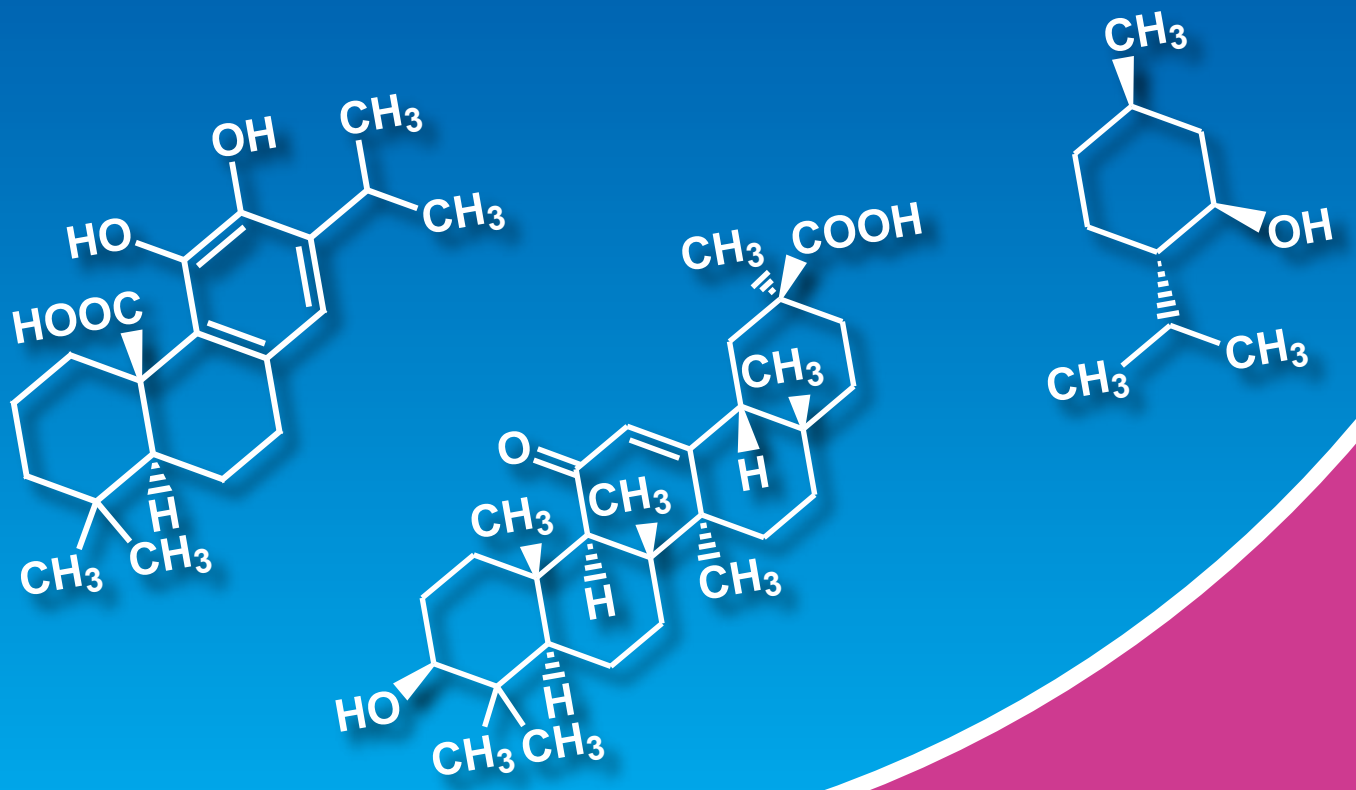
LIFE SCIENCE

TCI

Terpenes



Hemiterpenes

Acyclic Monoterpenes

Monocyclic Monoterpenes

Bicyclic Monoterpenes

Sesquiterpenes

Diterpenes

Triterpenes

Other Terpenes

Terpenes

Terpenes are a large family of natural products and are known to be the primary constituents of essential oils. They are biosynthesized via the mevalonate pathway. The basic structure is derived from five-carbon isoprene units[1,2] which are linked together in a head-to-tail fashion to form linear chains or rings. They can be classified on the basis of the length of the carbon chains as illustrated below.

Table 1. Classification of Terpenes and Examples

Name	Number of Carbons	Examples
Hemiterpenes	5	Isoprene
Monoterpenes	10	Menthol, Geraniol: Flavors, Food Additives
Sesquiterpenes	15	Artemisinin: Antimalarial Drug α-Bisaborol: Flavor, Cosmetic Ingredients
Diterpenes	20	Paclitaxel: Antitumor Agent, Gibberellins: Plant Hormones
Triterpenes	30	Lanosterol: Precursor of Steroid Biosynthesis

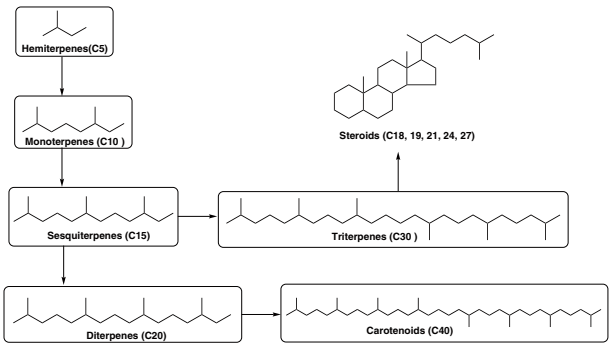


Figure 1. Biosynthetic Pathway of Terpene Skeletons

Terpenes are widespread in nature existing in marine organisms as well as in plants. Some terpenes show characteristic bioactivity such as antitumor activities, and their modes of action is currently under investigation. Since terpenes are mainly found in plants, they are frequently used as markers in plant metabolome analyses.

Nomenclature

According to the IUPAC Nomenclature Appendix, 42 parent skeletons are shown.[3] Practically, other common names are also used frequently. For further trivial names, please refer to References.[2,4]

Solubility

In general, most of the terpenes are insoluble in water but soluble in ethanol, chloroform and diethyl ether. They can be added to the buffer solution as a dimethyl sulfoxide solution to examine their activity in living organisms. Please take caution that the solution becomes suspended as the concentration level of the dissolved substance increases. It is recommended to define the optimal concentration level and volume of addition in advance. Glycosides of terpenes are more water-soluble than their aglycones.

Stability

In general, monoterpenes are relatively stable. However, oily sesquiterpenes and diterpenes are less stable bearing more oxygen fuctional groups rendering them unsuitable for storage over longer periods. However, most of the triterpenes are solid and show good stability.

Detection

Since some terpenes do not have chromophore unit, UV detection by normal-phase HPLC is difficult. As a result, RI (refractive index) detector can be used instead. Normal-phase TLC is also frequently used to visualize terpenes by spraying them with phosphomolybdic acid solution or cerium sulfate solution followed by heating.

Some Tips

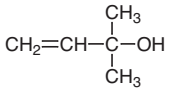
- Monoterpenes and some sesquiterpenes form azeotropic mixtures with the traces of water present in the sample, leading to a considerable loss during distillation. It is therefore recommended that these terpenes should be properly dried prior to their use using the following procedure:
  (1) dissolution of the sample in an appropriate organic solvent (2) drying it over anhydrous sodium or magnesium sulfate and (3) removal of the solvent in vacuo.
- In NMR measurement, using two different solvents separately, deuteriochloroform ($CDCl_3$) and benzene-d6 (C_6D_6), may change the signal patterns to facilitate interpretation of the spectrum (mainly for proton). In addition, some hidden signals might also appear owing to the variation in the residual water signal positions.
- During storage over longer periods, $CDCl_3$ might partially decompose to form phosgene which can damage your precious sample. Therefore care should be taken especially while using $CDCl_3$ with high deuterium ratio (no less than 99.95%D). The sample should not be stored in the NMR tube as a solution after its analysis but recovered from the tube and the solvent should be evaporated completely to prevent its decomposition.

