Puretitre

Caithness BIOTECHNOLOGIES

Natural compound library

Cat code: PT200

List of library compounds

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Puretitre plate layouts

Plate PT-01

	1	2	3	4	5	6	7	8	9	10	11	12
A	Empty	1	9	17	25	33	41	49	57	65	73	Empty
B	Empty	2	10	18	26	34	42	50	58	66	74	Empty
C	Empty	3	11	19	27	35	43	51	59	67	75	Empty
D	Empty	4	12	20	28	36	44	52	60	68	76	Empty
E	Empty	5	13	21	29	37	45	53	61	69	77	Empty
F	Empty	6	14	22	30	38	46	54	62	70	78	Empty
G	Empty	7	15	23	31	39	47	55	63	71	79	Empty
H	Empty	8	16	24	32	40	48	56	64	72	80	Empty

Plate PT-02

	1	2	3	4	5	6	7	8	9	10	11	12
A	Empty	81	89	97	105	113	121	129	137	145	153	Empty
B	Empty	82	90	98	106	114	122	130	138	146	154	Empty
C	Empty	83	91	99	107	115	123	131	139	147	155	Empty
D	Empty	84	92	100	108	116	124	132	140	148	156	Empty
E	Empty	85	93	101	109	117	125	133	141	149	157	Empty
F	Empty	86	94	102	110	118	126	134	142	150	158	Empty
G	Empty	87	95	103	111	119	127	135	143	151	159	Empty
H	Empty	88	96	104	112	120	128	136	144	152	160	Empty

Plate PT-03

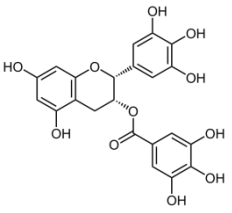
	1	2	3	4	5	6	7	8	9	10	11	12
A	Empty	161	169	177	185	193	Empty	Empty	Empty	Empty	Empty	Empty
B	Empty	162	170	178	186	194	Empty	Empty	Empty	Empty	Empty	Empty
C	Empty	163	171	179	187	195	Empty	Empty	Empty	Empty	Empty	Empty
D	Empty	164	172	180	188	196	Empty	Empty	Empty	Empty	Empty	Empty
E	Empty	165	173	181	189	197	Empty	Empty	Empty	Empty	Empty	Empty
F	Empty	166	174	182	190	198	Empty	Empty	Empty	Empty	Empty	Empty
G	Empty	167	175	183	191	199	Empty	Empty	Empty	Empty	Empty	Empty
H	Empty	168	176	184	192	200	Empty	Empty	Empty	Empty	Empty	Empty

All compounds are provided at 10 mM in DMSO, 100 µl per well.

The following pages list the *Puretitre* compound properties and structures according to the numbering scheme and plate locations shown above.

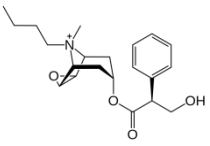
001 - **(-)-Epigallocatechin gallate** MWt - 458.37 CAS - 989-51-5

Epigallocatechin-3-gallate is the ester of epigallocatechin and gallic acid. It is the most abundant catechin in tea, and is used commonly in dietary supplements. It is considered to be a powerful antioxidant with anti-proliferative and immunomodulatory effects in mammalian cells *in vitro*. Some studies report inverse association between EGCG consumption and plasma LDL cholesterol levels.



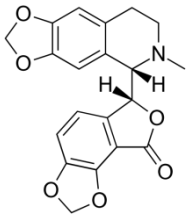
002 - **(-)-Scopolamine N-butyl bromide** MWt - 440.37 CAS - 149-64

Scopolamine butylbromide, also referred to as hyoscine butylbromide, and sold under the brandname Buscopan, is an antispasmodic medication manufactured from hyoscine which occurs naturally in the plant deadly nightshade. It is used to treat abdominal pain, esophageal spasms and renal colic. It acts as an antimuscarinic and anticholinergic agent.



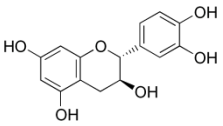
003 - **(+)-Bicuculline** MWt - 367.11 CAS - 485-49-4

Bicuculline is a plant-derived alkaloid and phthalide-isoquinoline. It is an inhibitor of Ca2+-activated potassium channels, and is also a competitive antagonist of GABAA receptors, which are major targets for many anxiolytic drugs.



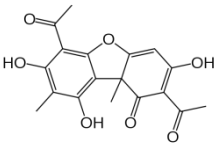
004 - **(+)-Catechin hydrate** MWt - 308.28 CAS - 225937-10-0

Catechin is a plant-derived flavan-3-ol. It is present in many food plants, including tea, cocoa and many traditional medicines. A small number of studies suggest that catechins may modulate endothelium-dependent vasodilation in man. Catechin released into soil is reported to hinder the growth of neighbouring plants. It also exhibits anti-oxidant and anti-infective properties.



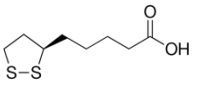
005 - **(+)-Usniacin** MWt - 344.32 CAS - 7562-61-0

(+)-Usniacin (D-usnic acid) is a naturally occurring dibenzofuran derivative found in several lichen species. It has antimicrobial effects against certain Gram-positive bacteria, protozoa and fungi. It is a component of several traditional medicines. It is also used as a preservative in modern toothpastes, mouthwash and other products. Antimitotic and anti-inflammatory properties have also been reported.



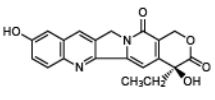
006 - **(R)-(+)-alpha-Lipoic acid** MWt - 206.33 CAS - 1200-22-2

Lipoic acid (α-lipoic acid, thioctic acid), is an organosulfur derivative of caprylic acid. It is essential for aerobic metabolism, and is used as a dietary supplement with antioxidant properties. It has been prescribed to treat diabetic neuropathy, via enhancement of insulin receptor signalling.



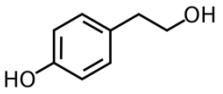
007 - **10-Hydroxycamptothecin** MWt - 364.36 CAS - 64439-81-2

Camptothecin, first isolated from the tree Camptotheca acuminata (used as a cancer treatment in Traditional Chinese Medicine), exhibits topoisomerase inhibitor activity. It was discovered in a systematic screen of natural products for anticancer drugs. It exhibits potent anti-tumour activity by triggering cell cycle arrest in the G2/M phase. The analogues topotecan and irinotecan are approved for use in chemotherapy.



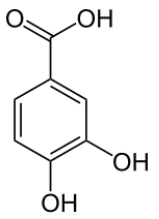
008 - **2-(4-Hydroxyphenyl)ethanol** MWt - 138.16 CAS - 501-94-0

2-(4-Hydroxyphenyl)ethanol (tyrosol) is a natural phenolic antioxidant present in a variety of natural sources. It is most abundant in olive oil and wine. Tyrosol has been reported to increase expression of the cardioprotective protein SIRT1 in rat hearts after myocardial infarction.



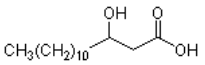
009 - **3,4-Dihydroxybenzoic acid** MWt - 154.03 CAS - 99-50-3

Dihydroxybenzoic acid is a phenolic acid that inhibits cell migration via down-regulation of the Ras/Akt/NF-κB and RhoB pathways. Dihydroxybenzoic acid also exhibits anti-angiogenic and neuroprotective effects *in vitro*, and anti-metastatic properties *in vivo*.



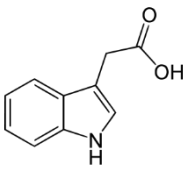
010 - **3-hydroxy myristic acid** MWt - 244.37 CAS - 1961-72-4

3-hydroxy myristic acid is a bacterial metabolite produced by Gram-negative bacteria present in the human gut microbiota. It is an essential component of potently inflammatory lipid A moiety of bacterial lipopolysaccharide. Removal of 3-hydroxy myristic acid from lipopolysaccharide renders the molecule incapable of stimulating TLR4 or inflammatory cytokine production.



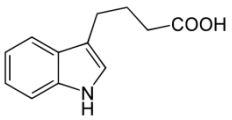
011 - **3-Indoleacetic acid** MWt - 175.19 CAS - 87-51-4

Indole-3-acetic acid is a plant hormone of the auxin class. It is a derivative of indole that exhibits capacity to trigger apoptosis in mammalian cells through activation of the caspases 3, 8 and 9.



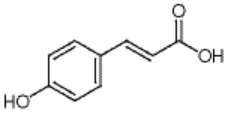
012 - **3-Indolebutyric acid** MWt - 203.24 CAS - 133-32-4

Indole-3-butyric acid is a plant hormone of the auxin class. It is commonly used as a horticultural supplement in plant rooting products.



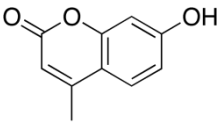
013 - **4-Hydroxycinnamic acid** MWt - 164.16 CAS - 501-98-4

4-Hydroxycinnamic acid (p-Coumaric acid) is one of three isomers of coumaric acid that differ by the position of the hydroxy substitution of the phenyl group. p-Coumaric acid is the most abundant isomer of the three in nature, and is present in numerous food plants. p-Coumaric acid exhibits anti-inflammatory and antimicrobial activity.



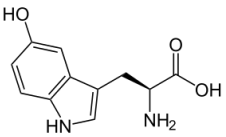
014 - **4-Methylumbelliferone** MWt - 176.17 CAS - 90-33-5

4-methylumbelliferone (Hymecromone) is an antispasmodic drug used in bile therapy. It has also been reported to inhibit the synthesis of hyaluronic acid.



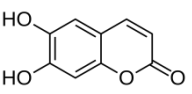
015 - **5-hydroxytryptophan** MWt - 220.22 CAS - 56-69-9

5-Hydroxytryptophan (oxitriptan), is a precursor of the neurotransmitter serotonin. It is sold as a dietary supplement for use as an antidepressant, appetite suppressant, and sleep aid. It has also been reported to the effectiveness of the antidepressant clomipramine.



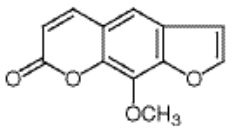
016 - **6,7-Dihydroxycoumarin** MWt - 178.14 CAS - 305-01-1

6,7-dihydroxycoumarin (aesculetin, esculetin, cichorigenin) is a natural lactone present in chicory and in many toxic and medicinal plants. It exhibits anticoagulant effects and is also used in sunscreens. Some reports suggest anti-inflammatory and anti-proliferative properties.



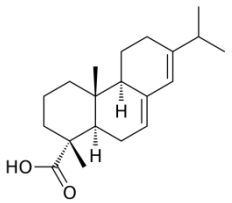
017 - **8-Methoxypsoralen** MWt - 216.19 CAS - 298-81-7

8-Methoxypsoralen (methoxsalen, xanthotoxin), is a phytochemical used as a photoactive drug to treat psoriasis, eczema and vitiligo. It regulates the responses of skin cells to UVA radiation and is also reported to exhibit anti-oxidant properties.



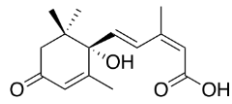
018 - **Abietic acid** MWt - 302.46 CAS - 514-10-3

Abietic acid (abietinic acid, sylvic acid) is a phytochemical commonly found in tree resin. It has been reported to exhibit inhibitory activity against both 5-lipoxygenase and rat testosterone 5α-reductase. Anti-inflammatory properties of abietic acid have also been reported.



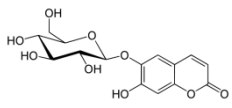
019 - **Abscisic acid** MWt - 264.32 CAS - 21293-29-8

Abscisic acid is a plant hormone involved in plant developmental processes, and also responses to environmental stresses, such as exposure to toxins, drought, salinity and low temperatures.



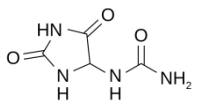
020 - **Aesculin** MWt - 340.28 CAS - 531-75-9

Aesculin (esculin) is a coumarin glucoside found in the seed of the horse chestnut tree (Aesculus hippocastanum). It has been used as a vasoprotective agent, and also in the identification of Group D Streptococci, which hydrolyze aesculin in 40% bile.



