kg

毒性影響 : [行動] 痙攣または発作閾値への影響.

[行動] 運動失調.

[肺,胸郭,または呼吸] 呼吸刺激.

参考文献

Zhongcaoyao. Chinese Traditional and Herbal Medicine. (China International Book Trading Corp., POB 2820, Beijing, Peop. Rep. China) 15,348,1984

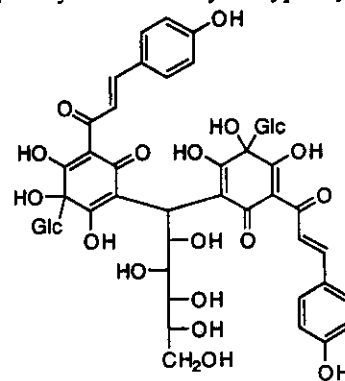
§ Safflor Yellow B

[化学名・別名] 1-Deoxy-1,1-bis[3-β -D-glucopyranosyl-2,3,4-trihydroxy-5-[3-(4-hydroxyphenyl)-1-oxo-2-propeny]-6-oxo-1,4-cyclohexadien-1-yl]-D-glucitol (CAS 名)

[CAS No.] 91574-92-4

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

[構造式]



[分子式] C₄₈H₅₄O₂₇

[分子量] 1062.938

[基原] *Carthamus tinctorius* の花から得られる黄色色素

[性状] 無定形の黄色の粉末

UV: [neutral] λ_{max} 239 (log ε 4.43); 410 (log ε 4.47) (MeOH)

-----文献-----

Takahashi, Y. et al., Tet. Lett., 1984, 24, 2471

Watanabe, T. et al., Biosci., Biotechnol., Biochem., 1997, 61, 1179-1183, (分析)

Kazuma, K. et al., Biosci., Biotechnol., Biochem., 2000, 64, 1588-1599, (分離, UV, CD, H-NMR, C13-NMR)

§ Serotobenine

[化学名・別名] Moschamindole

[CAS No.] 99615-94-8

[化合物分類] アルカロイド化合物 (Miscellaneous polycyclic alkaloids)

[構造式]

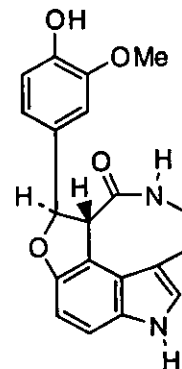
[分子式] C₂₀H₁₈N₂O₄

[分子量] 350.373

[基原] 次の植物から分離: ベニバナ粉 (*Carthamus tinctorius*), *Centaurea moschata* (キク科)

[性状] 結晶 (MeOH)

[融点] Mp 282-284.5 °C で分解



-----文献-----

Sato, H. et al., Agric. Biol. Chem., 1985, 49, 2969, (分離, IR, H-NMR, C13-NMR, Mass, 結晶構造)
Sarker, S.D. et al., Nat. Prod. Lett., 1997, 9, 189-199, (Moschamindole)

§ 4,6,12-Tetradecatriene-8,10-diyne-1,3-diol; (4E,6E,12E)-form, Di-Ac

[化学名・別名] 1,3-Diacetoxy-4,6,12-tetradecatriene-8,10diyne-diyne

[CAS No.] 29576-66-7

[化合物分類] 脂肪族化合物 (Acetylenic acids and esters)

[構造式]

[分子式] C₁₈H₂₀O₄

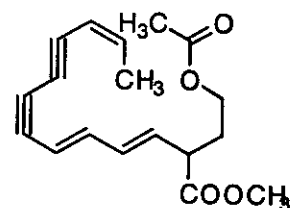
[分子量] 300.354

[基原] *Dahlia* spp., *Carthamus coeruleus*, *Carthamus tinctorius*, *Centaurea diluta*, *Atractylodes japonica*

[融点] Mp 36 °C. Mp 58 °C

[比旋光度]: [α]_D²⁵ +6.4 (c, 3.65 in Et₂O). [α]_D +0.4 (c, 1.0 in MeOH)

