



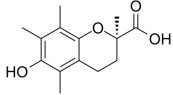
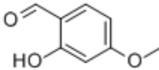
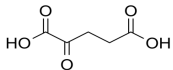
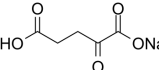
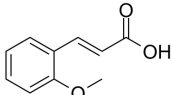
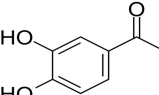
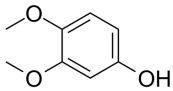
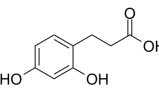
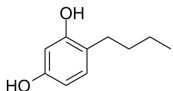
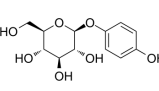
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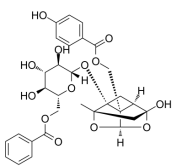
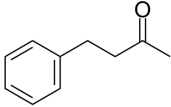
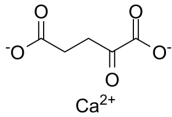
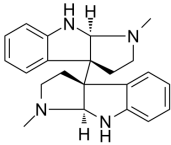
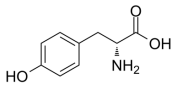
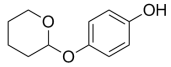
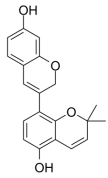
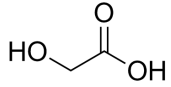
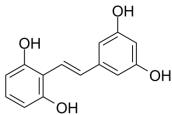
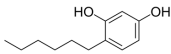
Inhibitors, Agonists, Screening Libraries

Tyrosinase

Tyrosinase is an oxidase that is the rate-limiting enzyme for controlling the production of melanin. The enzyme is mainly involved in two distinct reactions of melanin synthesis. Tyrosinase is a copper-containing enzyme present in plant and animal tissues that catalyzes the production of melanin and other pigments from tyrosine by oxidation, as in the blackening of a peeled or sliced potato exposed to air. It is found inside melanosomes which are synthesised in the skin melanocytes. In humans, the tyrosinase enzyme is encoded by the TYR gene. Tyrosinase is one of the key enzymes in mammalian melanin synthesis.