References

1) P. M. Dewick, in *Medicinal Natural Products*, 3rd ed., John Wiley & Sons, Chichester, **2009**, p. 187.
2) E. Breitmaier, in *Terpenes*, Wiley-VCH, Weinheim, **2006**.
3) P. M. Gills Jr., *Pure. Appl. Chem*. **1999**, *71*, 587.
4) a) For Sesquiterpenes: B. M. Fraga, *Nat. Prod. Rep*. **2008**, *25*, 1180.
b) For Diterpenes: J. R. Hanson, *Nat. Prod. Rep*. **2007**, *24*, 1332.
c) For Triterpenes: J. D. Connolly, R. A. Hill, *Nat. Prod. Rep*. **2008**, *25*, 794.

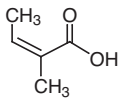
Hemiterpenes

M0178 25mL 500mL



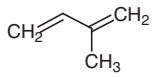
2-Methyl-3-buten-2-ol
CAS RN: 115-18-4

A1136 1g 5g



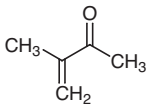
Angelic Acid
CAS RN: 565-63-9

I0160 25mL 500mL



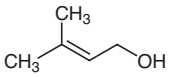
Isoprene
(stabilized with TBC)
CAS RN: 78-79-5

M0378 25mL



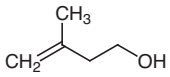
3-Methyl-3-buten-2-one
(stabilized with HQ)
CAS RN: 814-78-8

M0714 25mL 100mL 500mL



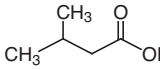
3-Methyl-2-buten-1-ol
CAS RN: 556-82-1

M0726 25mL 100mL 500mL



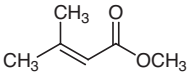
3-Methyl-3-buten-1-ol
CAS RN: 763-32-6

M0182 25mL 500mL



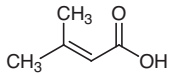
Isovaleric Acid
CAS RN: 503-74-2

M2052 25g



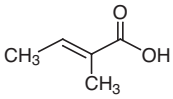
Methyl 3,3-Dimethylacrylate
CAS RN: 924-50-5

M0543 25g 100g 500g



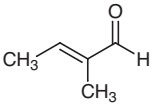
3-Methylcrotonic Acid
CAS RN: 541-47-9

T0246 25g 100g



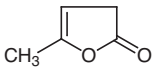
Tiglic Acid
CAS RN: 80-59-1

T1003 5mL 25mL



trans-2-Methyl-2-butenal
CAS RN: 497-03-0

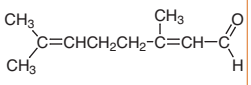
A1090 25g 100g



α-Angelicalactone
CAS RN: 591-12-8

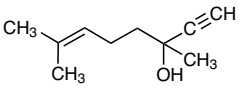
Acyclic Monoterpenes

D0762 25mL



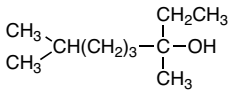
Citral (*cis*- and *trans*- mixture)
CAS RN: 5392-40-5

D5752 25mL 100mL



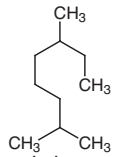
(±)-Dehydrolinalool
CAS RN: 29171-20-8

T0991 25mL 500mL



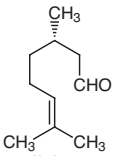
Tetrahydrolinalool
CAS RN: 78-69-3

D1212 1mL



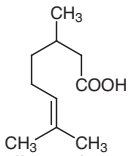
2,6-Dimethyloctane
CAS RN: 2051-30-1

C1454 5mL 25mL



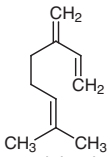
(-)-Citronellal
CAS RN: 5949-05-3

C1708 25mL



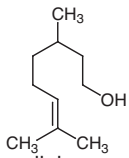
Citronellic Acid
CAS RN: 502-47-6

M0235 25mL 500mL



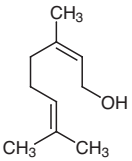
Myrcene (stabilized with BHT)
CAS RN: 123-35-3

C0370 25mL 100mL 500mL



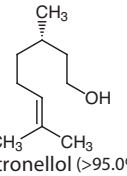
β-Citronellol
CAS RN: 106-22-9

N0077 25mL 500mL



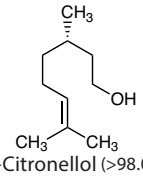
Nerol
CAS RN: 106-25-2

C1466 25mL



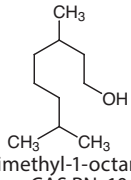
(-)-β-Citronellol (>95.0%)
CAS RN: 7540-51-4

C3619 5mL 25mL



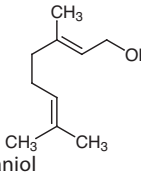
(-)-β-Citronellol (>98.0%)
CAS RN: 7540-51-4

D1442 25mL 500mL



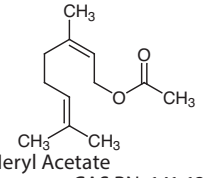
3,7-Dimethyl-1-octanol
CAS RN: 106-21-8

G0027 25mL 100mL 500mL



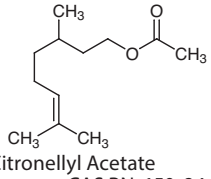
Geraniol
CAS RN: 106-24-1

N0463 25mL



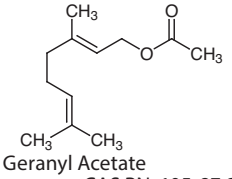
Neryl Acetate
CAS RN: 141-12-8

C0915 25mL



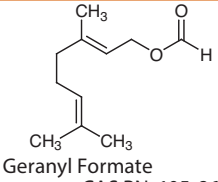
Citronellyl Acetate
CAS RN: 150-84-5

G0028 25mL 100mL 500mL



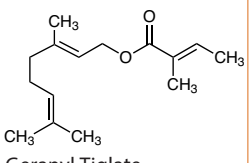
Geranyl Acetate
CAS RN: 105-87-3

G0218 25mL



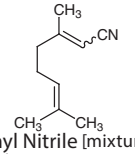
Geranyl Formate
CAS RN: 105-86-2

G0430 5mL 25mL



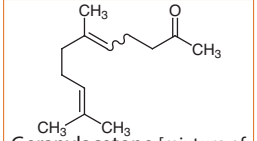
Geranyl Tiglate
CAS RN: 7785-33-3

G0241 25mL



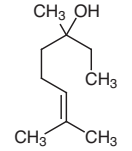
Geranyl Nitrile [mixture of (*E*)- and (*Z*)- isomers, (1:1)]
CAS RN: 5146-66-7

G0236 25mL



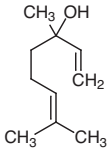
Geranylacetone [mixture of (*E*)- and (*Z*)- isomers, (3:2)]
CAS RN: 689-67-8