[その他のデータ] Kano 等によって青白い黄色のオイルとして分離



-----文献-----

Bohlmann, F. et al., Chem. Ber., 1966, 99, 3433; 3544, (分離, UV, IR, H-NMR)

Bedford, C.T. et al., J.C.S. Perkin 1, 1976, 735, (分離, UV, H-NMR, Mass)

Kano, Y. et al., Chem. Pharm. Bull., 1989, 37, 193, (分離, IR, UV, H-NMR, Mass)

§ 4',5,6,7-Tetrahydroxyflavanone; (S)-form, 5-O-β-D-Glucopyranoside

[化学名・別名] Isocarthamin. Neocarthamin

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

[構造式]

[分子式] C₂₁H₂₂O₁₁

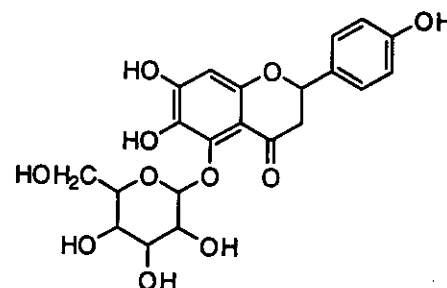
[分子量] 450.398

[基原] 次の植物から分離: *Carthamus tinctorius*

[性状] 黄色の結晶・二水和物

[融点] Mp 228 °C

[その他のデータ] 推定構造式は chalcone (2',3',4,4',6'-Pentahydroxychalcone の誘導体)



-----文献-----

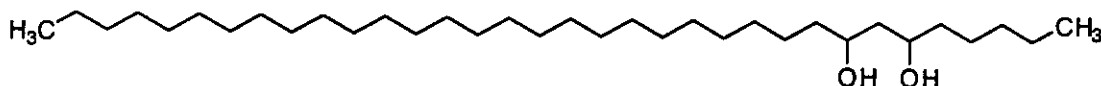
The Flavonoids: Advances in Research since 1980, (Ed. Harborne, J.B.), Chapman and Hall, London, 1988, 362, (Isocarthamin)

§ 6,8-Tetratriacontanediol; (6R*,8S*)-form

[CAS No.] 155800-91-2

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

[構造式]



[分子式] C₃₄H₇₀O₂

[分子量] 510.926

[基原] *Carthamus tinctorius* のドライフラワー (キク科)

[性状] 結晶 (Me₂CO/MeOH)

[融点] Mp 84-85 °C

-----文献-----

Akihisa, T. et al., Phytochemistry, 1994, 36, 105, (分離, Mass)

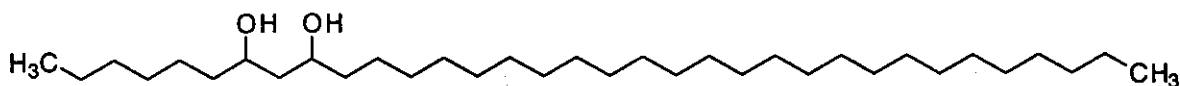
§ 7,9-Tetratriacontanediol; (7R*,9S*)-form

[化学名・別名] erythro-form

[CAS No.] 193419-74-8

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

[構造式]



[分子式] $C_{34}H_{70}O_2$

[分子量] 510.926

[基原] *Carthamus tinctorius* のドライフラワー

[性状] 結晶 (Me₂CO/MeOH)

[融点] Mp 74-78 °C

-----文献-----

Akihisa, T. et al., *Phytochemistry*, 1997, 45, 725-728, (分離, Mass)

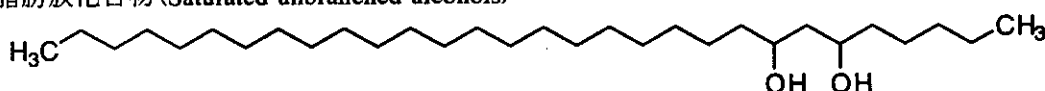
§ 6,8-Triacontanediol; (6R*,8S*)-form

[化学名・別名] *erythro*-form

[CAS No.] 155800-87-6

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

[構造式]