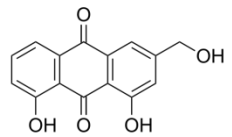
021 - **Allantoin** MWt - 158.12 CAS - 97-59-6

Allantoin (5-ureidohydantoin, glyoxyldiureide), is a diureide of glyoxylic acid. It is a metabolite derived from uric acid, which is present by most organisms including animals, plants and bacteria.



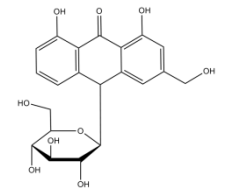
022 - **Aloe-emodin** MWt - 270.24 CAS - 481-72-1

Aloe emodin (1,8-dihydroxy-3-(hydroxymethyl)anthraquinone) is an anthraquinone found in the exudate of Aloe plants. It has been reported to exhibit laxative action and may trigger secretion of interferon cytokines from mammalian cells.



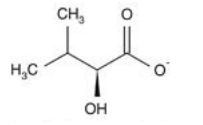
023 - **Aloin** MWt - 418.39 CAS - 1415-73-2

Aloin (barbaloin) is a compound isolated from the exudate of Aloe plants. It is used in small quantities as a food additive, and also in larger quantities to treat constipation by inducing bowel movements. It has also been reported to inhibt the enzyme tyrosinase.



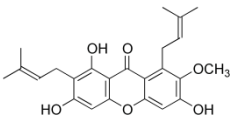
024 - **Alpha-hydroxyisovalerate** MWt - 118.13 CAS - 4026-18-0

Alpha-hydroxyisovalerate is a metabolite found in human plasma. It arises mainly from ketogenesis and from the metabolism of valine, leucine, and isoleucine. Plasma levels of alpha-hydroxyisovalerate have been associated with obesity in children and adults.



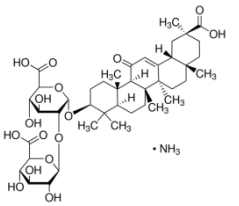
025 - **Alpha-Mangostin** MWt - 410.47 CAS - 1551491

Alpha-Mangostin is a phytochemical and pigment in the xanthone class found in the fruits of *Garcinia mangostana* (mangosteen). It has been reported to exhibit antioxidant, antimicrobial and antitumour activities.



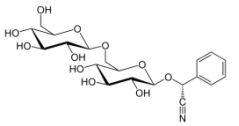
026 - **Ammonium glycyrrhizinate** MWt - 839.96 CAS - 1407-03-0

Ammonium Glycyrrhizinate us a commonly used food additive and flavouring agent isolated from licorice root. It has been reported to exhibit anti-inflammatory activity, and capacity to inhibit 11-beta-hydroxysteroid dehydrogenases. It may also exert lipid lowering effects in rodents.



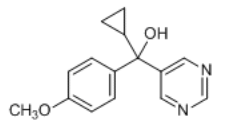
027 - **Amygdalin** MWt - 457.42 CAS - 29883-15-6

Amygdalin is a glycoside found in the seeds of many food plants, including apricot, apple and peach. It has been used historically to treat cancer, although more recent studies suggest it is ineffective for this purpose.



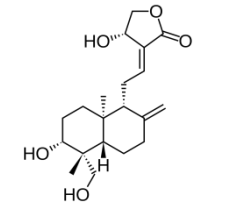
028 - **Ancymidol** MWt - 256.30 CAS - 12771-68-5

Ancymidol (α-cyclopropyl-α-(4-methoxyphenyl)-5-pyrimidinemethanol) is a plant hormone that regulates plant growth.



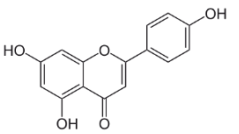
029 - **Andrographolide** MWt - 350.44 CAS - 5508-58-7

Andrographolide is a diterpenoid found in the stem and leaves of the medicinal plant *Andrographis paniculata*. It has been reported to inhibit activity of the pro-inflammatory transcription factor NF-kB through irreversible covalent modification.



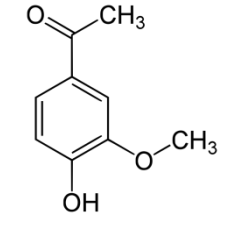
030 - **Apigenin** MWt - 270.24 CAS - 520-36-5

Apigenin (4′,5,7-trihydroxyflavone) is a flavone found in many plants. It is an inhibitor of CYP2C9, and has been reported to trigger autophagy in mammalian cells. It also acts as an activator of HIF-1, monoamine transporter, and PPAR-γ, and an inhibitor of COX-2, PKC and MAPK signalling.



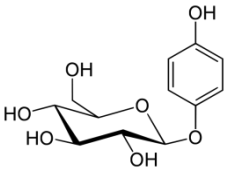
031 - **Apocynin (Acetovanillone)** MWt - 166.17 CAS - 498-02-2

Apocynin (acetovanillone), is found in a variety of plant sources. It is an inhibitor of NADPH oxidase and therefore superoxide production in activated neutrophils. It also exhibits anti-inflammatory properties in various animal models.



032 - **Arbutin (Uva)** MWt - 272.25 CAS - 497-76-7

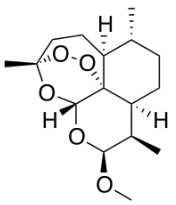
Arbutin (Uva, p-Arbutin) is a glycosylated hydroquinone found in many medicinal plants of the Ericaceae family. It is an inhibitor of tyrosinase and and thus reduces the formation of melanin, so has skin lightening properties.



033 - **Artemether**

MWt - 298.38 CAS - 71963-77-4

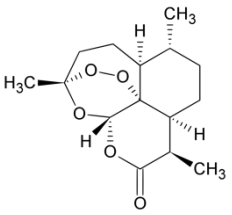
Artemether is an artemisinin derivative medication used for the treatment of malaria, particularly resistant strains of *P. falciparum*. Artemisinin was first isolated from the plant sweet wormwood *(Artemisia annua)*, a herb employed in Chinese traditional medicine for the treatment of malaria.



034 - **Artemisinin**

MWt - 282.33 CAS - 63968-64-9

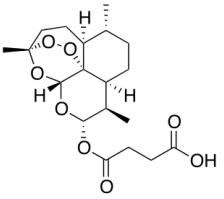
Artemisinin and its derivatives are a group of drugs used to treat *Plasmodium falciparum* malaria. Artemisinin was first isolated from the plant sweet wormwood *(Artemisia annua)*, a herb employed in Chinese traditional medicine for the treatment of malaria. It is a sesquiterpene lactone containing an unusual peroxide bridge. Antiproliferative effects of artemisinins have also been reported.



035 - **Artesunate**

MWt - 384.42 CAS - 88495-63-0

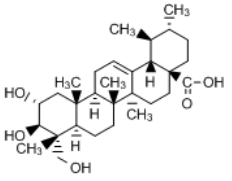
Artesunate is a derivative of artemisinin used to treat malaria. Artemisinin was first isolated from the plant sweet wormwood *(Artemisia annua)*, a herb employed in Chinese traditional medicine for the treatment of malaria. Artesunate has also been reported to exhibit STAT3 inhibitory effects.



036 - **Asiatic acid**

MWt - 488.7 CAS - 464-92-6

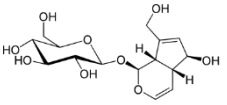
Asiatic acid is a pentacyclic triterpenoid found in *Symplocos lancifolia* and *Vateria indica*. It exhibits anti-angiogenic activity and capacity to inhibit p38 MAP-kinase.



037 - **Aucubin**

MWt - 346.33 CAS - 479-98-1

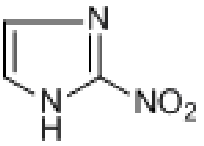
Aucubin is an iridoid glycoside used as a herbivore deterrent and defensive compounds in plants. It is present in many plants used in traditional Chinese and folk medicine. Anti-inflammatory properties have been reported *in vitro*.



038 - **Azomycin**

MWt - 113.07 CAS - 527-73-1

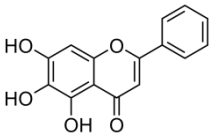
Azomycin (2-Nitroimidazole) is a naturally occuring antibiotic produced by the Gram-positive bacterium *Nocardia mesenterica*.



039 - **Baicalein**

MWt - 270.24 CAS - 491-67-8

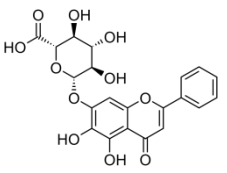
Baicalein (5,6,7-trihydroxyflavone) is a flavone found in the roots of *Scutellaria baicalensis* and *Scutellaria lateriflora*. It is a positive allosteric modulator of the GABAA receptor. Baicalein exhibits anxiolytic effects in mice without sedation or myorelaxation. It is also an inhibitor of CYP2C9, prolyl endopeptidase and certain lipoxygenases. Anti-inflammatory and antiproliferative effects have been reported.



040 - **Baicalin**

MWt - 446.37 CAS - 21967-41-9

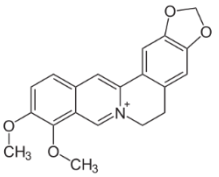
Baicalin is the glucuronide of baicalein. It is found in several species in the genus Scutellaria. Like baicalein, it is a positive modulator of the GABAA receptor and induces anxiolytic effects in mice. It is also a prolyl endopeptidase inhibitor.



041 - **Berberine hydrochloride**

MWt - 371.81 CAS - 633-65-8

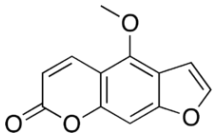
Berberine is a quaternary ammonium salt found in the roots, stems and bark of plants including barberry (*Berberis vulgaris*) and Oregon-grape (*Mahonia aquifolium*). Berberine has been used as a yellow dye to stain wool, leather and wood. It is also used as a histological stain.



042 - **Bergapten**

MWt - 216.19 CAS - 484-20-8

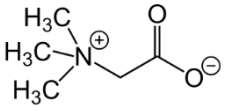
Bergapten (5-methoxypsoralen) is a psoralen found in citrus essential oils, grapefruit juice, figs and parsley. The compound is photosensitizing and causes phototoxicity by covalent modification and cross-linking of DNA, proteins and lipids. Some anti-tumour effects have been reported.



043 - **Betaine**

MWt - 117.15 CAS - 107-43-7

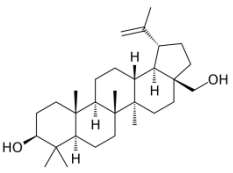
Betaine (trimethylglycine) was first isolated from sugar beets. However, it is also a commonly observed metabolite in human plasma, and circulating levels of this metabolite strongly correlate with risk of coronary artery disease, as revealed by metabolome-wide association studies.



044 - **Betulin**

MWt - 442.72 CAS - 473-98-3

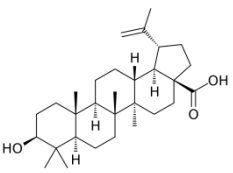
Betulin is a triterpene found in the bark of birch trees. Betulin has been shown to promote apoptosis in some tumour cells, and inhibit synthesis of cholesterol and lipids via inhibition of SREBP activation. Anti-inflammatory properties, via reduced NF-kB activation, have also been reported.



045 - **Betulinic acid**

MWt - 456.70 CAS - 472-15-1

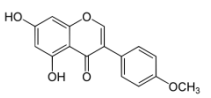
Betulinic acid is a pentacyclic triterpenoid present in the bark of several plants, including birch (Betula pubescens) and selfheal (Prunella vulgaris). Betulin has been reported to exhibit antiretroviral, antimalarial, anti-inflammatory and anti-proliferative properties. It is also an inhibitor of topoisomerase.



046 - **Biochanin A (4-Methylgenistein)**

MWt - 284.26 CAS - 491-80-5

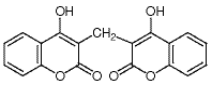
Biochanin A is an O-methylated isoflavone found in red clover, soy, alfalfa, peanuts and chickpea. It is a phytoestrogen with reported potential to inhibit epidermal growth factor receptor signalling.