D1592 25mL 500mL



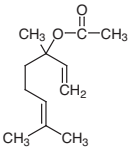
Dihydrolinalool
CAS RN: 18479-51-1

L0048 25mL 500mL



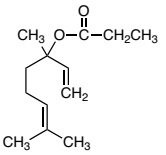
Linalool
CAS RN: 78-70-6

L0049 25mL 500mL



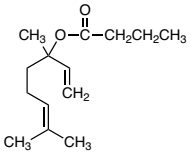
Linalyl Acetate
CAS RN: 115-95-7

L0265 25mL



Linalyl Propionate
CAS RN: 144-39-8

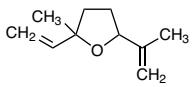
L0275 5mL



Linalyl Butyrate
CAS RN: 78-36-4

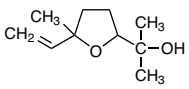
Monocyclic Monoterpenes

I0744 25g



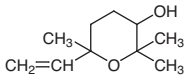
Dehydroxylinalool Oxide
(mixture of isomers)
CAS RN: 13679-86-2

L0143 25mL



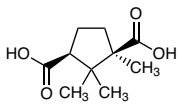
Linalool Oxide
(mixture of isomers)
CAS RN: 60047-17-8

T2605 25g



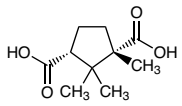
Linalool Oxide Pyranoid
(mixture of isomers)
CAS RN: 14049-11-7

C0012 25g 100g



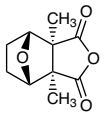
(+)-Camphoric Acid
CAS RN: 124-83-4

C3237 1g



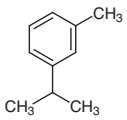
(1*S*,3*R*)-(-)-Camphoric Acid
CAS RN: 560-09-8

C0019 25mg 100mg



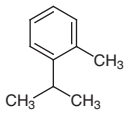
Cantharidin
CAS RN: 56-25-7

C0798 0.1mL 1mL



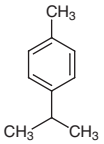
m-Cymene
CAS RN: 535-77-3

C0799 0.1mL



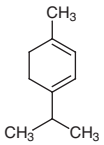
o-Cymene
CAS RN: 527-84-4

C0513 25mL 500mL



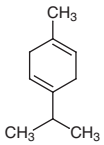
p-Cymene
CAS RN: 99-87-6

M0317 25mL 500mL



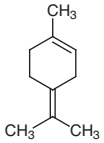
α-Terpinene
CAS RN: 99-86-5

M0318 25mL 500mL



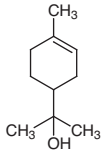
γ-Terpinene
CAS RN: 99-85-4

T0817 25mL 500mL



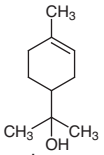
Terpinolene
CAS RN: 586-62-9

T0022 25mL 500mL



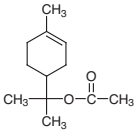
α-Terpineol (>80.0%)
CAS RN: 98-55-5

T0984 25mL 100mL 500mL



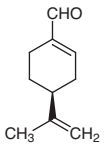
α-Terpineol (>95.0%)
CAS RN: 98-55-5

T0023 25mL 500mL



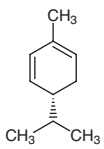
Terpinyl Acetate
(mixture of isomers)
CAS RN: 80-26-2

P0866 5mL 25mL



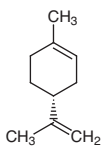
(-)-Perillaldehyde
CAS RN: 18031-40-8

M0051 5mL 25mL



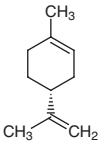
(-)-α-Phellandrene
CAS RN: 4221-98-1

L0047 25mL 500mL



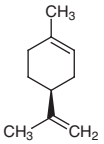
(+)-Limonene (>95.0%)
CAS RN: 5989-27-5

L0105 5mL 25mL



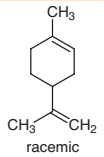
(+)-Limonene (>99.0%)
CAS RN: 5989-27-5

L0132 5mL 25mL 500mL



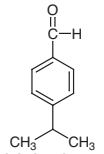
(-)-Limonene (>95.0%)
CAS RN: 5989-54-8

L0046 25mL 500mL



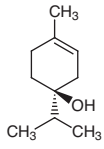
racemic
(±)-Limonene
CAS RN: 138-86-3

I0168 25g 500g



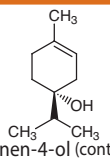
Cuminaldehyde
CAS RN: 122-03-2

T2581 5g 25g



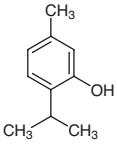
(+)-Terpinen-4-ol
CAS RN: 2438-10-0

M0319 25mL



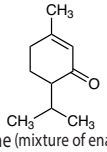
(-)-Terpinen-4-ol (contains 30% (+)-Terpinen-4-ol at maximum)
CAS RN: 20126-76-5

M0410 25g 500g



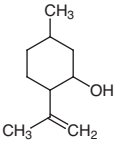
Thymol
CAS RN: 89-83-8

P1783 25g 100g



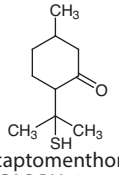
Piperitone (mixture of enantiomers, predominantly (*R*)-(-)-form)
CAS RN: 4573-50-6

M0320 25mL



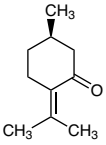
Isopulegol (mixture of isomers)
CAS RN: 7786-67-6

M2023 5g



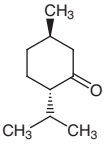
8-Mercaptomenthone
CAS RN: 38462-22-5

P2331 5mL 25mL



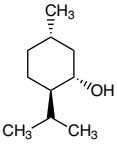
(+)-Pulegone
CAS RN: 89-82-7

M0513 25mL 100mL 500mL



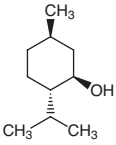
(-)-Menthone
CAS RN: 14073-97-3

M3170 25g 100g



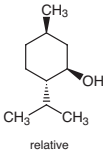
(+)-Menthol
CAS RN: 15356-60-2

M0545 25g 100g 500g



(-)-Menthol
CAS RN: 2216-51-5

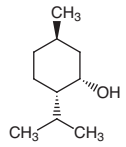
M0321 25mL 100mL 500mL



relative
(±)-Menthol
CAS RN: 89-78-1

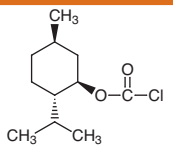
Please inquire for pricing and availability of listed products to our local sales representatives.