Tyrosinase Inhibitors

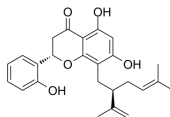
<p>(R)-Trolox</p> <p>Cat. No.: HY-101445A</p> <p>(R)-Trolox is a water soluble vitamin E analogue and a competitive tyrosinase inhibitor with a K_i value of 0.83 mM and a ID_{50} value of 1.88 mM. The (R)-Trolox has stronger tyrosinase affinity than the (S) enantiomer (K_i value of 0.61 mM).</p>  <p>Purity: 99.94% Clinical Data: No Development Reported Size: 10 mM × 1 mL, 50 mg, 100 mg</p>	<p>2-Hydroxy-4-methoxybenzaldehyde</p> <p>Cat. No.: HY-N0445</p> <p>2-Hydroxy-4-methoxybenzaldehyde, a chemical compound and an isomer of Vanillin, could be used to synthesis Urolithin M7.</p>  <p>Purity: 99.90% Clinical Data: No Development Reported Size: 100 mg</p>
<p>2-Ketoglutaric acid (Alpha-Ketoglutaric acid)</p> <p>Cat. No.: HY-W013636</p> <p>2-Ketoglutaric acid (Alpha-Ketoglutaric acid) is an intermediate in the production of ATP or GTP in the Krebs cycle. 2-Ketoglutaric acid also acts as the major carbon skeleton for nitrogen-assimilatory reactions.</p>  <p>Purity: >97.0% Clinical Data: No Development Reported Size: 500 mg, 1 g</p>	<p>2-Ketoglutaric acid Sodium (Alpha-Ketoglutaric acid Sodium)</p> <p>Cat. No.: HY-W013636A</p> <p>2-Ketoglutaric acid Sodium (Alpha-Ketoglutaric acid Sodium) is an intermediate in the production of ATP or GTP in the Krebs cycle. 2-Ketoglutaric acid Sodium also acts as the major carbon skeleton for nitrogen-assimilatory reactions.</p>  <p>Purity: >98% Clinical Data: No Development Reported Size: 1 mg, 5 mg</p>
<p>2-Methoxycinnamic acid</p> <p>Cat. No.: HY-N1386</p> <p>2-Methoxycinnamic acid is a noncompetitive inhibitor of tyrosinase.</p>  <p>Purity: >98.0% Clinical Data: No Development Reported Size: 10 mM × 1 mL, 10 mg, 50 mg, 100 mg</p>	<p>3',4'-Dihydroxyacetophenone (3,4-DHAP)</p> <p>Cat. No.: HY-N1775</p> <p>3',4'-Dihydroxyacetophenone (3,4-DHAP), isolated from Picea Schrenkiana Needles exhibits a strong suppressive action against tyrosinase activity, with an IC_{50} of 10 μM. 3',4'-Dihydroxyacetophenone (3,4-DHAP) is a vasoactive agent and antioxidant.</p>  <p>Purity: >98% Clinical Data: No Development Reported Size: 1 mg, 5 mg</p>
<p>3,4-Dimethoxyphenol</p> <p>Cat. No.: HY-N1780</p> <p>3,4-Dimethoxyphenol is a plant-derived phenylpropanoid compound and can use as a whitening agent in cosmetics. 3,4-Dimethoxyphenol has tyrosinase-inhibiting activity. 3,4-Dimethoxyphenol has potent antioxidant effect isolated from the bacterial fermentation broth.</p>  <p>Purity: 99.51% Clinical Data: No Development Reported Size: 10 mM × 1 mL, 100 mg</p>	<p>3-(2,4-Dihydroxyphenyl)propanoic acid</p> <p>Cat. No.: HY-N1750</p> <p>3-(2,4-Dihydroxyphenyl)propanoic acid (DPPacid) is a potent and competitive tyrosinase inhibitor, inhibits L-Tyrosine and DL-DOPA with an IC_{50} and a K_i of 3.02 μM and 11.5 μM, respectively.</p>  <p>Purity: >98% Clinical Data: No Development Reported Size: 1 mg, 5 mg</p>
<p>4-Butylresorcinol (Butylresorcinol)</p> <p>Cat. No.: HY-107369</p> <p>4-Butylresorcinol is a phenol derivative which can inhibit tyrosinase with IC_{50} of 11.27 μM.</p>  <p>Purity: 99.32% Clinical Data: No Development Reported Size: 10 mM × 1 mL, 50 mg</p>	<p>Arbutin (β-Arbutin)</p> <p>Cat. No.: HY-N0192</p> <p>Arbutin (β-Arbutin) is a competitive inhibitor of tyrosinase in melanocytes, with K_i^{app} values of 1.42 mM for monophenolase; 0.9 mM for diphenolase. Arbutin is also used as depigmenting agents.</p>  <p>Purity: >98.0% Clinical Data: Phase 3 Size: 10 mM × 1 mL, 500 mg, 5 g, 10 g</p>