047 - **Bishydroxycoumarin**

MWt - 336.29 CAS - 66-76-2

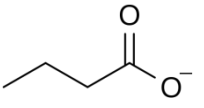
Bishydroxycoumarin (dicoumarol) is a naturally occurring anticoagulant that works by depleting vitamin K. It was once used as a medicinal anticoagulant drug, but has since been replaced by the simpler derivative warfarin.



048 - **Butyrate**

MWt - 88.11 CAS - 107-92-6

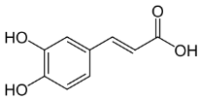
Butyric acid (butanoic acid) is a short-chain fatty acid produced by commensal microbes of the colonic microbiota. It is produced from the fermentation of dietary fibre, and is essential for the health of mammalian colonocytes. There is some evidence it may protect against colon cancer. Butyrate may also inhibit angiogenesis and inflammation.



049 - **Caffeic acid**

MWt - 180.15 CAS - 331-39-5

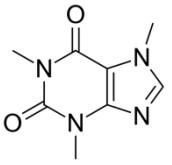
Caffeic acid is a hydroxycinnamic acid found in all woody plants. It is metabolite involved in the synthesis of lignin. Caffeic acid is also found in coffee, thyme, sage and spearmint.



050 - **Caffeine**

MWt - 194.19 CAS - 1958-8-2

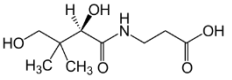
Caffeine is a psychoactive stimulant of the central nervous system. Caffeine reversibly blocks the action of adenosine on its receptor and stimulates elements of the autonomic nervous system. Autonomic effects include increased blood pressure, heart rate and urine output. There is some evidence it may protect against Parkinson's disease.



051 - **Calcium D-Panthotenate**

MWt - 476.53 CAS - 137-08-6

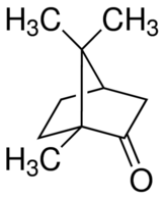
Pantothenic acid (vitamin B5) is a water-soluble B vitamin. It is an essential nutrient in animals, which require it to synthesize coenzyme-A (CoA). It is present in almost all foods.



052 - **Camphor**

MWt - 152.24 CAS - 76-22-2

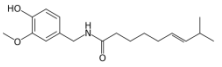
Camphor is a terpenoid with found in rosemary oil (*Rosmarinus officinalis*) and the wood of the camphor laurel (*Cinnamomum camphora*). In traditional medicine, it has been used to treat sprains, swellings and inflammation and as an anti-bacterial agent. It is currently used as an insecticide and insect repellant, and also as a flavouring agent.



053 - **Capsaicin**

MWt - 305.41 CAS - 404-86-4

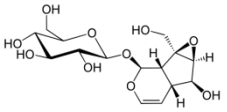
Capsaicin (8-methyl-N-vanillyl-6-nonenamide) is the active component of chili peppers responsible for the burning sensation felt on ingestion via modulation of the TRPV1 channel. Capsaicin may also exhibit anti-fungal properties.



054 - **Catalpol**

MWt - 362.33 CAS - 2415-24-9

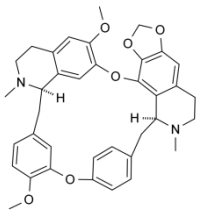
Catalpol is an iridoid glucoside found in plants of the genus Catalpa. It has been reported to express anti-inflammatory (particularly through downregulation of production of inflammatory cytokines) and neuroprotective properties. It induces apoptosis in some tumour cell-lines.



055 - **Cepharanthine**

MWt - 606.71 CAS - 481-49-2

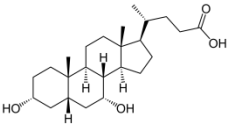
Cepharanthine is a plant alkaloid which exhibits anti-inflammatory, anti-proliferative and anti-oxidant properties. Cepharanthine has also been reported to inhibit tumour growth in mouse models.



056 - **Chenodeoxycholic acid**

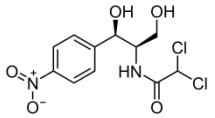
MWt - 392.57 CAS - 474-25-9

Chenodeoxycholic acid (3α,7α-dihydroxy-5β-cholan-24-oic acid, chenocholic acid) is one ot the two primary a bile acids in man. It is a potent activator of the nuclear bile acid receptor, (the farnesoid X receptor), which regulates transcription of many genes, including several involved in cholesterol regulation.



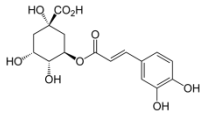
057 - **Chloramphenicol** MWt - 323.13 CAS - 56-75-7

Chloramphenicol is a broad spectrum antibiotic isolated from *Streptomyces venezuelae*. It is used to treat meningitis, cholera and typhoid fever. It exerts bacteriostatic effects via inhibition of bacterial protein synthesis.



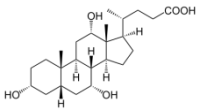
058 - **Chlorogenic acid** MWt - 354.31 CAS - 327-97-9

Chlorogenic acid is a phytochemical intermediate in lignin biosynthesis. It is formed through the esterification of caffeic acid and quinic acid. The molecule does not contain chlorine.



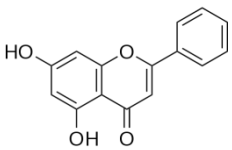
059 - **Cholic acid** MWt - 408.58 CAS - 81-25-4

Cholic acid (3α,7α,12α-trihydroxy-5β-cholan-24-oic acid) is one of the two primary bile acids in man. Cholic acid regulates bile acid and cholesterol homeostasis by downregulating cholesterol-7-α-hydroxylase in the liver. It may be provided as a supplement to treat bile acid deficiency.



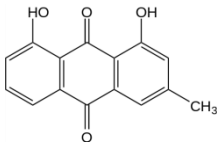
060 - **Chrysin** MWt - 254.24 CAS - 480-40-0

Chrysin (5,7-dihydroxyflavone) is a flavone found in passion flowers, honey, propolis and chamomile. It has been used as a dietary supplement for the purpose of increasing testosterone levels in males via inhibition of aromatase activity.



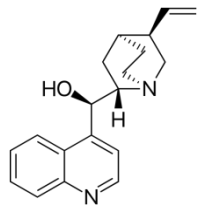
061 - **Chrysophanic acid** MWt - 254.24 CAS - 481-74-3

Chrysophanic acid (Chrysophanol) is a fungal anthraquinone. It has been reported to exert anti-viral properties, and anti-proliferative effects in certain cultured tumour cell-lines. It is thought to inhibit epidermal growth factor receptor signalling.



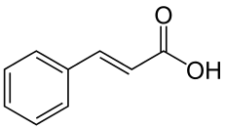
062 - **Cinchonidine** MWt - 294.39 CAS - 485-71-2

Cinchonidine is an alkaloid isolated from the plants *Cinchona officinalis* and *Gongronema latifolium*. It is a stereoisomer and pseudo-enantiomer of cinchonine, used in organic chemistry.



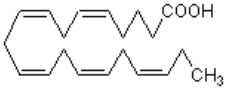
063 - **Cinnamic acid** MWt - 148.17 CAS - 140-10-3

Cinnamic acid is a phytochemical present in many plants. It has been reported to exert anti-proliferative properties with respect to cultured tumour cell lines *in vitro*, and some evidence supports anti-tumour effects in rodent models. It is thought to promote apoptosis of target cells.



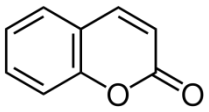
064 - **cis-5,8,11,14,17-Eicosapentaenoic acid** MWt - 302.45 CAS - 10417-94-4

Eicosapentaenoic acid is a 20:5(n-3) omega-3 polyunsaturated fatty acid. It is abundant in oily fish and fish oil, such as cod liver, herring, mackerel, salmon. Epidemiological studies suggest inverse associations between consumption of eicosapentaenoic acid and cardiovascular risk, however this has not been supported by fish oil supplement studies. It is a key precursor of prostaglandins and leukotrienes.



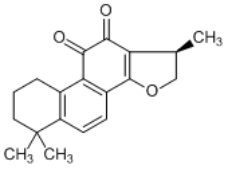
065 - **Coumarin** MWt - 146.14 CAS - 91-64-5

Coumarin is a benzopyrone found in many plants. Its sweet odor has been used in certain perfumes. Coumarin has been reported to stimulate degrade of extracellular albumin by macrophages, so aiding resolution of oedema. Coumarin itself is not used medicinally, but compounds derived from it have been used to treat diverse conditions.



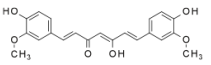
066 - **Cryptotanshinone** MWt - 296.36 CAS - 35825-57-1

Cryptotanshinone is a quinoid diterpene isolated from the root of the red sage plant (*Salvia miltiorrhiza*), which is commonly used in traditional medicine. It has been reported to exhibit anti-proliferative effects with respect to several cultured tumour cell-lines, and to inhibit STAT3 signalling *in vitro*.



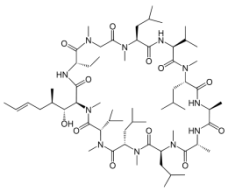
067 - **Curcumin** MWt - 368.38 CAS - 458-37-7

Curcumin is a bright yellow pigment present in several plants, although it is most abundant in turmeric (*Curcuma longa*). It is used as a food flavouring and colouring agent, and also as a dietary supplement. It is an activator of the oxidant defence pathway via stimulation of NRF2, and exhibits anti-inflammatory and anti-proliferative properties in some models.



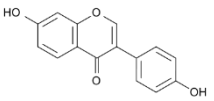
068 - **Cyclosporin A** MWt - 1202.61 CAS - 59865-13-3

Ciclosporin A (cyclosporine) is a compound isolated from the fungus *Tolypocladium inflatum*. It exhibits potent immunosuppressive properties by complexing with cyclophilin, which inhibits the activity of calcineurin and thereby decreases production of inflammatory cytokines by T-lymphocyte. It is widely used clinically to treat immunupathologies, such as rheumatoid arthritis, Crohn's disease and organ rejection.



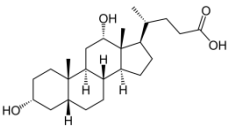
069 - **Daidzein** MWt - 254.24 CAS - 486-66-8

Daidzein (7-hydroxy-3-(4-hydroxyphenyl)-4H-chromen-4-one) is an isoflavone present in soybeans and other legumes. It is used as a dietary supplement. Daidzein is reported to modulate the expression of alkaline phosphatase by osteoblasts, and it has been suggested to have utility in the regulation of serum cholesterol levels.



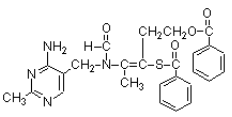
070 - **Deoxycholic acid** MWt - 392.57 CAS - 83-44-3

Deoxycholic acid (3α,12α-dihydroxy-5β-cholan-24-oic acid) is a secondary bile acid produced by the action of the human commensal microbiota on the primary bile acid cholic acid. It has potential to lyse mammalian cells at high concentrations, but at low doses exhibits anti-inflammatory properties.



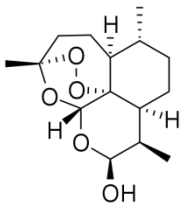
071 - **Dibenzoyl Thiamine** MWt - 490.58 CAS - 299-88-7

Dibenzoyl thiamine is a synthetic derivative of thiamin (vitamin B1). It is used as a lipid soluble version of thiamin for use in dietary supplements. Thiamine deficiency can result in beriberi and Wernicke encephalopathy. In Western countries, processed grains are often supplemented with thiamine to prevent these conditions.



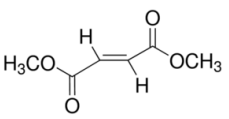
072 - **Dihydroartemisinin** MWt - 284.35 CAS - 71939-50-9

Dihydroartemisinin (artenimol) is the active metabolite of artemisinin compounds responsible for the anti-malarial properties of these drugs. It is also used directly as an anti-malarial medication. In addition to its anti-protozoal effects, it exhibits anti-proliferative effects in some cultured tumour cell-lines.



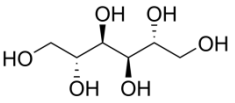
073 - **Dimethylfumarate** MWt - 144.13 CAS - 624-49-7

Dimethyl fumarate is the methyl ester of fumaric acid. It has been used for the treatment of psoriasis and relapsing multiple sclerosis. It is an immunomodulator which stimulates signalling via the Nrf2 pathway.