N0626 5mL 25mL



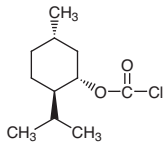
(+)-Neomenthol
CAS RN: 2216-52-6

M0990 5mL 25mL



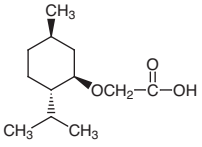
(-)-Menthyl Chloroformate
CAS RN: 14602-86-9

M1221 5mL 25mL



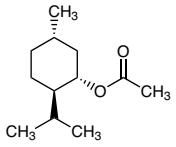
(+)-Menthyl Chloroformate
CAS RN: 7635-54-3

M0573 5g 25g



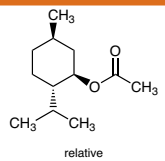
(-)-Menthoxyacetic Acid
CAS RN: 40248-63-3

M2631 1mL 5mL



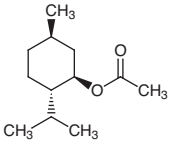
(+)-Menthyl Acetate
CAS RN: 5157-89-1

M3399 25g



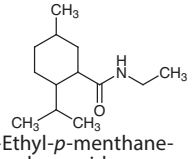
relative
(±)-Menthyl Acetate
CAS RN: 89-48-5

A1107 25mL



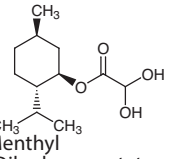
(-)-Menthyl Acetate
CAS RN: 2623-23-6

E0796 5g 25g



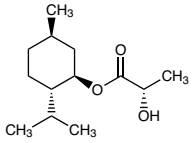
N-Ethyl-*p*-menthane-3-carboxamide
CAS RN: 39711-79-0

I0790 25g



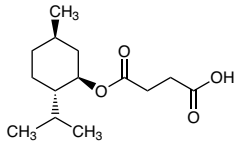
(-)-Menthyl 2,2-Dihydroxyacetate
CAS RN: 111969-64-3

I0889 5g 25g



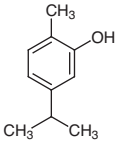
L-Menthyl L-Lactate
CAS RN: 61597-98-6

M2482 25g



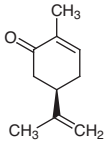
(-)-Menthyl Succinate
CAS RN: 77341-67-4

C0026 25g 100g 500g



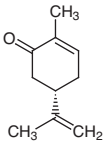
Carvacrol
CAS RN: 499-75-2

C0703 25mL 100mL 500mL



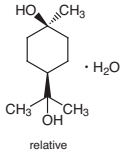
(*R*)-(-)-Carvone
CAS RN: 6485-40-1

C0704 25mL



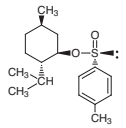
(*S*)-(-)-Carvone
CAS RN: 2244-16-8

T2344 25g



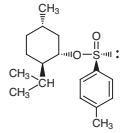
relative
Terpin Monohydrate
CAS RN: 2451-01-6

M1044 5g 25g



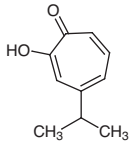
(1*R*,2*S*,5*R*)-(-)-Menthyl (*S*)-*p*-Toluenesulfinate
CAS RN: 1517-82-4

M1066 1g 5g



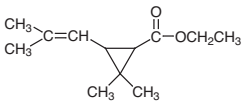
(1*S*,2*R*,5*S*)-(+)-Menthyl (*R*)-*p*-Toluenesulfinate
CAS RN: 91796-57-5

H0142 1g 5g



Hinokitiol
CAS RN: 499-44-5

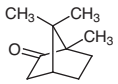
D2112 25g 100g



Ethyl Chrysanthemate
CAS RN: 97-41-6

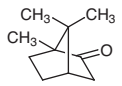
Bicyclic Monoterpenes

C0010 25g 500g



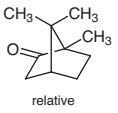
(+)-Camphor
CAS RN: 464-49-3

C1251 5g



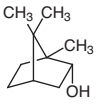
(-)-Camphor
CAS RN: 464-48-2

C0011 25g 500g



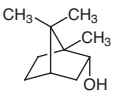
relative
(±)-Camphor
CAS RN: 76-22-2

B1012 25g 500g



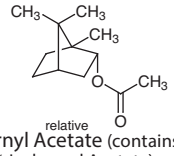
(-)-Borneol
CAS RN: 464-45-9

B0525 25g 500g



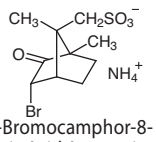
relative
Borneol
(contains *ca.* 20% Isoborneol)
CAS RN: 507-70-0

B0526 25mL



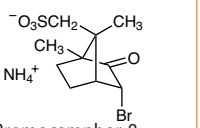
relative
Bornyl Acetate (contains *ca.* 20% Isobornyl Acetate)
CAS RN: 5655-61-8

B1125 5g 25g



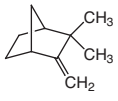
(+)-3-Bromocamphor-8-sulfonic Acid Ammonium Salt
CAS RN: 14575-84-9

B4412 1g 5g



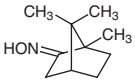
(-)-3-Bromocamphor-8-sulfonic Acid Ammonium Salt
CAS RN: 55870-50-3

C0009 25g 100g



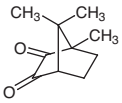
relative
(±)-Camphene
(contains *ca.* 20% Tricyclene)
CAS RN: 79-92-5

C0013 1g 5g 25g



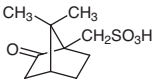
(1*R*)-Camphor Oxime
CAS RN: 2792-42-9

C0014 5g 25g



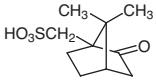
relative
(±)-Camphorquinone
CAS RN: 10373-78-1

C0015 25g 100g 500g



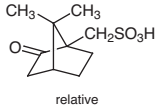
(+)-10-Camphorsulfonic Acid
CAS RN: 3144-16-9

C0972 25g 100g 500g



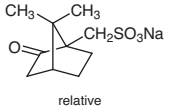
(-)-10-Camphorsulfonic Acid
CAS RN: 35963-20-3

C0016 25g 100g 500g



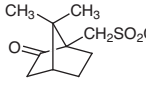
relative
(±)-10-Camphorsulfonic Acid
CAS RN: 5872-08-2

C0017 25g



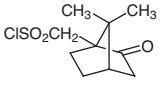
relative
Sodium
(±)-10-Camphorsulfonate
CAS RN: 34850-66-3

C0998 5g 25g



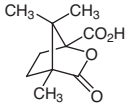
(+)-10-Camphorsulfonyl Chloride
CAS RN: 21286-54-4

C1308 5g 25g



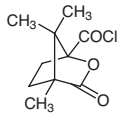
(-)-10-Camphorsulfonyl Chloride
CAS RN: 39262-22-1

C1021 1g 5g



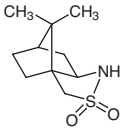
(-)-Camphanic Acid
CAS RN: 13429-83-9

C1022 1g 5g 25g



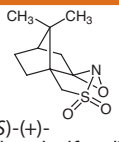
(-)-Camphanic Chloride
CAS RN: 39637-74-6

C1325 1g 5g



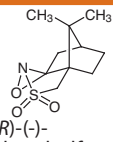
(-)-10,2-Camphorsultam
CAS RN: 94594-90-8

C1326 1g 5g



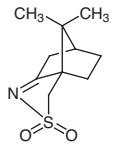
(2*R*,8a*S*)-(+)-(Camphorylsulfonyl)-oxaziridine
CAS RN: 104322-63-6

C1327 1g 5g



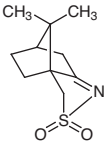
(2*S*,8a*R*)-(-)-(Camphorylsulfonyl)-oxaziridine
CAS RN: 104372-31-8

C1391 5g



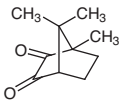
(+)-10-Camphorsulfonimine
CAS RN: 107869-45-4

C1393 5g



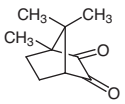
(-)-10-Camphorsulfonimine
CAS RN: 60886-80-8

C1482 1g 5g



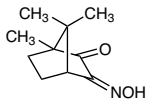
(1*R*)-(-)-Camphorquinone
CAS RN: 10334-26-6