<p>Benzoyloxypaeoniflorin</p> <p>Cat. No.: HY-N2101</p> <p>Benzoyloxypaeoniflorin, isolated from the root of <i>Paeonia suffruticosa</i>, is a tyrosinase inhibitor against mushroom tyrosinase with IC_{50} of 0.453 mM.</p> <p>Purity: >98% Clinical Data: No Development Reported Size: 1 mg, 5 mg</p> 	<p>Benzylacetone (4-Penylbutan-2-one)</p> <p>Cat. No.: HY-W015616</p> <p>Benzylacetone is an aromatic compound from agarwood. Benzylacetone exhibits potent and reversible antityrosinase (mushroom) activity with IC_{50}s of 2.8 mM and 0.6 mM for monophenolase and diphenolase, respectively. Benzylacetone has appetite-enhancing and locomotor-reducing effects.</p> <p>Purity: >98% Clinical Data: No Development Reported Size: 1 mg, 5 mg</p> 
<p>Calcium 2-oxoglutarate</p> <p>Cat. No.: HY-W013636B</p> <p>Calcium 2-oxoglutarate is an intermediate in the production of ATP or GTP in the Krebs cycle. Calcium 2-oxoglutarate also acts as the major carbon skeleton for nitrogen-assimilatory reactions. Calcium 2-oxoglutarate is a reversible inhibitor of tyrosinase (IC_{50}=15 mM).</p> <p>Purity: >98% Clinical Data: No Development Reported Size: 1 mg, 5 mg</p> 	<p>Chimonanthine (-)-Chimonanthine)</p> <p>Cat. No.: HY-N5118</p> <p>Chimonanthine is an alkaloid of <i>Chimonanthus praecox</i>, inhibits tyrosinase and tyrosine-related protein-1 mRNA expression, and inhibits melanogenesis.</p> <p>Purity: >98% Clinical Data: No Development Reported Size: 1 mg, 5 mg</p> 
<p>D-Tyrosine</p> <p>Cat. No.: HY-Y0444</p> <p>D-Tyrosine is the D-isomer of tyrosine. D-Tyrosine negatively regulates melanin synthesis by inhibiting tyrosinase activity. D-Tyrosine inhibits biofilm formation and triggers the self-dispersal of biofilms without suppressing bacterial growth.</p> <p>Purity: >98% Clinical Data: Launched Size: 10 mM × 1 mL, 500 mg</p> 	<p>Deoxyarbutin</p> <p>Cat. No.: HY-B1461</p> <p>Deoxyarbutin is a new effective lightening ingredient, can effectively inhibit tyrosinase activity and melanin synthesis to get significant and lasting lightening effect.</p> <p>Purity: >98.0% Clinical Data: No Development Reported Size: 10 mM × 1 mL, 100 mg, 500 mg</p> 
<p>Glabrene</p> <p>Cat. No.: HY-N3943</p> <p>Glabrene, an isoflavene derived from licorice root, shows estrogen-like activity. Glabrene is a tyrosinase inhibitor with an IC_{50} of 3.5 μM.</p> <p>Purity: >98% Clinical Data: No Development Reported Size: 1 mg, 5 mg</p> 	<p>Glycolic acid</p> <p>Cat. No.: HY-W015967</p> <p>Glycolic acid is an inhibitor of tyrosinase, suppressing melanin formation and leading to a lightening of skin colour.</p> <p>Purity: >97.0% Clinical Data: No Development Reported Size: 10 mM × 1 mL, 500 mg, 1 g</p> 
<p>Gnetol</p> <p>Cat. No.: HY-126052</p> <p>Gnetol is a phenolic compound isolated from the root of <i>Gnetum ula</i> Brongn. Gnetol potently inhibits COX-1 (IC_{50} of 0.78 μM) and HDAC. Gnetol is a potent tyrosinase inhibitor with an IC_{50} of 4.5 μM for murine tyrosinase and suppresses melanin biosynthesis.</p> <p>Purity: >98% Clinical Data: No Development Reported Size: 1 mg, 5 mg</p> 	<p>Hexylresorcinol (4-Hexylresorcinol)</p> <p>Cat. No.: HY-B0986</p> <p>Hexylresorcinol is an organic compound with local anaesthetic, antiseptic and anthelmintic properties, is a potent inhibitor of mushroom tyrosinase, causing 90% loss of activity at 100 μM.</p> <p>Purity: >98.0% Clinical Data: Launched Size: 10 mM × 1 mL, 500 mg, 1 g</p> 

Kushenol A (Leachianone E)

Cat. No.: HY-N2278

Kushenol A (Leachianone E) is isolated from the root of *Sophora flavescens*. Kushenol A is a non-competitive **tyrosinase** inhibitor to block the conversion of L-tyrosine to L-DOPA, shows IC_{50} and K_i values of 1.1 μ M and 0.4 μ M, respectively.