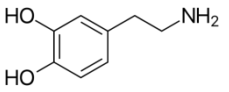
074 - **D-Mannitol (Osmitrol)** MWt - 182.17 CAS - 69-65-8

Mannitol is a sugar alcohol used as a food sweetener and also as a therapeutic agent. It is used medically to decrease ocular and intracranial pressure. As it is poorly absorbed, it must be given by injection. It is present in the flowering ash.



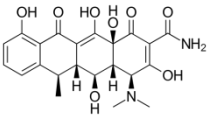
075 - **Dopamine** MWt - 189.64 CAS - 62-31-7

Dopamine (3,4-dihydroxyphenethylamine) is a catecholamine hormone that regulates numerous pathways in the brain and body in most animals. It is a neurotransmitter involved in reward signalling, but also acts as a vasodilator; increases urine output; and reduces insulin production. Parkinson's disease is caused by a loss of dopamine-secreting neurons, and there is evidence that dysregulation of its production may also be involved in schizophrenia.



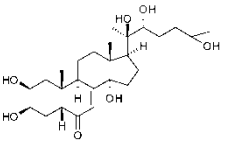
076 - **Doxycycline Hyclate** MWt - 512.94 CAS - 24390-14-5

Doxycycline is a broad-spectrum antibiotic of the tetracycline class which inhibits protein synthesis in bacteria and protozoa. It is used to treat bacterial pneumonia, acne, cholera and malaria. It has also been reported to inhibit certain matrix metallo-proteinases.



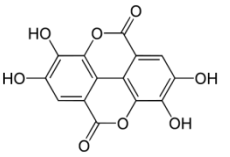
077 - **Ecdysterone** MWt - 486.64 CAS - 5289-74-7

Ecdysterone (20-hydroxyecdysone) is an insect hormone which controls moulting and development. It has been used as a dietary supplement for the purpose of improving physical performance, although with little supportive evidence. It has also been reported to exert insulin sensitising and anti-obesity properties in mice fed a high fat diet, and to inhibit NF-kB and TGF-beta signalling in cultured cells.



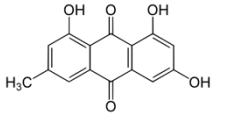
078 - **Ellagic acid** MWt - 302.19 CAS - 476-66-4

Ellagic acid is a phenol antioxidant found in numerous fruits and vegetables. It exhibits antiproliferative and antioxidant properties in vitro and in vivo. It is reported to exert chemoprotective effects in cellular models of oxidative stress. It has been used as a dietary supplement with diverse claims, although these have yet to be supported by evidence from clinical trials.



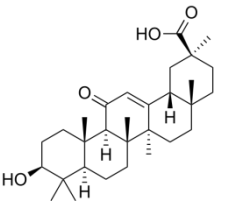
079 - **Emodin** MWt - 270.24 CAS - 518-82-1

Emodin (6-methyl-1,3,8-trihydroxyanthraquinone) is produced by plants including rhubarb, buckthorn, and Japanese knotweed and several types of fungi. It is thought to be responsible for the purgative effects of several traditional medicines containing it, and is also reported to exhibit anti-bacterial properties.



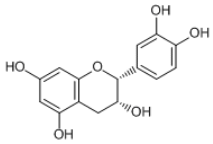
080 - **Enoxolone (Glycyrrhetin)** MWt - 470.68 CAS - 471-53-4

Enoxolone (glycyrrhetic acid) is a pentacyclic triterpenoid derivative obtained from the hydrolysis of glycyrrhizic acid. It is derived from the herb liquorice and is used as a flavoring agent to mask the bitter taste of certain drugs. It is reported to have antiviral, antifungal, antiprotozoal and antibacterial activities, in addition to utility in the treatment of peptic ulcer.



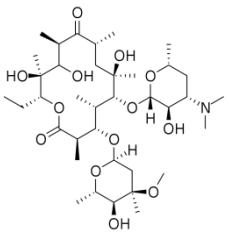
081 - **Epicatechin** MWt - 290.27 CAS - 490-46-0

Epicatechin is a flavonoid present in woody plants, cocoa and red wine. It is reported to express anti-oxidant properties, and to inhibit inflammatory cytokine production from LPS-stimulated macrophages. Epicatechin supplementation in mice also reportedly reduced levels of inflammation in adipose tissues.



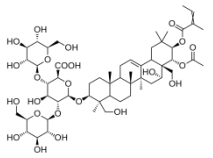
082 - **Erythromycin** MWt - 733.93 CAS - 114-07-8

Erythromycin is a macrolide antibiotic expressed by the bacteria *Saccharopolyspora erythraea*. It exerts its anti-bacterial properties through the inhibition of bacterial protein sythesis. It is used to treat respiratory tract infections, skin infections, syphilis and pelvic inflammatory disease.



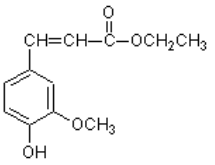
083 - **Escin** MWt - 1131.26 CAS - 6805-41-0

Escin (aescin) is a mixture of saponins which are thought to be responsible for the majority of the medical properties of the traditional medicine horse chestnut (*Aesculus hippocastanum*). Escin is reported to exhibit anti-inflammatory, vasoconstrictor and vasoprotective effects. It is thought to promote production of nitric oxide by endothelial cells.



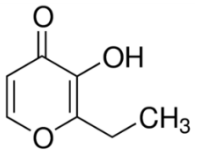
084 - **Ethyl ferulate** MWt - 223.24 CAS - 4046-02-0

Ethyl ferulate is the ethyl ester of ferulic acid which is found in numerous plants. It is reported to exhibit anti-inflammatory, antiproliferative and anti-oxidative properties. It is a free radical scavenger and is therefore used as a sunscreening agent in commercial sunscreen ointments. It is also an inducer of the haem oxygenase 1 gene.



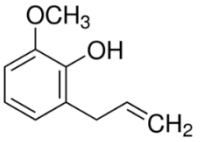
085 - **Ethyl maltol** MWt - 140.14 CAS - 4940-11-8

Ethyl maltol (3-hydroxy-2-ethyl-4-pyrone) is a pyranone commonly used as a food additive in confectioneries. The parent compound, maltol, is found in the bark of larch tree, in pine needles, and in roasted malt. High doses cause kidney damage in mice and rats.



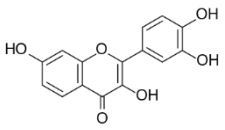
086 - **Eugenol** MWt - 164.20 CAS - 97-53-0

Eugenol is a phenylpropene found in several essential oils, including nutmeg, cinnamon, basil and bay leaf, but especially from clove oil. It has a spicy, clove-like odor and is used as a flavouring agent in foods. It has been reported to exhibit anaesthetic and anti-bacterial properties.



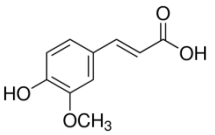
087 - **Fisetin (Fustel)** MWt - 286.24 CAS - 528-48-3

Fisetin (7,3′,4′-flavon-3-ol), is a plant flavonoid found in many plants, including strawberries, apples and cucumbers. It is a pigment used as a colouring agent. It is reported to promote sirtuin activation, and interest is growing in its potential to regulate the ageing process. It is used as a dietary supplement.



088 - **Fumalic acid (Ferulic acid)** MWt - 194.18 CAS - 1135-24-6

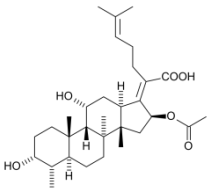
Ferulic acid (ferulic acid) is a hydroxycinnamic acid found in plant cell walls as a component of lignin. It is reported to exhibit anti-inflammatory, pro-apoptototic and cardioprotective properties. It has been used as a dietary supplement.



089 - **Fusidic acid**

MWt - 516.71 CAS - 6990-06-3

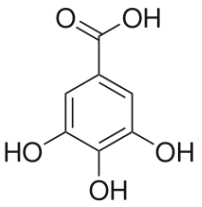
Fusidic acid is an antibiotic isolated from the fungus *Fusidium coccineum*. It has bacteriostatic properties via inhibition of bacterial protein synthesis. It is effective primarily against Gram positive bacteria.



090 - **Gallic acid**

MWt - 170.12 CAS - 149-91-7

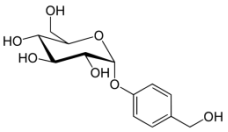
Gallic acid (3,4,5-trihydroxybenzoic acid) is a trihydroxybenzoic acid found in witch hazel, tea leaves and oak bark. It has been reported to exhibit anti-oxidant properties. It is also an inhibitor of carbonic anhydrase.



091 - **Gastrodin**

MWt - 286.28 CAS - 62499-27-8

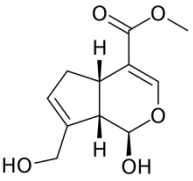
Gastrodin is a phytochemical present in the traditional medicines *Gastrodia elata* and *Galeola faberi*. It is reported to exhibit anti-inflammatory effects, including inhibition of pro-inflammatory cytokine production in response to LPS stimulation. Neuroprotective properties have also been reported.



092 - **Genipin**

MWt - 226.23 CAS - 6902-77-8

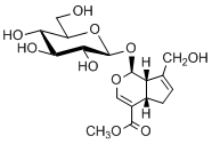
Genipin is a phytochemical found in the fruit of *Gardenia jasminoides*. It is reported to be a potent cross-linker of diverse proteins, and to exhibit anti-inflammatory and anti-depressant properties.



093 - **Geniposide**

MWt - 388.37 CAS - 24512-63-8

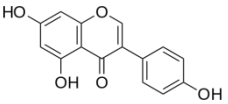
Geniposide is an iridoid glycoside found in species of Gardenia. It is reported to exhibit antioxidative, anti-diabetic, anti-inflammatory, neuroprotective, anti-viral, and anti-thrombotic properties. It is also reported to stimulate expression of GLUT2 and increase insulin secretion in β cells.



094 - **Genistein**

MWt - 270.24 CAS - 446-72-0

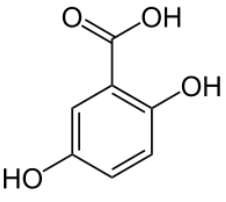
Genistein is an isoflavone found in several medicinal and food plants, including soy, coffe and *Flemingia vestita*. It is a phytoestrogen which has been reported to inhibit angiogenesis and epidermal growth factor receptor signalling, thus exerting anti-proliferative effects.



095 - **Gentisic acid**

MWt - 154.12 CAS - 490-79-9

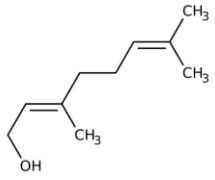
Gentisic acid is a hydroquinone compound associated with plant defence found in the African tree *Alchornea cordifolia*. It is also formed as a degradation product of salicylic acid metabolism. It is reported to exhibit anti-inflammatory and antioxidant properties. It is also reported to inhibit fibroblast growth factor signalling.



096 - **Geraniol**

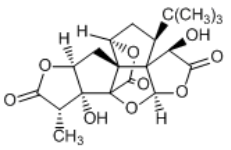
MWt - 154.25 CAS - 106-24-1

Geraniol is a monoterpenoid alcohol found in rose oil and certain other essential oils. It is used commercially as a flavouring agent, and also in perfumery. In the natural world, it is produced by the scent glands of honeybees to mark nectar-bearing flowers and hive entrances. Mosquito repellent properties have also been reported.



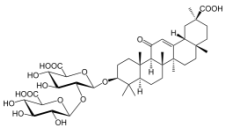
097 - **Ginkgolide A** MWt - 408.40 CAS - 15291-75-5

Ginkgolide A is a terpenic lactone isolated from the leaves of *Ginkgo biloba*. It is reported to express anti-inflammatory properties via inhibition of platelet activating factor receptor signalling. It has also been reported to inhibit g-aminobutyric acid (GABA) receptor signalling.