C1660 1g 5g



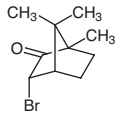
(1*S*)-(+)-Camphorquinone
CAS RN: 2767-84-2

C1661 1g



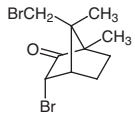
anti-(1*R*)-(+)-Camphorquinone 3-Oxime
CAS RN: 31571-14-9

B0567 25g



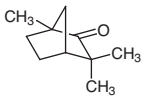
(+)-3-Bromocamphor
CAS RN: 10293-06-8

D2715 5g 25g



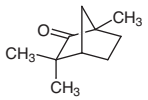
(+)-3,9-Dibromocamphor
CAS RN: 10293-10-4

F0163 25mL



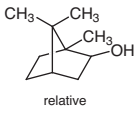
(+)-Fenchone
CAS RN: 4695-62-9

F0164 25mL 500mL



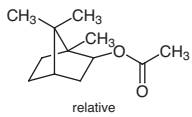
(-)-Fenchone
CAS RN: 7787-20-4

I0275 25g 500g



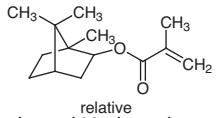
(±)-Isoborneol
CAS RN: 124-76-5

I0306 25mL 500mL



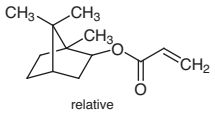
Isobornyl Acetate
CAS RN: 125-12-2

I0617 25g 500g



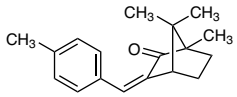
Isobornyl Methacrylate
(stabilized with MEHQ)
CAS RN: 7534-94-3

I0638 25g 500g



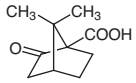
Isobornyl Acrylate
(stabilized with MEHQ)
CAS RN: 5888-33-5

M3357 25g 200g



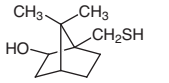
3-(4-Methylbenzylidene)-camphor
CAS RN: 36861-47-9

K0028 1g 5g



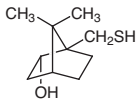
(*S*)-(+)-Ketopinic Acid
CAS RN: 40724-67-2

M1070 1g



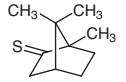
(1*S*)-(-)-10-Mercaptoisoborneol
CAS RN: 71242-58-5

M1341 100mg



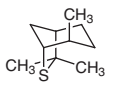
(1*S*)-(-)-10-Mercaptoborneol
CAS RN: 71242-59-6

T1863 1g 5g



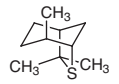
(1*R*)-(-)-Thiocamphor
CAS RN: 53402-10-1

T2578 1g 5g



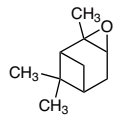
(1*R*,4*R*,5*R*)-4,7,7-Trimethyl-6-thiabicyclo[3.2.1]octane
CAS RN: 5718-75-2

T2579 1g 5g



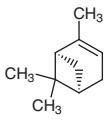
(1*S*,4*S*,5*S*)-4,7,7-Trimethyl-6-thiabicyclo[3.2.1]octane
CAS RN: 1208985-45-8

P1362 25mL 250mL



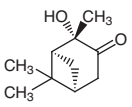
α-Pinene Oxide
CAS RN: 1686-14-2

P1099 25mL 500mL



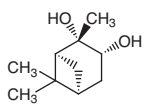
(1*R*)-(+)-α-Pinene
CAS RN: 7785-70-8

H0863 1g 5g



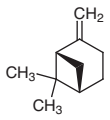
(1*S*,2*S*,5*S*)-(-)-2-Hydroxy-3-pinanone
CAS RN: 1845-25-6

P1934 5g 25g



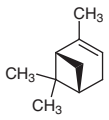
(1*S*,2*S*,3*R*,5*S*)-(+)-2,3-Pinanediol
CAS RN: 18680-27-8

P0441 25mL 500mL



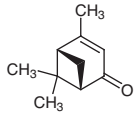
(-)-β-Pinene
CAS RN: 18172-67-3

P0440 25mL 500mL



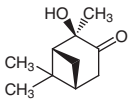
(1*S*)-(-)-α-Pinene
CAS RN: 7785-26-4

V0072 25g



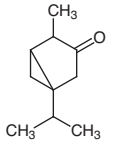
(-)-Verbenone
CAS RN: 1196-01-6

H0862 1g 5g



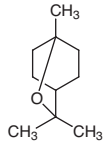
(1*R*,2*R*,5*R*)-(+)-2-Hydroxy-3-pinanone
CAS RN: 24047-72-1

T0989 5mL 25mL



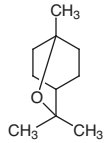
Thujone (α- and β- mixture)
CAS RN: 1125-12-8

C0542 25mL



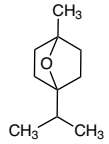
1,8-Cineole (>99.0%)
CAS RN: 470-82-6

C0934 25mL 100mL 500mL



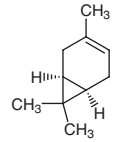
1,8-Cineole (>98.0%)
CAS RN: 470-82-6

C3652 25g 100g



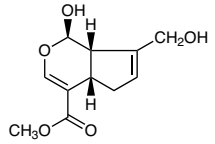
1,4-Cineole
CAS RN: 470-67-7

C0047 25mL 500mL



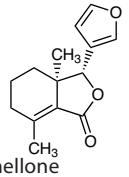
(+)-3-Carene
CAS RN: 498-15-7

G0458 25mg 100mg



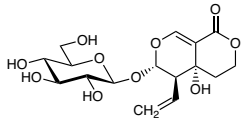
Genipin
CAS RN: 6902-77-8

F1187 10mg 50mg



Fraxinellone
CAS RN: 28808-62-0

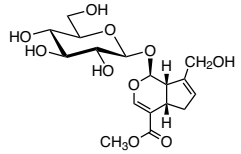
S0897 25mg



Swertiamarin
CAS RN: 17388-39-5

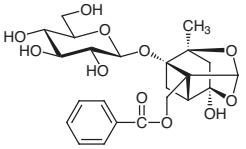
Please inquire for pricing and availability of listed products to our local sales representatives.

G0385 100mg 1g



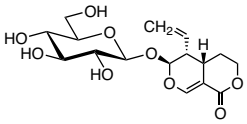
Geniposide
CAS RN: 24512-63-8

P1876 100mg



Paeoniflorin
CAS RN: 23180-57-6

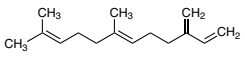
W0022 10mg



(-)-Sweroside
CAS RN: 14215-86-2

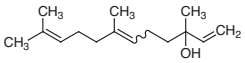
Sesquiterpenes

F1305 250mg 1g



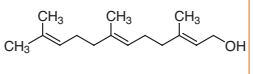
trans-β-Farnesene
CAS RN: 18794-84-8

N0454 25mL



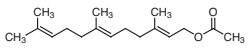
Nerolidol (*cis*- and *trans*- mixture)
CAS RN: 7212-44-4

T0608 5g 25g 100g



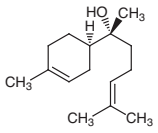
Farnesol (mixture of isomers)
CAS RN: 4602-84-0