[分子式] $C_{30}H_{62}O_2$

[分子量] 454.819

[基原] *Carthamus tinctorius* のドライフラワー (キク科)

[性状] 結晶 (Me₂CO/MeOH)

[融点] Mp 74-75 °C

-----文献-----

Akihisa, T. et al., *Phytochemistry*, 1994, 36, 105, (分離, Mass)

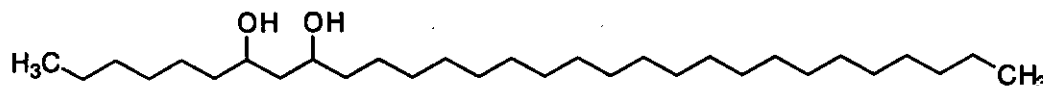
§ 7,9-Triacontanediol; (7R*,9S*)-form

[化学名・別名] *erythro*-form

[CAS No.] 193419-72-6

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

[構造式]



[分子式] $C_{30}H_{62}O_2$

[分子量] 454.819

[基原] *Carthamus tinctorius* のドライフラワー

[性状] 結晶 (Me₂CO/MeOH)

[融点] Mp 59-61 °C

-----文献-----

Akihisa, Y. et al., *Phytochemistry*, 1997, 45, 725-728, (分離, H-NMR, Mass)

§ 6,8-Tricosanediol; (6R',8S')-form

[化学名・別名] *erythro*-form

[CAS No.] 155800-83-2

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

[構造式]

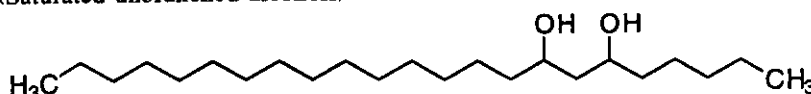
[分子式] $C_{23}H_{46}O_2$

[分子量] 356.631

[基原] *Carthamus tinctorius* のドライフラワー (キク科)

[性状] 結晶 (Me₂CO/MeOH)

[融点] Mp 56-59 °C



-----文献-----

Akihisa, T. et al., *Phytochemistry*, 1994, 36, 105, (分離, Mass)

§ 1,3-Tridecadiene-5,7,9,11-tetrayne; (Z)-form

[CAS No.] 124604-45-1

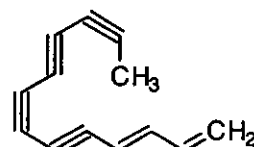
[化合物分類] 脂肪族化合物 (Acetylenic hydrocarbons)

[構造式]

[分子式] $C_{13}H_{18}$

[分子量] 164.206

[基原] 次の植物から分離: yellow starthistle (*Centaurea solstitialis*), ベニバナ (*Carthamus tinctorius*)



-----文献-----

Bohlmann, F. et al., Chem. Ber., 1961, 94, 3179; 1964, 97, 809; 2125; 1965, 98, 3081; 1966, 99, 3201; 3433; 3544; 1968, 101, 2056; 1975, 108, 433, (分離, UV, IR, 合成法, 構造決定)

Schulte, K.E. et al., J. Nat. Prod., 1969, 32, 360, (分離, 構造決定)

Bohlmann, F. et al., Phytochemistry, 1979, 18, 1189; 1980, 19, 331, (分離)

Washino, T. et al., Nippon Nogei Kagaku Kaishi, 1986, 60, 377; CA, 105, 111980a, (分離)

Binder, R.G. et al., J. Agric. Food Chem., 1990, 38, 764; 1245, (分離)

§ 1,11-Tridecadiene-3,5,7,9-tetrayne; (E)-form

[CAS No.] 26130-86-9

[化合物分類] 脂肪族化合物 (Acetylenic hydrocarbons)

[構造式]

[分子式] $C_{13}H_{18}$

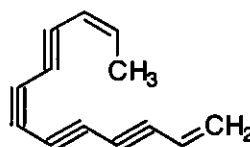
[分子量] 164.206

[基原] *Zoegea baldschuanica* と *Triticum aestivum* の根成分から得られる。次の植物から分離: *Dahlia* sp. の根, *idens graveolens* とその他の *Bidens* spp. の根, *Carthamus tinctorius* の発芽種子と *Coreopsis* sp.