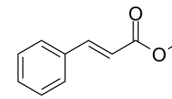


Purity: 99.84%
Clinical Data: No Development Reported
Size: 10 mM \times 1 mL, 5 mg, 10 mg

Methyl cinnamate (Methyl 3-phenylpropenoate)

Cat. No.: HY-W017212

Methyl cinnamate (Methyl 3-phenylpropenoate), an active component of *Zanthoxylum armatum*, is a widely used natural flavor compound. Methyl cinnamate (Methyl 3-phenylpropenoate) possesses antimicrobial activity and is a **tyrosinase** inhibitor that can prevent food browning.

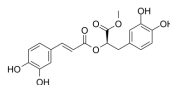


Purity: 99.39%
Clinical Data: No Development Reported
Size: 10 mM \times 1 mL, 100 mg

Methyl rosmarinat

Cat. No.: HY-N3266

Methyl rosmarinat is a noncompetitive **tyrosinase** inhibitor which is isolated from *Rabdosia serra*, with an IC_{50} of 0.28 mM for mushroom tyrosinase, and also inhibits **α -glucosidase**.

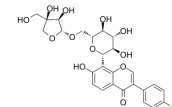


Purity: >98%
Clinical Data: No Development Reported
Size: 5 mg, 10 mg

Mirificin (Puerarin apioside)

Cat. No.: HY-N2134

Mirificin (Puerarin apioside) is a isoflavone in *Puerariae Lobatae Radix*. Mirificin inhibits **tyrosinase (TYR)** with an IC_{50} of 12.66 μ M.

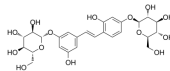


Purity: >98%
Clinical Data: No Development Reported
Size: 5 mg, 10 mg

Mulberroside A

Cat. No.: HY-N0619

Mulberroside A is one of the main bioactive constituent in mulberry (*Morus alba* L.).

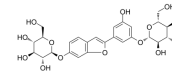


Purity: 99.53%
Clinical Data: No Development Reported
Size: 10 mM \times 1 mL, 5 mg, 10 mg, 50 mg

Mulberroside F

Cat. No.: HY-N3518

Mulberroside F is one of the main bioactive constituents in mulberry (*Morus alba* L.). Mulberroside F shows inhibitory effects on **tyrosinase** activity and on the melanin formation.

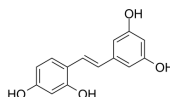


Purity: >98%
Clinical Data: No Development Reported
Size: 1 mg, 5 mg

Oxyresveratrol (trans-Oxyresveratrol)

Cat. No.: HY-N1430

Oxyresveratrol is neuroprotective and inhibits the apoptotic cell death in transient cerebral ischemia.

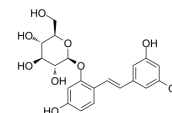


Purity: 99.91%
Clinical Data: No Development Reported
Size: 10 mM \times 1 mL, 50 mg, 100 mg, 500 mg, 1 g

Oxyresveratrol 2-O- β -D-glucopyranoside

Cat. No.: HY-N3516

Oxyresveratrol 2-O- β -D-glucopyranoside is a phenolic compound isolated from *Morus nigra* root and is an effective **tyrosinase** inhibitor with an IC_{50} of 29.75 μ M.

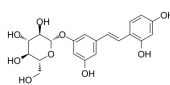


Purity: >98%
Clinical Data: No Development Reported
Size: 1 mg, 5 mg

Oxyresveratrol 3'-O- β -D-glucopyranoside

Cat. No.: HY-N3517

Oxyresveratrol 3'-O- β -D-glucopyranoside is a phenolic compound isolated from *Morus nigra* root and is an effective **tyrosinase** inhibitor with an IC_{50} of 1.64 μ M.