F0347 5mL 25mL



Farnesyl Acetate
(mixture of isomers)
CAS RN: 29548-30-9

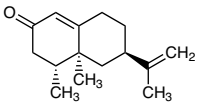
B2119 25mL



relative

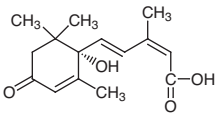
(±)-α-Bisabolol
CAS RN: 515-69-5

N0920 1g



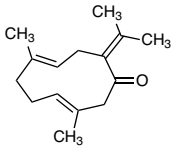
(+)-Nootkatone
CAS RN: 4674-50-4

A1698 100mg



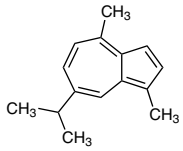
(*S*)-(+)-Abscisic Acid
CAS RN: 21293-29-8

G0519 20mg 100mg



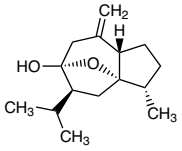
Germacrone
CAS RN: 6902-91-6

G0228 10g



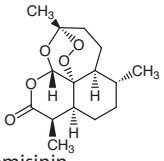
Guaiazulene
CAS RN: 489-84-9

C3439 10mg 50mg



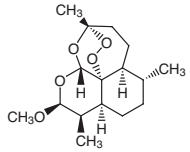
Curcumol
CAS RN: 4871-97-0

A2118 1g 5g



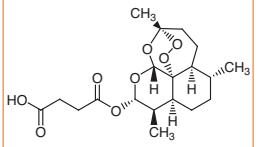
Artemisinin
CAS RN: 63968-64-9

A2190 5g 25g



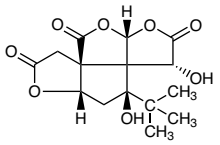
Artemether
CAS RN: 71963-77-4

A2191 5g 25g



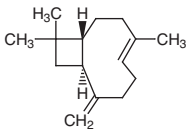
Artesunate
CAS RN: 88495-63-0

B4388 10mg 50mg



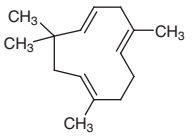
Bilobalide
CAS RN: 33570-04-6

C0796 25mL 100mL 500mL



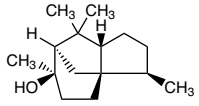
β-Caryophyllene
CAS RN: 87-44-5

C0957 1mL



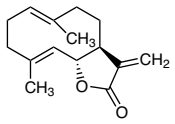
α-Caryophyllene
CAS RN: 6753-98-6

C2854 5g 25g



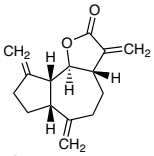
Cedrol
CAS RN: 77-53-2

C2921 25mg 100mg



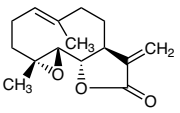
Costunolide
CAS RN: 553-21-9

D5366 10mg 50mg



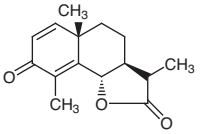
Dehydrocostus Lactone
CAS RN: 477-43-0

P1982 25mg 100mg



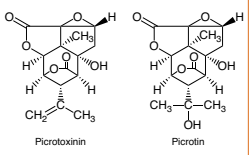
Parthenolide
CAS RN: 20554-84-1

S0521 5g 25g



Santonin
CAS RN: 481-06-1

C0375 1g 5g



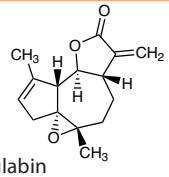
Picrotoxinin Picrotin

Picrotoxin (Picrotoxinin + Picrotin)
CAS RN: 124-87-8

B1413 25mL

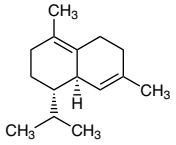
Bisabolene (mixture)

A3449 5mg



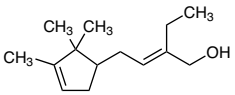
Arglabin
CAS RN: 84692-91-1

C3734 250mg 1g



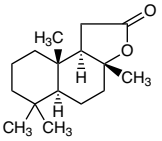
(+)-δ-Cadinene
CAS RN: 483-76-1

E1422 5g 25g



(*E*)-2-Ethyl-4-(2,2,3-trimethylcyclopent-3-en-1-yl)but-2-en-1-ol
CAS RN: 106185-75-5

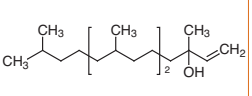
S0847 5g 25g



(3a*R*)-(+)-Sclareolide
CAS RN: 564-20-5

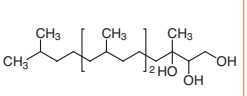
Diterpenes

I0145 25mL 100mL



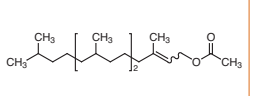
Isophytol
CAS RN: 505-32-8

P1674 5g



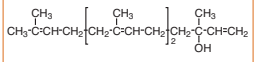
Phytantriol (mixture of isomers)
CAS RN: 74563-64-7

P1675 5g 25g



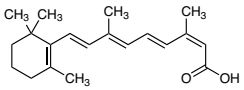
Phytyl Acetate
(*cis*- and *trans*- mixture)
CAS RN: 10236-16-5

G0221 25mL



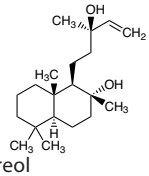
Geranyl-linalool
(mixture of isomers)
CAS RN: 68931-30-6

R0088 100mg 1g



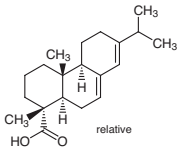
13-*cis*-Retinoic Acid
CAS RN: 4759-48-2

S0916 1g 5g



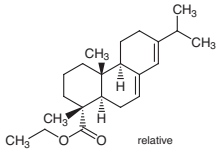
Sclareol
CAS RN: 515-03-7

A0001 25g 500g



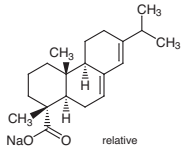
Abietic Acid
CAS RN: 514-10-3

A0002 25g



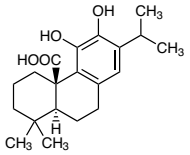
Ethyl Abietate
CAS RN: 631-71-0

A0651 5g 25g



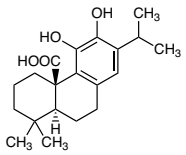
Sodium Abietate
CAS RN: 14351-66-7

C2488 20mg 100mg



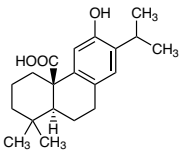
Carnosic Acid (Synthetic)
CAS RN: 3650-09-7

C3477 20mg 100mg



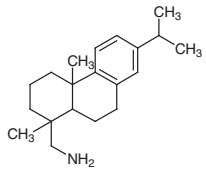
Carnosic Acid
CAS RN: 3650-09-7

P1933 100mg



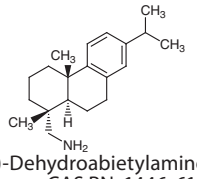
Pisiferic Acid
CAS RN: 67494-15-9

D1180 25g 500g



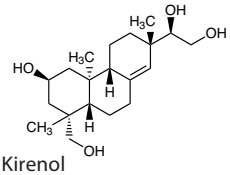
Dehydroabietylamine

D1588 5g 25g



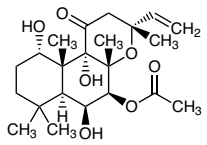
(+)-Dehydroabietylamine
CAS RN: 1446-61-3