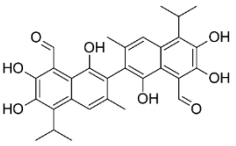
098 - **Glycyrrhizin** MWt - 822.93 CAS - 1405-86-3

Glycyrrhizin (glycyrrhizic acid) is a phytochemical isolated from liquorice root (*Glycyrrhiza glabra*). It is a sweet tasting saponin used as an emulsifier and gel-forming agent in foodstuffs and cosmetics. It is reported to inhibit 11 beta-hydroxysteroid dehydrogenase and monoamine oxidase activity.



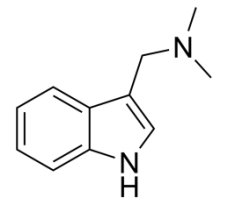
099 - **Gossypol** MWt - 518.55 CAS - 303-45-7

Gossypol is a phenolic aldehyde found in the cotton plant. Gossypol is reported to exhibit anti-proliferative and anti-malarial properties. It is also reported to act as an inhibitor of dehydrogenase enzymes, and protein kinase C, and has been tested as a male oral contraceptive.



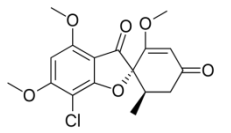
100 - **Gramine** MWt - 174.24 CAS - 87-52-5

Gramine (donaxine) is an indole alkaloid present in several plant species which is thought to play a defensive role against herbivores. It has been reported to promote signalling via the adiponectin receptor 1.



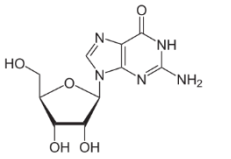
101 - **Griseofulvin** MWt - 352.77 CAS - 126-07-8

Griseofulvin is a product of the mould *Penicillium griseofulvumam*. It is an inhibitor of fungal mitosis through disription of microtubule function, and as such has found use as an antifungal medication for the treatment of dermatophytoses (ringworm). The anti-microbial properties do not extend to yeast or bacteria. Anti-proliferative properties have also been reported in cultured tumour cell-lines.



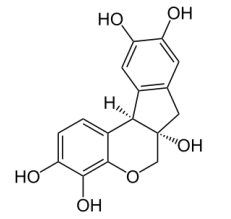
102 - **Guanosine** MWt - 283.24 CAS - 118-00-3

Guanosine is a purine nucleoside involved in the synthesis of nucleic acids and numerous signalling processes. Structural analogues of guanosine are used as antiviral drugs.



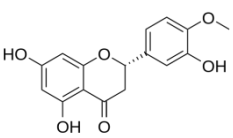
103 - **Hematoxylin** MWt - 302.28 CAS - 517-28-2

Haematoxylin (hydroxybrazilin) is a compound extracted from the heartwood of the logwood tree (*Haematoxylum campechianum*).It is used as a histological stain. It complexes readily with several metal ions, including Fe(III) and Al(III).



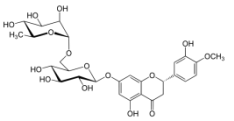
104 - **Hesperetin** MWt - 302.28 CAS - 520-33-2

Hesperetin is the 4'-methoxy derivative of the flavanone eriodictyol. It is a major flavonoid in lemons and oranges. It has been reported to express anti-inflammatory properties.



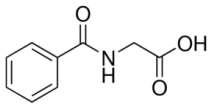
105 - **Hesperidin** MWt - 610.56 CAS - 520-26-3

Hesperidin is the flavanone 7-O-glycoside of hesperetin. It is found in citrus fruits, where it is believed to play a role in plant defense. The aglycone hesperetin is released from hesperidin on digestion. It has been reported to express anti-inflammatory properties.



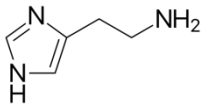
106 - **Hippuric acid** MWt - 179.17 CAS - 495-69-2

Hippuric acid is a metabolite found in human plasma and urine which is associated with both current and incident obesity. It is formed from the combination of benzoic acid and glycine. Levels of hippuric acid rise with the consumption of phenolic compounds (such as fruit juice, tea and wine).



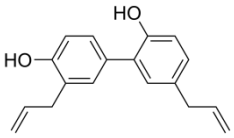
107 - **Histamine dihydrochloride** MWt - 184.07 CAS - 56-92-8

Histamine is a hormone which regulates numerous physiological functions, including gut activity, the immune response and neurotransmission. It is a major early inducer of inflammation in response to pathogens, tissue damage or allergens via its release from basophils and mast cells.



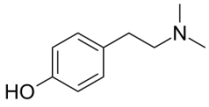
108 - **Honokiol** MWt - 266.23 CAS - 35354-74-6

Honokiol is a lignan isolated from the bark of the Magnolia tree. It has been shown to promote apoptosis in several cultured tumour cell-lines. It is reported to inhibit inflammatory signalling and phosphorylation of Akt. It is readily absorbed, and crosses the blood brain barrier easily.



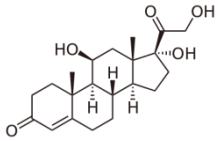
109 - **Hordenine** MWt - 165.23 CAS - 539-15-1

Hordenine (N,N-dimethyltyramine) is an alkaloid found in several plant species. It is used as a dietary supplement for the promotion of weight loss. Antibacterial properties of the compound have also been reported.



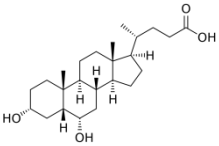
110 - **Hydrocortisone** MWt - 362.46 CAS - 50-23-7

Hydrocortisone is the term applied to synthetically derived cortisol. Cortisol is a stress hormone that is produced by the adrenal gland and stimulates the glucocorticoid receptor. It regulates diverse pathways systemically, including inflammation, blood glucose levels and blood calcium levels. It is widely used therapeutically to suppress immune responses.



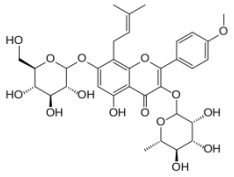
111 - **Hyodeoxycholic acid** MWt - 392.57 CAS - 83-49-8

Hyodeoxycholic acid (3α,6α-Dihydroxy-5β-cholan-24-oic acid) is a metabolic byproduct of the actions of intestinal bacteria on primary bile acids. It is therefore classified as a secondary bile acid. It is an activator of liver X receptor-signalling and has been reported to improve HDL function.



112 - **Icariin** MWt - 676.65 CAS - 489-32-7

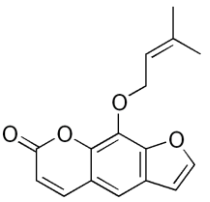
Icariin is a prenylated flavonol glycoside isolated from several species of plant, including most notably the traditional medicine Horny Goat Weed / Yin Yang Huo. Extracts of these plants were prescribed to yield aphrodisiac effects. Icariin is a weak PDE5 inhibitor in vitro, and may promote production of nitric oxide.



113 - **Imperatorin**

MWt - 270.28 CAS - 482-44-0

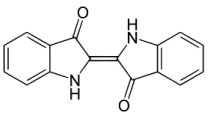
Imperatorin is a furocoumarin found in numerous plant species. It is an inhibitor of the phosphodiesterase PDE4, exhibiting preference for PDE4B over PDE4A. It acts as a calcium antagonist on vascular smooth muscle and exhibits myorelaxant properties.



114 - **Indigo**

MWt - 262.26 CAS - 482-89-3

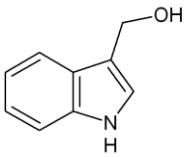
Indigo is an organic dye with a blue color which was historically isolated from the leaves of several plants, most notably *Indigofera tinctoria* and *Polygonum tinctorum*, for the dying of textiles. It is reported to exhibit low oral toxicity.



115 - **Indole-3-carbinol**

MWt - 147.17 CAS - 700-06-1

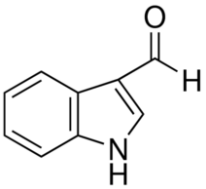
Indole-3-carbinol is produced by the breakdown of the glucosinolate glucobrassicin, which is abundant in cruciferous vegetables. It is reported to exhibit anti-proliferative effects with respect to cultured tumour cell-lines and anti-tumour effects in rodents. It is also reported to show anti-inflammatory and anti-oxidant properties. It is used as a dietary supplement.



116 - **Indole-3-carboxaledhyde**

MWt - 145.16 CAS - 487-89-8

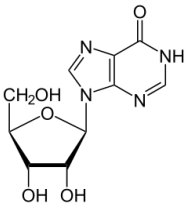
Indole-3-carboxaldehyde (indole-3-aldehyde, 3-formylindole), is a metabolite produced by the activity of human gastrointestinal bacteria, particularly *Lactobacillus* species, on dietary L-tryptophan. It is an agonist of the aryl hydrocarbon receptor in intestinal immune cells, promoting the synthesis of interleukin-22 to maintain intestinal immune function.



117 - **Inosine**

MWt - 268.23 CAS - 58-63-9

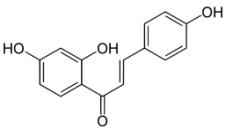
Inosine is a nucleoside comprised of hypoxanthine and ribose ring. It is found in transfer (t)RNAs. Its oxidation by the enzyme inosine monophosphate dehydrogenase, yields xanthosine monophosphate, which is required for purine metabolism.



118 - **Isoliquiritigenin**

MWt - 256.25 CAS - 961-29-5

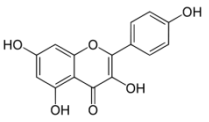
Isoliquiritigenin is a phenolic chemical compound found in licorice root (*Glycyrrhiza glabra*). It is reported to activate sirtuin signalling and to allosterically regulate the GABA-A receptor. Anti-proliferative and pro-apoptotic effects in cultured tumour cell-lines have also been reported.



119 - **Kaempferol**

MWt - 286.24 CAS - 520-18-3

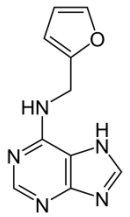
Kaempferol is a flavonol found in numerous plant species. It is reported to exhibit anti-oxidant, anti-inflammatory, anti-microbial and anti-cancer activities. It may also inhibit DNA topoisomerase I.



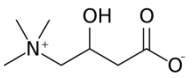
120 - **Kinetin (6-Furfuryladenine)**

MWt - 215.21 CAS - 525-79-1

Kinetin (6-Furfuryladenine) is a plant hormone responsible for the promotion of cell division. It is used in plant tissue culture in combination with auxin to promote the formation of callus and shoot tissues. It is also used as a constituent of several cosmetic products.

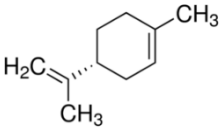


121 - **L-carnitine** MWt - 161.20 CAS - 541-15-1



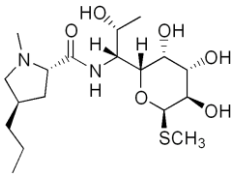
Carnitine (β-hydroxy-γ-N-trimethylaminobutyric acid) is a quaternary ammonium compound found in almost all organisms and animal tissue. It is required to transport long-chain fatty acids into the mitochondria, and is synthesised from lysine. It has been reported to exert serum lipid lowering properties.

122 - **Limonene** MWt - 136.24 CAS - 5989-27-5



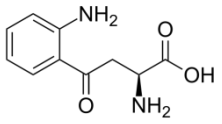
Limonene is a monoterpene flavour compound found in the peels of citrus fruits and in certain other plants as the (R)-enantiomer. It has been reported to have potential to treat cancer, bronchitis and obesity. It is used as a flavouring agent by the food industry.

123 - **Lincomycin hydrochloride monohydrate** MWt - 461.01 CAS - 7179-49-9



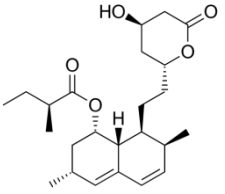
Lincomycin is a narrow spectrum antibiotic produced by the actinomycete *Streptomyces lincolnensis*. It has a similar structure, antibacterial spectrum, and mechanism of action to macrolide antibiotics. It is also effective against some species of Mycoplasma and Plasmodium.

124 - **L-Kynurenine Hydrate** MWt - 208.21 CAS - 2922-83-0



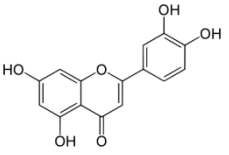
Kynurenine is a metabolite of the amino acid L-tryptophan used in the production of niacin. Kynurenine and its breakdown products are reported to regulate inflammatory vasodilation, immune responses and tumour cell growth. Production of kynurenine is reported to be increased in Alzheimer's disease and cardiovascular disease.