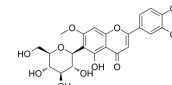


Purity: >98%
Clinical Data: No Development Reported
Size: 1 mg, 5 mg

Swertijaponin

Cat. No.: HY-N2204

Swertijaponin is a tyrosinase inhibitor, forms multiple hydrogen bonds and hydrophobic interactions with the binding pocket of tyrosinase, with an IC_{50} of 43.47 μ M.



Purity: >98%
Clinical Data: No Development Reported
Size: 1 mg, 5 mg

<p>Taxifolin (+)-Dihydroquercetin; (+)-Taxifolin</p> <p>Cat. No.: HY-N0136</p>	<p>Trifolirhizin</p> <p>Cat. No.: HY-N0616</p>
<p>Taxifolin ((+)-Dihydroquercetin) exhibits important anti-tyrosinase activity. Taxifolin exhibits significant inhibitory activity against collagenase with an IC_{50} value of 193.3 μM.</p> <p>Purity: 99.97% Clinical Data: No Development Reported Size: 10 mM \times 1 mL, 50 mg, 100 mg</p>	<p>Trifolirhizin is a pterocarpin flavonoid isolated from the roots of <i>Sophora flavescens</i>. Trifolirhizin possesses potent tyrosinase inhibitory activity with an IC_{50} of 506 μM. Trifolirhizin exhibits potential anti-inflammatory and anticancer activities.</p> <p>Purity: >99.0% Clinical Data: No Development Reported Size: 5 mg, 10 mg, 20 mg</p>
<p>Tropolone</p> <p>Cat. No.: HY-N7135</p>	<p>XMD16-5</p> <p>Cat. No.: HY-101243</p>
<p>Tropolone, a tropone derivative with a hydroxyl group in the 2-position, is a precursor of many azulene derivatives such as methyl 2-methylazulene-1-carboxylate.</p> <p>Purity: >98% Clinical Data: No Development Reported Size: 10 mM \times 1 mL, 250 mg</p>	<p>XMD16-5 is a potent TNK2 inhibitor with IC_{50} values of 16 and 77 nM for the D163E and R806Q mutations, respectively.</p> <p>Purity: 98.73% Clinical Data: No Development Reported Size: 10 mM \times 1 mL, 5 mg, 10 mg, 25 mg, 50 mg, 100 mg</p>
<p>XMD8-87 (ACK1-B19)</p> <p>Cat. No.: HY-15811</p>	<p>ZAP-180013</p> <p>Cat. No.: HY-136179</p>
<p>XMD8-87 is a potent TNK2 inhibitor with IC_{50} values of 38 and 113 nM for the D163E and R806Q mutations, respectively.</p> <p>Purity: 98.29% Clinical Data: No Development Reported Size: 10 mM \times 1 mL, 5 mg, 10 mg, 25 mg, 50 mg, 100 mg</p>	<p>ZAP-180013 is a zeta-chain-associated protein kinase 70 (ZAP-70) inhibitor with an IC_{50} of 1.8 μM. ZAP-180013 inhibits the interaction of ZAP-70 SH2 domain with immunoreceptor tyrosine-based activation motif (ITAMs).</p> <p>Purity: >98% Clinical Data: No Development Reported Size: 1 mg, 5 mg</p>
<p>α-Arbutin (4-Hydroxyphenyl α-D-glucopyranoside)</p> <p>Cat. No.: HY-N3002</p> <p>α-Arbutin (4-Hydroxyphenyl α-D-glucopyranoside) is emerging as popular and effective skin whiteners, acting as tyrosinase inhibitor.</p> <p>Purity: 99.70% Clinical Data: No Development Reported Size: 10 mM \times 1 mL, 50 mg, 100 mg</p>	