K0059 25mg 100mg



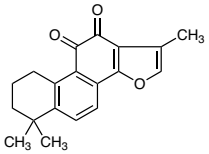
Kirenol
CAS RN: 52659-56-0

F0855 10mg 50mg



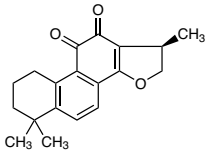
Forskolin
CAS RN: 66575-29-9

T2987 10mg 50mg



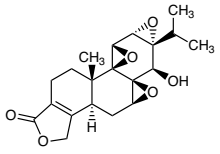
Tanshinone IIA
CAS RN: 568-72-9

C3363 25mg 100mg



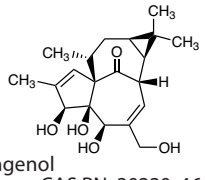
Cryptotanshinone
CAS RN: 35825-57-1

T2899 10mg



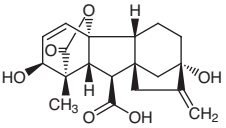
Triptolide
CAS RN: 38748-32-2

I1112 10mg 50mg



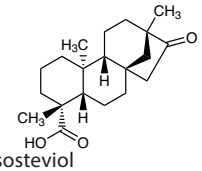
Ingenol
CAS RN: 30220-46-3

G0029 100mg 1g 5g



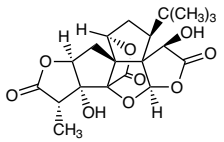
Gibberellin A_3
CAS RN: 77-06-5

I1069 100mg 500mg



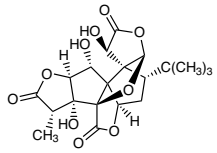
Isosteviol
CAS RN: 27975-19-5

G0521 10mg 50mg



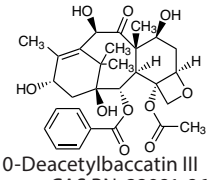
Ginkgolide A
CAS RN: 15291-75-5

G0553 25mg 100mg



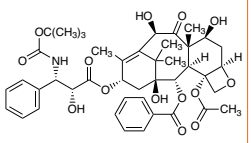
Ginkgolide B
CAS RN: 15291-77-7

D4148 100mg 500mg



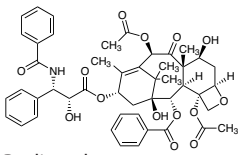
10-Deacetylbaccatin III
CAS RN: 32981-86-5

D4102 100mg 1g



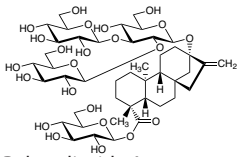
Docetaxel
CAS RN: 114977-28-5

P1632 100mg



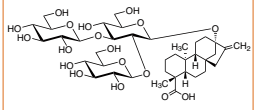
Paclitaxel
CAS RN: 33069-62-4

R0095 5g 25g



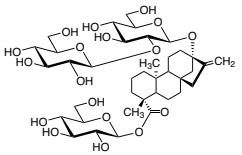
Rebaudioside A
CAS RN: 58543-16-1

R0248 25mg



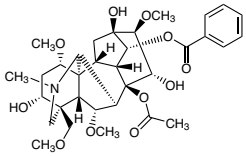
Rebaudioside B
CAS RN: 58543-17-2

S0594 25g



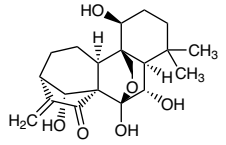
Stevioside
CAS RN: 57817-89-7

M3404 20mg



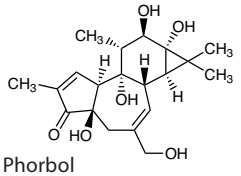
Mesaconitine
CAS RN: 2752-64-9

O0387 50mg



Oridonine
CAS RN: 28957-04-2

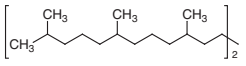
P2732 5mg 25mg



Phorbol
CAS RN: 17673-25-5

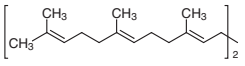
Triterpenes

H0096 25mL 100mL 500mL



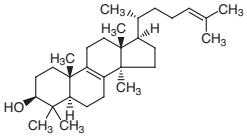
Squalane
CAS RN: 111-01-3

H0097 25mL 100mL 500mL



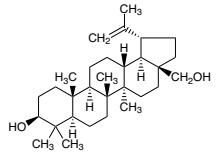
Squalene
CAS RN: 111-02-4

C0427 25g



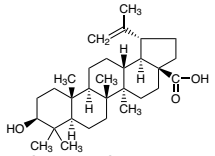
Lanosterol
CAS RN: 79-63-0

B0803 100mg



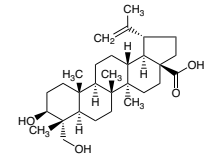
Betulinol
CAS RN: 473-98-3

B2836 100mg 1g



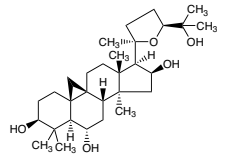
Betulinic Acid
CAS RN: 472-15-1

H1742 5mg 25mg



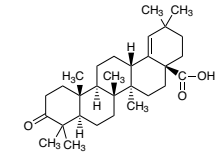
23-Hydroxybetulinic Acid
CAS RN: 85999-40-2

C3469 25mg 100mg



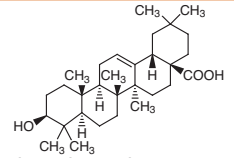
Cycloastragenol
CAS RN: 78574-94-4

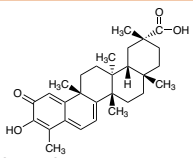
M2610 5mg 25mg

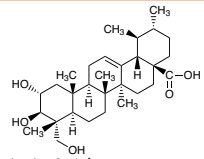


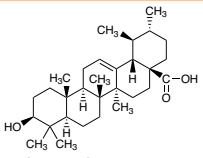
Moronic Acid
CAS RN: 6713-27-5

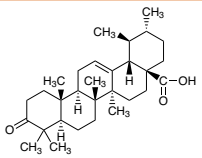
Please inquire for pricing and availability of listed products to our local sales representatives.

O0317 5g 25g

Oleanolic Acid
CAS RN: 508-02-1

C2737 25mg

Celastrol
CAS RN: 34157-83-0

A2475 200mg

Asiatic Acid
CAS RN: 464-92-6

U0065 100mg 1g

Ursolic Acid
CAS RN: 77-52-1

O0508 100mg

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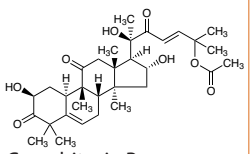
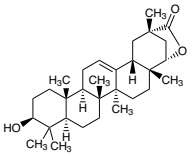
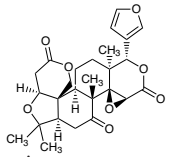
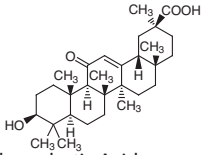
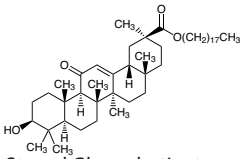
CAS RN: 6246-46-4