Widespread minor constit. of the キク科

[性状] 青白い黄色の針状結晶 (pentane)

[その他のデータ] 40℃よりも高温で融解無しに分解する。Rapidly becomes brown in diffused daylight even at -5℃



-----文献-----

Bohlmann, F. et al., Chem. Ber., 1958, 91, 1642; 1962, 95, 1315; 1964, 97, 1193; 2583; 1965, 98, 872; 1228; 1966, 99, 35; 1223; 3201; 3433; 1971, 104, 961; 1975, 108, 440; 1976, 109, 3956, (分離, 構造決定, 生育, 生合成)

Schulte, K.E. et al., Phytochemistry, 1965, 4, 481, (分離)

Schulte, K.E. et al., Arch. Pharm. (Weinheim, Ger.), 1966, 299, 468; 1970, 303, 7, (分離, 構造決定, IR, UV, H-NMR, ガスクロマト)

Bohlmann, F. et al., Chem. Ber., 1967, 100, 1944, (epoxides, 分離, 構造決定)

Chin, C. et al., J.C.S. (C), 1970, 314, (分離)

Ichihana, K. et al., Agric. Biol. Chem., 1975, 39, 1103, (分離, UV, H-NMR, IR)

Bedford, C.T. et al., J.C.S. Perkin 1, 1976, 735, (分離)

Anderson, A.B. et al., Phytochemistry, 1977, 16, 1829, (分離)

Binder, R.G. et al., Phytochemistry, 1978, 17, 315, (分離, Mass, UV, H-NMR)

Bohlmann, F. et al., Phytochemistry, 1978, 17, 1666; 1979, 18, 99; 1980, 19, 692; 1983, 22, 1281, (分離)

§ 1,11-Tridecadiene-3,5,7,9-tetrayne; (Z)-form

[CAS No.] 59950-58-2

[化合物分類] 脂肪族化合物 (Acetylenic hydrocarbons)

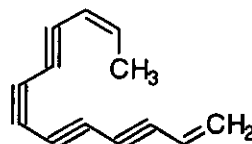
[構造式]

[分子式] $C_{13}H_{18}$

[分子量] 164.206

[基原] 次の植物から分離: *Dahlia* sp. の根, *Coreopsis* sp., *Carthamus tinctorius*

[性状] オイル



-----文献-----

Sorensen, J.S. et al., Acta Chem. Scand., 1954, 8, 1741, (分離, IR)

Bohlmann, F. et al., Chem. Ber., 1958, 91, 1642; 1962, 95, 1315; 1964, 97, 1193; 2583; 1965, 98, 872; 1228; 1966, 99, 35; 1223; 3201; 3433; 1971, 104, 961; 1975, 108, 440; 1976, 109, 3956, (分離, 構造決定, 生育, 生合成)

Jones, E.R.H. et al., J.C.S., 1958, 1054, (合成法, UV, IR, ガスクロマト)

Schulte, K.E. et al., Phytochemistry, 1965, 4, 481, (分離)

Schulte, K.E. et al., Arch. Pharm. (Weinheim, Ger.), 1966, 299, 468; 1970, 303, 7, (分離, 構造決定, IR,

UV, H-NMR, ガスクロマト)

Bohlmann, F. et al., Chem. Ber., 1967, 100, 1944, (epoxides, 分離, 構造決定)

Chin, C. et al., J.C.S. (C), 1970, 314, (分離)

Ichihana, K. et al., Agric. Biol. Chem., 1975, 39, 1103, (分離, UV, H-NMR, IR)

Bedford, C.T. et al., J.C.S. Perkin 1, 1976, 735, (分離)

Anderson, A.B. et al., Phytochemistry, 1977, 16, 1829, (分離)

Binder, R.G. et al., Phytochemistry, 1978, 17, 315, (分離, Mass, UV, H-NMR)

Bohlmann, F. et al., Phytochemistry, 1978, 17, 1666; 1979, 18, 99; 1980, 19, 692; 1983, 22, 1281, (分離)

§ 3,11-Tridecadiene-5,7,9-tri-ene-1,2-diol; (R,E,E)-form

[化学名・別名] Safynol

[CAS No.] 27978-14-9

[化合物分類] 脂肪族化合物 (Acetylenic alcohols)

[構造式]

[分子式] $C_{13}H_{12}O_2$

[分子量] 200.237

[基原] 次の植物から分離: 病気にかかった *Carthamus tinctorius*, *Bidens* spp., *Centaurea* spp.