125 - **Lovastatin** MWt - 404.54 CAS - 75330-75-5



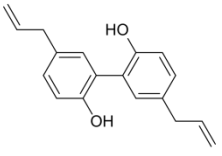
Lovastatin is an inhibitor of HMG-CoA reductase, the rate-limiting enzyme in cholesterol synthesis. It is used clinically to lower LDL-cholesterol levels in patients with hypercholesterolemia to reduce risk of cardiovascular disease. It is found naturally in oyster mushrooms and red yeast rice. In addition to lipid lowering effects, it may also exhibit anti-inflammatory properties.

126 - **Luteolin** MWt - 286.24 CAS - 491-70-3



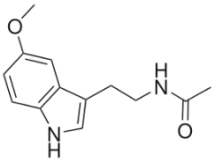
Luteolin is a flavone found in many different plants, including many food plants, such as celery, broccoli, green pepper, parsley and thyme. It is reported to exhibit capacity to inhibit phosphodiesterases, and to inhibit signalling downstream of Toll-like receptor-4 stimulation by bacterial lipopolysaccharide (LPS).

127 - **Magnolol** MWt - 266.32 CAS - 528-43-8



Magnolol is a lignan isolated from the bark of the Houpu magnolia (*Magnolia officinalis*). Extracts of such bark has been used traditionally in Chinese medicine. Magnolol is reported to exhibit anti-fungal properties, and to regulate osteoblast/osteoclast activity. Anti-inflammatory and GABAA receptor regulating properties have also been reported. It is an isomer of honokiol.

128 - **Melatonin** MWt - 232.28 CAS - 73-31-412

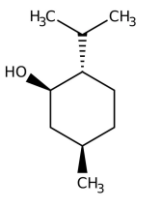


Melatonin (N-acetyl-5-methoxy tryptamine), is a hormone responsible for the regulation of sleep and wakefulness in man and other animals. It is also produced by plants in response to oxidative stress, as it serves as a free radical scavenger and confers protection of DNA from oxidative damage.

129 - **Menthol**

MWt - 156.27 CAS - 89-78-1

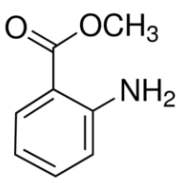
Menthol is an alcohol isolated from mint, peppermint and other mint oils. It exhibits local anesthetic and counterirritant qualities, and is widely used to relieve minor throat irritation. It has been reported to trigger cold-sensitive TRPM8 receptors and to act as a weak kappa opioid receptor agonist.



130 - **Methyl anthranilate**

MWt - 151.16 CAS - 134-20-3

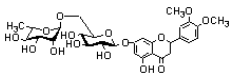
Methyl anthranilate (methyl 2-aminobenzoate), is an ester of anthranilic acid found in grapes and several other fruits. It is used as a flavoring agent, yielding a fruity grape smell. It has been reported to act as a bird repellent.



131 - **Methyl-Hesperidin**

MWt - 624.59 CAS - 11013-97-1

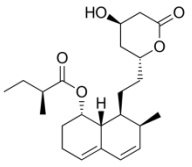
Methyl hesperidin is a flavanone glycoside found in citrus fruits. The closely related compound hesperidin is believed to play a role in plant defense, and has been reported to exhibit anti-inflammatory properties.



132 - **Mevastatin**

MWt - 390.51 CAS - 73573-88-3

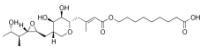
Mevastatin (compactin) is a competitivel inhibitor of HMG-CoA reductase, which is the rate limiting enzyme in cholesterol synthesis in the liver. It is used therapeutically to reduce serum LDL cholesterol levels and thereby reduce risk of cardiovascular disease. It was isolated from the mould *Penicillium citrinum* by Akira Endo and colleagues.



133 - **Mupirocin**

MWt - 500.62 CAS - 12650-69-0

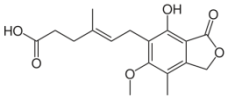
Mupirocin is an antibiotic isolated from *Pseudomonas fluorescens* which is used to treat superficial skin infections. It exerts bacteriostatic effects via inhibition of isoleucyl t-RNA synthetase, which results in inhibition of protein synthesis in bacteria.



134 - **Mycophenolic acid**

MWt - 320.34 CAS - 24280-93-1

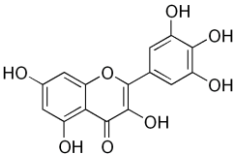
Mycophenolic acid is found in several fungal species, including *Penicillium stoloniferum*, *P. brevicompactum* and *P. echinulatum*. It is used therapeutically as an immunosuppressant drug to prevent organ rejection following transplantation via inhibition of inosine-5'-monophosphate dehydrogenase. It is also reported to exhibit antiviral, antifungal, antibacterial, anticancer and antipsoriasis properties.



135 - **Myricetin**

MWt - 302.24 CAS - 529-44-2

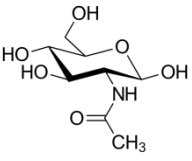
Myricetin is a flavonoid found in many food plants, including many vegetables, fruits, nuts, berries and red wine. It is structurally related to fisetin and quercetin, and has been reported to exhibit anti-oxidant, anti-proliferative and anti-inflammatory properties. Dietary intake of myricetin is estimated to be in the order of tens of milligrams per day.



136 - **N-acetyl glucosamine**

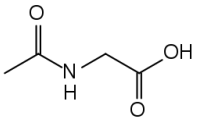
MWt - 221.21 CAS - 7512-17-6

N-Acetylglucosamine (GlcNAc) is an amide formed between glucosamine and acetic acid. It is an essential structural component of peptidoglycan in bacterial cell walls, and is the monomeric unit of the polymer chitin, which forms the outer coverings of insects and crustaceans. It has been reported to inhibit elastase release from human neutrophils.



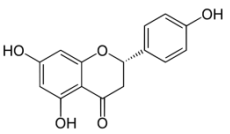
137 - **N-acetylglycine** MWt - 117.10 CAS - 543-24-8

N-acetylglycine (aceturic acid) is a derivative of the amino acid glycine. It is a metabolite found in human plasma, where it has been reported to be associated with body mass index in human metabolime-wide association studies. Faecal levels have also been reported to be associated with colorectal cancer.



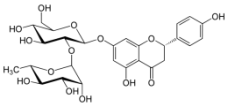
138 - **Naringenin** MWt - 272.25 CAS - 480-41-1

Naringenin is a flavanone found in several fruits and herbs, especially grapefruit. It is reported to inhibit human cytochrome P450 isoform CYP1A2, thus altering metabolism of several drugs. It has also been reported to improve memory and reduce amyloid and tau protein deposition in murine models of Alzheimer's Disease.



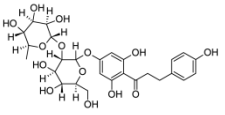
139 - **Naringin** MWt - 580.53 CAS - 10236-47-2

Naringin is the 7-O-glycoside of naringenin and neohesperidose. It is found mainly in citrus fruits, particularly grapefruit. It has been reported to exhibit anti-oxidant, cholesterol lowering and anti-proliferative properties, and to reduce diabetes-induced neuropathy in rats.



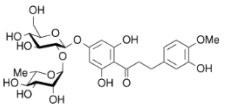
140 - **Naringin dihydrochalcone** MWt - 582.56 CAS - 18916-17-1

Naringin dihydrochalcone is a food sweetening agent derived from naringin. It is used widely as a supplement in foods and medicines to mask bitterness and add sweetness, particularly in fatty foods, drinks, gum and toothpaste.



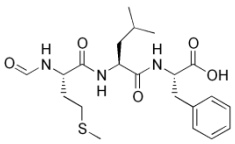
141 - **Neohesperidin dihydrochalcone** MWt - 612.58 CAS - 20702-77-6

Neohesperidin dihydrochalcone is a bitter masking and sweetening agent derived from citrus fruits and used in many foods. It is reported to enhance flavours via stimulation of human sweet taste receptors.



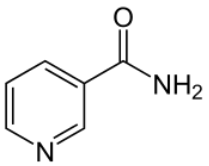
142 - **N-Formyl-Met-Leu-Phe** MWt - 437.55 CAS - 59880-97-6

N-Formyl-Met-Leu-Phe is a peptide used commonly in research to model the formylated peptides which are produced and released by bacteria. Such peptides are recognised by formyl peptide receptors on the surface of leukocytes, resulting in chemotaxis towards the bacteria. Formyl peptides are formed during protein synthesis in bacteria and mitochondria, but not in the eukaryotic cytosol.



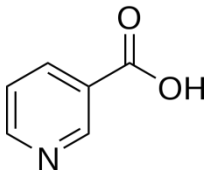
143 - **Nicotinamide** MWt - 122.13 CAS - 98-92-0

Nicotinamide is a form of vitamin B3 used as a dietary supplement to prevent and treat niacin deficiency. It is reported to inhibit Tau polymerisation in a mouse model of Alzheimer's disease. It is also reported to regulate sirtuin signalling. It is a precursor of the coenzyme nicotinamide adenine dinucleotide.



144 - **Nicotinic acid** MWt - 123.11 CAS - 59-67-6

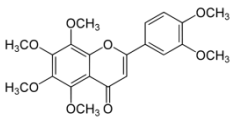
Nicotinic acid (niacin) is a form of vitamin B3, which is essential in man. Unlike the closely related nicotinamide, it is reported to exhibit serum cholesterol lowering properties. It is commonly added to grains as fortification to reduce risk of niacin deficiency.



145 - **Nobiletin**

MWt - 402.39 CAS - 478-01-3

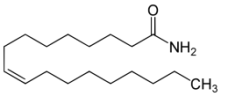
Nobiletin (hexamethoxyflavone) is an O-methylated flavone found in the rind of citrus fruits. It has been reported to exhibit anti-inflammatory and anti-tumor properties in vitro and in vivo. It may also inhibit cartilage degradation via inhibition of matrix metalloproteinases, and reduce macrophage foam cell formation.



146 - **Oleamide**

MWt - 281.48 CAS - 301-02-0

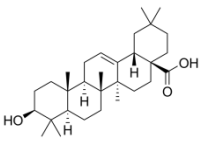
Oleamide is a metabolite found in human plasma. It is an amide derived from oleic acid which accumulates in cerebrospinal fluid during sleep deprivation and induces sleep in animals. It is being studied as a potential therapeutic agent for mood and sleep disorders. It is reported to modulate several neurotransmitter systems.



147 - **Oleanolic acid**

MWt - 456.70 CAS - 508-02-1

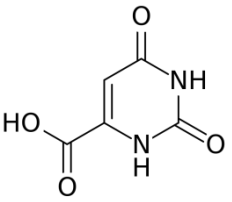
Oleanolic acid (caryophyllin, oleanic acid), is a pentacyclic triterpenoid related to betulinic acid. It is widely distributed in plants, including several food plants, such as olve oil. It is reported to exhibit hepatoprotective, anti-tumor and anti-viral properties. It is used as a constituent of some cosmetic goods.



148 - **Orotic acid (6-Carboxyuracil)**

MWt - 156.10 CAS - 65-86-1

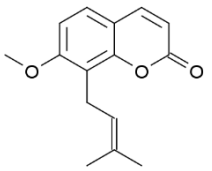
Orotic acid (6-Carboxyuracil), is a heterocyclic compound produced by the mitochondrial enzyme dihydroorotate dehydrogenase. It has been used as a mineral carrier in dietary supplements to increase bioavailability.



149 - **Osthole**

MWt - 244.29 CAS - 484-12-8

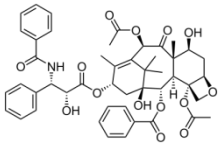
Osthole (osthol) is an O-methylated derivative of coumarin which is found in a variety of plants including Cnidium monnieri, Angelica archangelica and Angelica pubescens. It has been reported to inhibit platelet aggregation and promote differentiation of human osteoblast cells via BMP and ERK1/2 signalling.