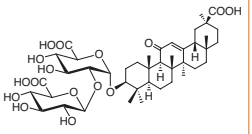
C3442 5mg 25mg

Cucurbitacin B
CAS RN: 6199-67-3

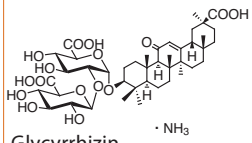
W0011 5mg 25mg

Wilforlide A
CAS RN: 84104-71-2

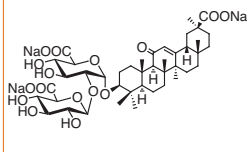
L0258 100mg 1g

Limonin
CAS RN: 1180-71-8

G0149 1g 25g

Glycyrrhetic Acid
CAS RN: 471-53-4

S0988 5g 25g

Stearyl Glycyrrhetinate
CAS RN: 13832-70-7

G0150 1g 25g

Glycyrrhizin
CAS RN: 1405-86-3

G0151 1g 25g

Glycyrrhizin Monoammonium Salt
CAS RN: 53956-04-0

G0217 25g

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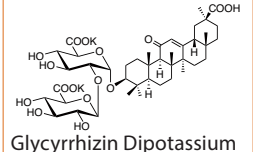
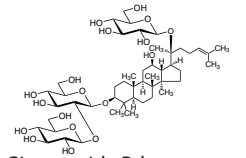
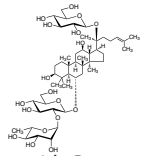
CAS RN: 71277-78-6

G0270 25g

Glycyrrhizin Dipotassium Salt
CAS RN: 68797-35-3

G0550 25mg 100mg

Ginsenoside Rd
CAS RN: 52705-93-8

G0551 50mg 250mg

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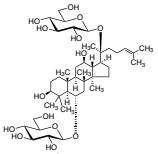
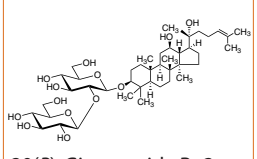
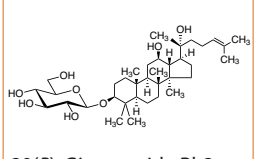
G0533 25mg 100mg

Ginsenoside Rg1
CAS RN: 22427-39-0

G0536 50mg

20(*R*)-Ginsenoside Rg3
CAS RN: 38243-03-7

G0567 5mg 25mg

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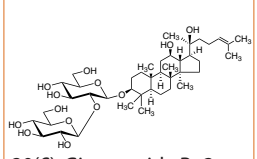
CAS RN: 112246-15-8

G0568 10mg

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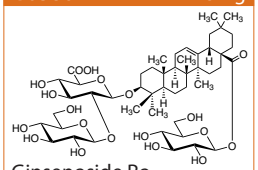
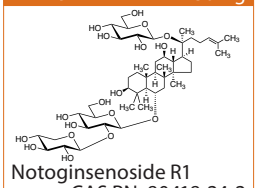
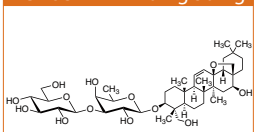
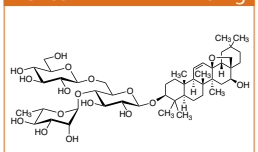
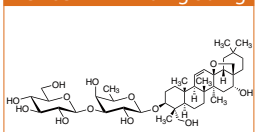
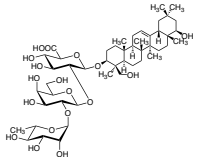
G0586 25mg

Ginsenoside Ro
CAS RN: 34367-04-9

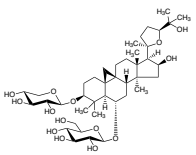
N1129 50mg

Notoginsenoside R1
CAS RN: 80418-24-2

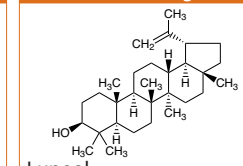
A3408 10mg 50mg

Saikosaponin A
CAS RN: 20736-09-8

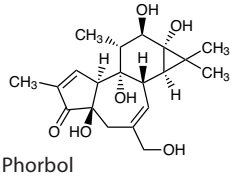
A3189 25mg

Saikosaponin C
CAS RN: 20736-08-7

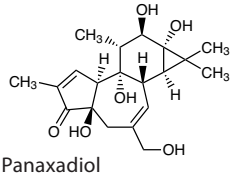
A3405 10mg 50mg

Saikosaponin D
CAS RN: 20874-52-6

O0587 10mg

Soyasaponin I
CAS RN: 51330-27-9

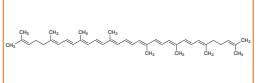
A3305 250mg 1g

Astragaloside IV
CAS RN: 84687-43-4

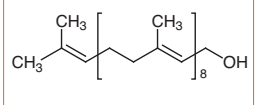
L0321 25mg 100mg

Lupeol
CAS RN: 545-47-1

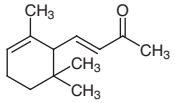
P2732 5mg 25mg

Phorbol
CAS RN: 17673-25-5

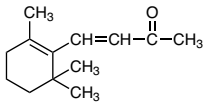
P2811 50mg 250mg

Panaxadiol
CAS RN: 19666-76-3

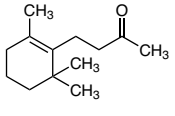
Other Terpenes

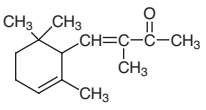
L0257 250mg 1g

Lycopene
CAS RN: 502-65-8

S0525 5g 25g

Solanesol
CAS RN: 13190-97-1

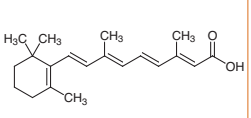
I0076 25g 250g

α-Ionone
CAS RN: 127-41-3

I0077 25mL 100mL 500mL

β-Ionone
CAS RN: 14901-07-6

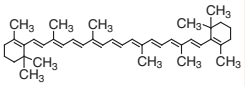
D5751 25g 100g

Dihydro-β-ionone
CAS RN: 17283-81-7

M0647 25mL

α-*iso*-Methylionone
CAS RN: 127-51-5

M0363 25mL
Methylionone
(mixture of α- and β-, predominantly α-*n*-isomer)
CAS RN: 7779-30-8

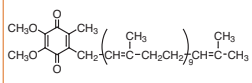
R0064 1g 5g

Retinoic Acid
CAS RN: 302-79-4

C0560 1g 5g



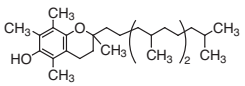
β-Carotene
CAS RN: 7235-40-7

C1971 100mg 1g



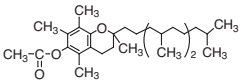
Coenzyme Q_{10}
CAS RN: 303-98-0

T0251 25g 250g



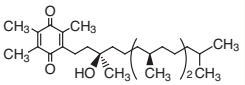
DL-α-Tocopherol
CAS RN: 10191-41-0

T0252 25g 100g 500g



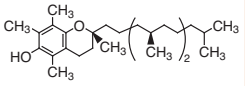
DL-α-Tocopherol Acetate
CAS RN: 7695-91-2

T2283 500mg



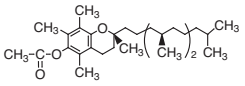
D-α-Tocopherylquinone
CAS RN: 7559-04-8

T2309 25g



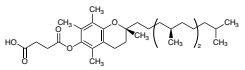
D-α-Tocopherol
CAS RN: 59-02-9

T2322 25g



D-α-Tocopherol Acetate
CAS RN: 58-95-7

T2628 5g 25g



D-α-Tocopherol Succinate
CAS RN: 4345-03-3

C0781 25g

Capsanthin
(=Paprika Extract)
(Vegetable oil solution)
CAS RN: 465-42-9

C1527 25g

Crocin
(Gardenia Fruits Extract)
CAS RN: 42553-65-1

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