[用途] 抗カビ, antibiotic phytoalexin

[性状] 結晶 (Et₂O/petrol or CHCl₃/hexane)

[融点] Mp 122.5-123 °C (112 °C)

[比旋光度]: $[\alpha]_D^{20}$ -17 (MeOH)

UV: [neutral] λ_{max} 215 ; 225 ; 235 ; 246 ; 255 ; 269 (ϵ 61600); 290 ; 309 ; 330 ; 354 (EtOH) (Berdy)

[その他のデータ] An opt. rotn. of $[\alpha]_D^{25}$ +38 (MeOH) is given without explanation by Bohlmann for a prod. from saponification of the natural monoacetate. Stable in dark at -18 °C, resinifies in air

-----文献-----

Bohlmann, F. et al., Chem. Ber., 1958, 91, 1642; 1959, 92, 1319; 1961, 94, 3179; 1964, 97, 520, (分離, 構造決定, 合成)

Thomas, C.A. et al., Phytopathology, 1970, 60, 261, (分離)

Allen, E.H. et al., Phytochemistry, 1971, 10, 1579, (分離)

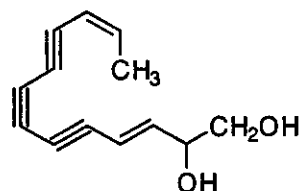
Nakada, H. et al., Agric. Biol. Chem., 1977, 41, 1761, (合成法, 絶対構造)

Jente, R. et al., Phytochemistry, 1979, 18, 829, (分離, 構造決定, Mass, UV, H-NMR)

MacRae, W.D. et al., Experientia, 1980, 36, 1096, (薬理)

Bauer, R. et al., Phytochemistry, 1992, 31, 2035, (2-glucosides)

Redl, K. et al., Planta Med., 1994, 60, 58, (Safynol 2-isobutyrate)



§ 1,3,5,11-Tridecatetraene-7,9-diyne; (E,E,E)-form

[CAS No.] 17091-00-8

[化合物分類] 脂肪族化合物 (Acetylenic hydrocarbons)

[構造式]

[分子式] $C_{13}H_{12}$

[分子量] 168.238

[基原] 次の植物から分離: *Bidens aurea*, *Carlina* sp., *Carthamus*

tinctorius, *Coreopsis* sp., *Centaurea scabiosa*

[性状] わずかに黄色の結晶 (petrol)

[融点] Mp 71-72 °C

[その他のデータ] 容易に酸化され重合する

-----文献-----

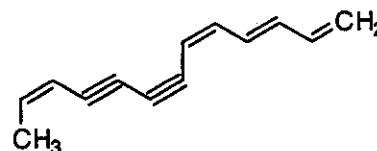
Sorensen, J.S. et al., Acta Chem. Scand., 1954, 8, 1741, (分離)

Ichihara, K. et al., Agric. Biol. Chem., 1975, 39, 1103, (分離, 構造決定, 成書)

Andersen, A.B. et al., Phytochemistry, 1977, 16, 1829, (分離)

Binder, R.G. et al., Phytochemistry, 1978, 17, 315, (分離, 構造決定, H-NMR, Mass)

Guillet, G. et al., Phytochemistry, 1997, 45, 695, (分離, UV, H-NMR, C13-NMR)



§ 1,3,5,11-Tridecatetraene-7,9-diyne; (3E,5Z,11E)-form

[CAS No.] 63366-81-4

[化合物分類] 脂肪族化合物 (Acetylenic hydrocarbons)

[構造式]