150 - **Paclitaxel**

MWt - 853.91 CAS - 33069-62-4

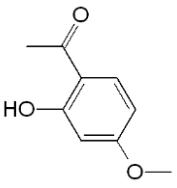
Paclitaxel is a chemotherapy medication used to treat ovarian, breast, lung and other cancers. It was first isolated from the Pacific yew tree in 1971, and found to exhibit anti-proliferative properties through a large natural product screening programme. Cell division is inhibited by the stabilisation of microtubules by paclitaxel. It has also been reported to regulate angiogenesis.



151 - **Paeonol**

MWt - 166.18 CAS - 552-41-0

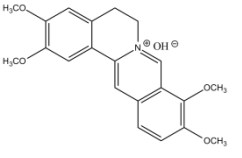
Paeonol is a phenolic compound isolated from several herbs pertaining to Traditional Chinese medicine including *Paeonia suffruticosa*, *Arisaema erubescens* and *Dioscorea japonica*. It has been reported to exhibit anti-inflammatory, anti-mutagenic and analgesic properties. It has also been reported to inhibit mono-amine oxidase activity.



152 - **Palmatine chloride**

MWt - 387.86 CAS - 10605-02-4

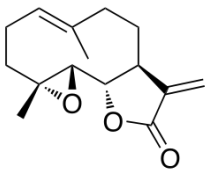
Palmatine is a protoberberine alkaloid found in several plants including *Phellodendron amurense* and *Corydalis yanhusuo*. It has been reported to have potential for the treatment of jaundice, dysentery, hypertension, inflammation, and liver-related diseases. Anti-viral properties have also been reported *in vitro*.



153 - **Parthenolide**

MWt - 248.32 CAS - 20554-84-1

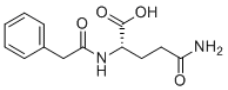
Parthenolide is a sesquiterpene lactone found in the flowers and fruit of the plant feverfew (*Tanacetum parthenium*). It has been reported to exhibit anti-inflammatory properties via inhibition of NF-kB signalling.



154 - **Phenylacetylglutamine**

MWt - 264.281 CAS - 28047-15-6

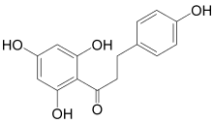
Phenylacetylglutamine is a metabolite found in human plasma which has been reported to be associated with obesity. It is thought to be produced by co-metabolism with the commensal microbiota, and plasma levels have also been reported to be associated with diversity of the gut microbiota.



155 - **Phloretin**

MWt - 247.27 CAS - 60-82-2

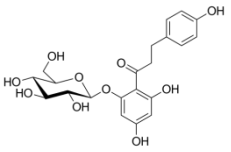
Phloretin (dihydronaringenin), is a dihydrochalcone found in apple tree leaves and the Manchurian apricot. It has been reported to inhibit the transport of glucose into cells by SGLT1 and SGLT2, and to reduce weight gain in high-fat diet fed mice. Phloretin also inhibits urea transporters, causing urea loss and diuresis when coupled with high protein diets.



156 - **Phlorizin**

MWt - 472.44 CAS - 60-81-1

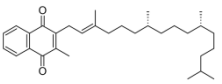
Phlorizin (phloretin-2'-β-D-glucopyranoside) is a glucoside of the dihydrochalcone phloretin. When orally consumed, it is almost entirely converted into phloretin by hydrolytic enzymes in the small intestine. Phlorizin inhibits glucose uptake by cells via competitive inhibition of SGLT1 and SGLT2. It is more potent in this respect than its breakdown product phloretin.



157 - **Phylloquinone**

MWt - 450.70 CAS - 84-80-0

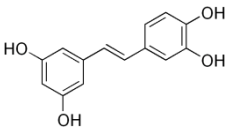
Phylloquinone (Phytomenadione, vitamin K1) is a vitamin found in green vegetables, vegetable oil, and some fruit. It is required for effective blood clotting in man, and is therefore given as a dietary supplement to treat certain bleeding disorders, including warfarin overdose, vitamin K deficiency, and obstructive jaundice.



158 - **Piceatannol**

MWt - 244.24 CAS - 10083-24-6

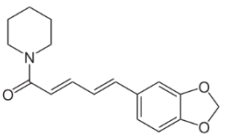
Piceatannol is a stilbenoid found in the roots of Norway spruces (*Picea abies*).It is also a metabolite of resveratrol, and its glucoside, astringin, is found in red wine. It has been reported to inhibit adipogenesis in cultured fat cells. It has also been reported to inhibit NF-kB, and histamine release by mast cells.



159 - **Piperine**

MWt - 285.34 CAS - 94-62-2

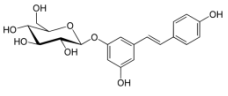
Piperine (1-Piperoylpiperidine) is the alkaloid responsible for the pungency of black pepper, and a constituent of several traditional medicines. It is an isomer of chavicine. It has been reported to inhibit function of the efflux pump P-glycoprotein, which is involved in the development of resistance to chemtherapy drugs in many tumour cell-lines.



160 - **Polydatin (Piceid)**

MWt - 390.38 CAS - 65914-17-2

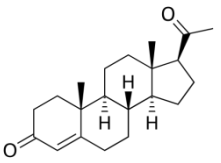
Polydatin (piceid) is a stilbenoid glucoside derived from resveratrol found in grape juice. It has been reported to inhibit phospholipase A2 enzyme activity, and to exert anti-inflammatory and pro-survival effects in the caecal ligation and puncture (CLP) induced sepsis model in mice.



161 - **Progesterone**

MWt - 314.46 CAS - 57-83-0

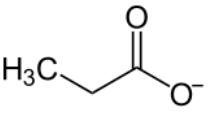
Progesterone is a steroid sex hormone which regulates the menstrual cycle, pregnancy and embryogenesis. It is a metabolic intermediate in the production of other endogenous steroid hormones, including the corticosteroids. It has also been reported to modulate proliferation of cultured breast cancer cell-lines.



162 - **Propionate**

MWt - 74.08 CAS - 79-09-4

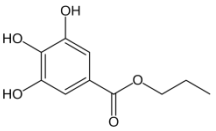
Propionic acid is a major metabolite produced by the commensal microbiota of the human large intestine as a byproduct of the bacterial fermentation of dietary fibre. It is also produced by *Propionibacterium* in the sebaceous glands.



163 - **Propyl gallate**

MWt - 212.20 CAS - 121-79-9

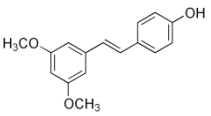
Propyl gallate (propyl 3,4,5-trihydroxybenzoate) is a fat-soluble antioxidant that is commonly added to foods containing oils and fats to prevent oxidation. It is an ester formed by the condensation of gallic acid and propanol. It has been reported to promote apoptosis in cultured tumour cell-lines, and to exhibit anti-inflammatory properties via inhibition of NF-kB.



164 - **Pterostilbene**

MWt - 256.30 CAS - 537-42-8

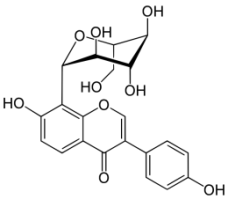
Pterostilbene is a stilbenoid with structural similarity to resveratrol. It is produced in plants in response to damage or infection, where it serves as a defensive phytoalexin. It is found in almonds, grape leaves and blueberries. It has been studied for potential impact on age-related cognitive decline in animal models.



165 - **Puerarin (Kakonein)**

MWt - 416.38 CAS - 3681-99-0

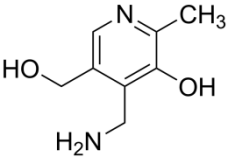
Puerarin (kakonein), is an isoflavone and 8-C-glucoside of daidzein which is found in several plants, most notably in the root of Pueraria (*Radix puerariae*). This plant is used in traditional Chinese medicine to treat cardiovascular diseases. Anti-proliferative properties have also been reported *in vitro*.



166 - **Pyridoxamine dihydrochloride**

MWt - 241.11 CAS - 58052-48-5

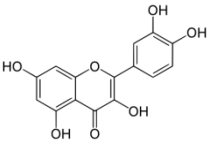
Pyridoxamine is a form of vitamin B6. It has been reported to exhibit free radical scavenging properties and has been examined for therapeutic potential to treat diabetic nephropathy and retinopathy. It has also been marketed as a dietary supplement.



167 - **Quercetin (Sophoretin)**

MWt - 302.24 CAS - 117-39-5

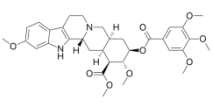
Quercetin (sophoretin), is a plant flavonol found in many edible fruits, vegetables, leaves and grains. It is used a food additive to confer a bitter taste on products. It is one of the most abundant dietary flavonoids. It has been reported to exhibit anti-oxidant properties, and to inhibit phosphoinositol-3-kinase enzyme activity.



168 - **Reserpine**

MWt - 608.27 CAS - 50-55-5

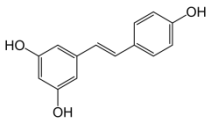
Reserpine is an indole alkaloid with anti-psychotic and anti-hypertensive properties. It was used historically to treat these conditions, but has since been superseded by other drugs. It deplete monoamine neurotransmitters, including catecholamines, from peripheral sympathetic nerve endings. This impacts on heart rate, contractile force and peripheral vascular resistance.



169 - **Resveratrol**

MWt - 228.24 CAS - 501-36-0

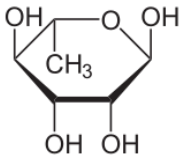
Resveratrol (3,5,4′-trihydroxy-trans-stilbene) is a phytoalexin produced by several plants in response to injury or infection. It is abundant in the skin of grapes, blueberries and mulberries, and is used as a dietary supplement. It is reported to inhibit cyclooxygenases and lipooxygenases, and to activate AMPK and sirtuins.



170 - **Rhamnose monohydrate**

MWt - 182.17 CAS - 10030-85-0

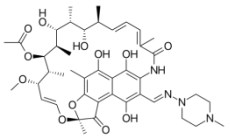
Rhamnose is a naturally occurring deoxy sugar. Unlike most sugars, it occurs naturally in the L-form. It may be isolated from Buckthorn and plants in the genus Uncaria. It is a common glycone component of glycosides from many plants. Anti-inflammatory properties of L-rhamnose have been reported.



171 - **Rifampicin**

MWt - 822.94 CAS - 13292-46-1

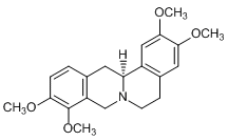
Rifampicin (rifampin), is an antibiotic isolated from the soil bacterium *Amycolatopsis rifamycinica*. It is an inhibitor of bacterial RNA production used to treat tuberculosis, leprosy, and Legionnaire's disease in combination with other antibiotics. Anti-inflammatory properties have also been reported.



172 - **Rotundine**

MWt - 355.43 CAS - 483-14-7

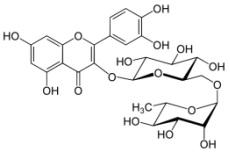
Rotundine (tetrahydropalmatine), is an isoquinoline alkaloid found in several plant species used in Chinese herbal medicine. It is reported to have analgesic, anxiolytic and sedative properties and is used as a dietary supplement. Muscle relaxant properties have also been reported.



173 - **Rutin**

MWt - 610.52 CAS - 153-18-4

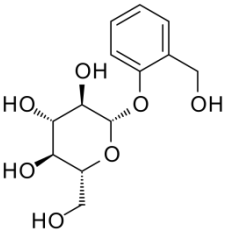
Rutin (rutoside, sophorin), is the glycoside of quercetin and rutinose (α-L-rhamnopyranosyl-(1→6)-β-D-glucopyranose). It is a flavonoid found in many plants including buckwheat and citrus fruit. It is reported to exhibit anti-bacterial and anti-platelet properties.



174 - **Salicin**

MWt - 286.28 CAS - 138-52-3

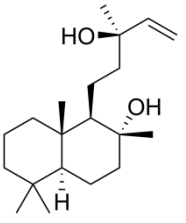
Salicin (Salicoside) is an alcoholic β-glucoside found in the bark of the willow tree. It exhibits anti-inflammatory properties via non-selective inhibition of cyclo-oxygenase-1 and -2. It is structurally related to aspirin. After ingestion, it is converted to the active metabolite salicylic acid.



175 - **Sclareol**

MWt - 308.50 CAS - 515-03-7

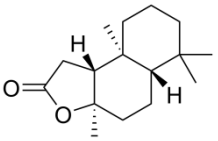
Sclareol is a bicyclic diterpene alcohol found in clary sage (*Salvia sclarea*). It has a sweet scent, and is used as a fragrance and flavoring in cosmetics and foods, respectively. Anti-fungal, anti-inflammatory, anti-proliferative and pro-apoptotic properties of sclareol have been reported.



176 - **Sclareolide**

MWt - 250.38 CAS - 564-20-5

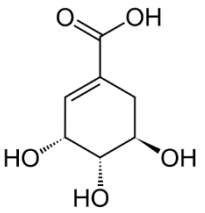
Sclareolide (Norambreinolide) is a sesquiterpene lactone found in *Salvia sclarea* and cigar tobacco. It is used as a close analog of sclareol, a plant antifungal compound. It is used as a fragrance in cosmetics and as a dietary supplement for weight loss.



177 - **Shikimic acid**

MWt - 174.15 CAS - 138-59-0

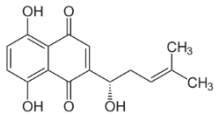
Shikimic (shikimate), is a cyclohexanecarboxylic acid found in plants and microorganisms. It is a metabolite used in the biosynthesis of many significant molecules, inluding certain aromatic amino acids, indole derivatives, flavonoids and lignin. It is reported to exhibit anti-bacterial properties with respect to Gram-positive bacteria.



178 - **Shikonin**

MWt - 288.3 CAS - 54952-43-1

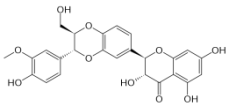
Shikonin is a red dye extracted from alkanet root (*Alkanna tinctoria*) used for colouring in sausage casings, confectionery and wine. isolated from Arnebia sp. The naphthoquinone is used as an anti-inflammatory treatment in traditional chinese medicine. It is also reported to inhibit chemokine receptor function.



179 - **Silibinin**

MWt - 482.44 CAS - 22888-70-6

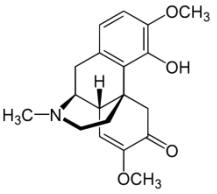
Silibinin (silybin), is the major active constituent of silymarin, a standardized extract of the seeds of the milk thistle. It is reported to exhibit hepatoprotective properties, and also to potentiate chemotherapy drug mediated killing of certain tumour cell lines cultured *in vitro*.



180 - **Sinomenine**

MWt - 365.20 CAS - 115-53-7

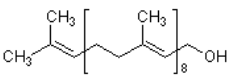
Sinomenine (cucoline) is an alkaloid isolated from the root of the climbing plant *Sinomenium acutum*, which is traditionally used in herbal medicine to treat rheumatism and arthritis. It is reported to inhibit production of prostaglandins, leukotrienes and nitric oxide. It has also been reported to trigger autophagy in cultured tumour cell lines.



181 - **Solanesol**

MWt - 631.07 CAS - 13190-97-1

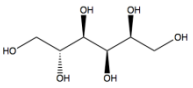
Solanesol is a long-chain polyisoprenoid alcohol found in several food plants, including tomato, potato, and pepper. It has been reported to exhibit anti-inflammatory, anti-bacterial and anti-viral properties. It is an activator of Nrf2 signalling.



182 - **Sorbitol (Glucitol)**

MWt - 182.17 CAS - 50-70-4

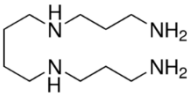
Sorbitol (glucitol), is a sugar alcohol with a sweet taste found in apples, pears and peaches, but also obtained commercially by the reduction of glucose from corn syrup. It is used as a sweetening food additive, and is an isomer of mannitol.



183 - **Spermine**

MWt - 202.34 CAS - 71-44-3

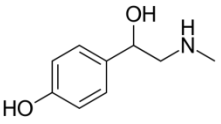
Spermine is a polyamine which is required for cellular metabolism in eukaryotes. Deficiency in spermine production results in intellectual disability, other neurological changes, hypotonia, and reduced growth of muscle and bone.



184 - **Synephrine**

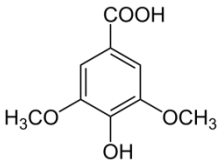
MWt - 167.21 CAS - 94-07-5

Synephrine (oxedrine), is an alkaloid found in some plants and animals. It is reported to exhibit adrenergic effects, and has been marketed as a supplement to support weight loss. It is also reported to exhibit hypertensive and vasoconstrictor properties.



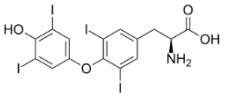
185 - **Syringic acid** MWt - 198.18 CAS - 530-57-4

Syringic acid is an O-methylated trihydroxybenzoic acid found in palm oil, vinegar and wine. It has been reported to exhibit anti-oxidant, hepatoprotective and neuroprotective properties. It has also been reported to sensitise various cultured tumour cell-lines to chemotherapy drugs *in vitro*.



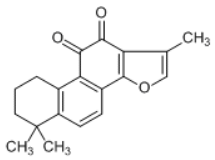
186 - **T4 (L-Thyroxine sodium salt)** MWt - 798.85 CAS - 55-03-8

T4 (thyroxine) is a human thyroid hormone which is primarily responsible for the regulation of metabolism. It is administered as a therapeutic agent to correct deficiency in thyroid hormone production. T4 is relatively well absorbed from the gastrointestinal tract, and is converted to the more active T3 in the tissues.



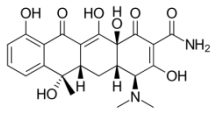
187 - **Tanshinone IIA** MWt - 294.34 CAS - 568-72-9

Tanshinone IIA (Tanshinone B) is a diterpene quinone found in *Salviae miltiorrhizae*, which has been used as a traditional remedy for cardiovascular disease. It has been reported to exhibit anti-oxidant properties and capacity to inhibit proliferation of certain cultured tumour cell-lines.



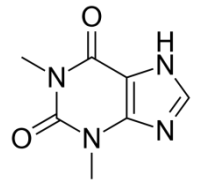
188 - **Tetracycline hydrochloride** MWt - 480.90 CAS - 64-75-5

Tetracycline is a widely used polyketide antibiotic isolated from *Streptomyces* bacteria. It has a broad-spectrum of activity, exerting bacteriostatic effects by binding reversibly to the bacterial 30S ribosomal subunit and thereby inhibiting protein synthesis.



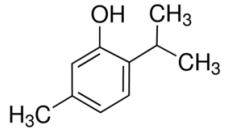
189 - **Theophylline** MWt - 180.16 CAS - 58-55-9

Theophylline (1,3-dimethylxanthine), is a methylxanthine drug used in to treat chronic obstructive pulmonary disease and asthma. It is present in tea (*Camellia sinensis*) and cocoa (*Theobroma cacao*), and is also produced in the liver as a byproduct of caffeine metabolism.



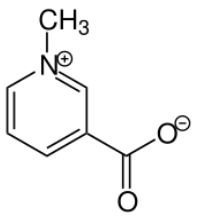
190 - **Thymol** MWt - 150.22 CAS - 89-83-8

Thymol (2-isopropyl-5-methylphenol) is a monoterpenoid found in oil of thyme (*Thymus vulgaris*). It has been reported to exhibit anti-bacterial and anti-fungal properties, and to potentiate the activity of existing antibiotics. It is used as a pesticide and as an anti-septic in toothpastes.



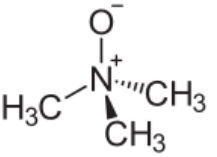
191 - **Trigonelline hydrochloride** MWt - 173.60 CAS - 6138-41-6

Trimethylamine N-oxide (TMAO) is a plasma metabolite which has been found to correlate strongly with risk of coronary artery disease in metabolome-wide association studies. It is produced from trimethylamine, which in man is derived only from the action of the intestinal microbiota on choline. It is also used as an osmolyte in marine organisms.



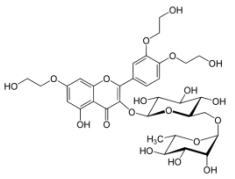
192 - **Trimethylamine N Oxide (TMAO)** MWt - 75.11 CAS - 1184-78-7

Trigonelline is a product of niacin (vitamin B3) metabolism that is excreted in the urine of mammals, and is also found in several edible plants, such as garden peas, oats and potatoes. It is reported to exhibit antibacterial, neuroprotective, hypoglycemic and hypolipidemic properties.



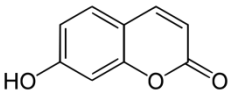
193 - **Troxerutin** MWt - 742.68 CAS - 7085-55-4

Troxerutin is a flavonol isolated from the Japanese pagoda tree (*Sophora japonica*). It has been reported to exhibit anti-oxidant, lipid lowering and vasoprotective properties. It has also been reported to reverse insulin resistance in mice.



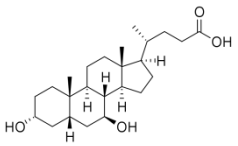
194 - **Umbelliferone** MWt - 162.14 CAS - 93-35-6

Umbelliferone (7-hydroxycoumarin), is an anti-oxidant used in sunscreens to absorb light at ultraviolet wavelengths. It has been reported to exhibit anti-inflammatory and anti-proliferative properties with respect to cultured tumour cell-lines. There is some evidence it may reduce Th2 cytokine production in murine models of asthma.



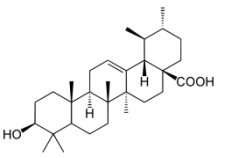
195 - **Ursodeoxycholic acid** MWt - 392.57 CAS - 128-13-2

Ursodeoxycholic acid (ursodiol), is a secondary bile acids, formed by the actions of the intestinal microbiota on primary bile acids. It is thought to help regulate cholesterol uptake in the gut, and has been reported to exert immunosuppressive properties and chemopreventive effects in colonic epithelial cells.



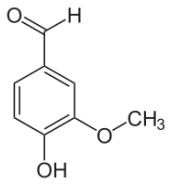
196 - **Ursolic acid** MWt - 456.70 CAS - 77-52-1

Ursolic acid (malol), is a pentacyclic triterpenoid found in the waxes and peels of several edible fruits. It has been reported to inhibit proliferation and promote apoptosis in several cultured tumour cell-lines. It has also been reported to inhibit aromatase activity, promote cardioprotection and to stimulate muscle growth in mice.



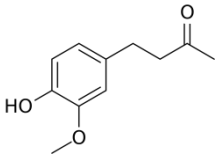
197 - **Vanillin** MWt - 152.15 CAS - 121-33-5

Vanillin (4-hydroxy-3-methoxybenzaldehyde), is a phenolic aldehyde found in the vanilla bean. It has been reported to exhibit bacteriostatic properties with respect to several Gram-positive and Gram-negative food spoilage organisms. It is used as a flavoring agent by the food industry.



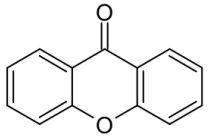
198 - **Vanillylacetone** MWt - 194.23 CAS - 122-48-5

Vanillylacetone (zingerone), is a flavour compound found in ginger root. It has been reported to have free radical scavenging properties, and to have utility in the treatment of diarrhea induced by enterotoxigenic *Escherichia coli* heat-labile enterotoxin. It is used as a flavouring agent in the food industry.



199 - **Xanthone** MWt - 196.20 CAS - 90-47-1

Xanthone (genicide) is phytochemical found in numerous plants, although it is particularly abundant in the pericarp of the mangosteen fruit (*Garcinia mangostana*), which has been used in traditional medicine to treat inflammation and infection. It has also been used as an insecticide and larvicide.



200 - **Xylitol** MWt - 152.15 CAS - 87-99-0

Xylitol is a sugar alcohol commonly used as a food sweetening agent. It has been reported to exhibit anti-inflammatory properties, and to regulate endothelial cell function in matrigel-based models of angiogenesis *in vitro*.