Apoptosis

Cell apoptosis, sometimes called programmed cell death, is a cellular self-destruction method to remove old and damaged cells during development and aging to protect cells from external disturbances and maintain homeostasis. Apoptosis also occurs as a defense mechanism such as in immune reactions or when cells are damaged by disease or noxious agents.

Apoptosis is controlled by many genes and involves two fundamental pathways: the extrinsic pathway, which transmits death signals by the death receptor (DR), and the intrinsic or mitochondrial pathway. The extrinsic apoptotic pathway is activated by the binding of the death ligand to DRs, including FasL, TNF-α, and TRAIL, on the plasma membrane. The DR, adaptor protein (FADD), and associated apoptosis signaling molecule (caspase-8) form the death-inducing signaling complex (DISC), thus leading to the activation of the effector caspase cascade (caspase-3, -6, and -7). The mitochondria-mediated intrinsic apoptosis pathway is regulated by Bcl-2 family proteins, including proapoptotic (Bid, Bax, Bak) and antiapoptotic proteins (Bcl-2, Bcl-xL).

Abnormalities in cell apoptosis can be a significant component of diseases such as cancer, autoimmune lymphoproliferative syndrome, AIDS, ischemia, and neurodegenerative diseases. These diseases may benefit from artificially inhibiting or activating apoptosis. A short list of potential methods of anti-apoptotic therapy includes stimulation of the IAP (inhibitors of apoptosis proteins) family of proteins, caspase inhibition, PARP (poly [ADP-ribose] polymerase) inhibition, stimulation of the PKB/Akt (protein kinase B) pathway, and inhibition of Bcl-2 proteins.

Ferroptosis and necroptosis are recently recognized forms of regulated cell death that differs considerably from apoptosis. Misregulated ferroptosis or necroptosis have also been implicated in multiple physiological and pathological processes, including cancer cell death, neurotoxicity, neurodegenerative diseases, etc.

References:
Target List in Apoptosis

- Apoptosis ........................................ 3
- Bcl-2 Family ..................................... 10
- c-Myc ............................................. 15
- Caspase .......................................... 17
- DAPK ............................................. 20
- Ferroptosis ...................................... 22
- IAP ................................................ 24
- MDM-2/p53 .................................... 27
- PKD ................................................. 33
- RIP kinase .................................... 35
- Survivin ........................................ 37
- Thymidylate Synthase ..................... 39
- TNF Receptor .................................. 41
Apoptosis is a distinctive form of cell death exhibiting specific morphological and biochemical characteristics, including cell membrane blebbing, chromatin condensation, genomic DNA fragmentation, and exposure of specific phagocytosis signaling molecules on the cell surface. Cells undergoing apoptosis differ from those dying through necrosis. Necrotic cells are usually recognized by the immune system as a danger signal and, thus, resulting in inflammation; in contrast, apoptotic death is quiet and orderly.

There are two major pathways of apoptotic cell death induction: The intrinsic pathway, also called the Bcl-2-regulated or mitochondrial pathway, is activated by various developmental cues or cytotoxic insults, such as viral infection, DNA damage and growth-factor deprivation, and is strictly controlled by the BCL-2 family of proteins. The extrinsic or death-receptor pathway is triggered by ligation of death receptors (members of the tumor necrosis factor (TNF) receptor family, such as Fas or TNF receptor-1 (TNFR1)) that contain an intracellular death domain, which can recruit and activate caspase-8 through the adaptor protein Fas-associated death domain (FADD; also known as MORT1) at the cell surface. This recruitment causes subsequent activation of downstream (effector) caspases, such as caspase-3, -6 or -7, without any involvement of the BCL-2 family.

Studies suggest that alterations in cell survival contribute to the pathogenesis of a number of human diseases, including cancer, viral infections, autoimmune diseases, neurodegenerative disorders, and AIDS (acquired immunodeficiency syndrome). Treatments designed to specifically alter the apoptotic threshold may have the potential to change the natural progression of some of these diseases.
Apoptosis Inhibitors & Modulators

(2-Hydroxypropyl)-β-cyclodextrin

Cat. No.: HY-101103

Bioactivity: (2-Hydroxypropyl)-β-cyclodextrin is a widely used drug delivery vehicle to improve the stability and bioavailability.

Purity: No Development Reported
Clinical Data: No Development Reported
Size: 1 g, 5 g, 10 g

(E)-[6]-Dehydroparadol

Cat. No.: HY-77293

Bioactivity: (E)-[6]-Dehydroparadol, extracted from patent US 9272994, compound M15, shows growth inhibition and induction of apoptosis against human cancer cells with IC_{50} values of 43.02 μM in HCT-116 cell and 41.59 μM in H-1299 cell, respectively.

Purity: 98.87%
Clinical Data: No Development Reported
Size: 10mM x 1mL in DMSO,
5 mg, 10 mg, 50 mg, 100 mg, 500 mg

Adarotene

Cat. No.: HY-14808

Bioactivity: Adarotene is an effective apoptosis inducer, which surprisingly produces DNA damage and exhibits a potent antiproliferative activity on a large panel of human tumor cells.

Purity: 99.15%
Clinical Data: No Development Reported
Size: 10mM x 1mL in DMSO,
5 mg, 10 mg, 50 mg

Apoptosis Activator 2

Cat. No.: HY-18633

Bioactivity: Apoptosis Activator 2 is a potent apoptosis activator; increases procaspase-9 processing and subsequent caspase-3 activation.

Purity: 97.06%
Clinical Data: No Development Reported
Size: 10mM x 1mL in DMSO,
5 mg, 10 mg, 100 mg

Baohuoside I

Cat. No.: HY-N0011

Bioactivity: Baohuoside I (Icarin-II; Icariside-II) is a component of Epimedium koreanum; a regulator of CXCR4 expression as well as function in cervical cancer and breast cancer cells; Apoptosis inducer.

Purity: 98.96%
Clinical Data: No Development Reported
Size: 10mM x 1mL in DMSO,
10 mg, 50 mg, 100 mg

Betulin

Cat. No.: HY-N0083

Bioactivity: Betulin (Trochol), is a sterol regulatory element-binding protein (SREBP) inhibitor with an IC_{50} of 14.5 μM in K562 cell line.

Purity: 98.0%
Clinical Data: No Development Reported
Size: 10mM x 1mL in DMSO,
50 mg, 100 mg, 200 mg

Betulinic acid

Cat. No.: HY-10529

Bioactivity: Betulinic acid is a natural pentacyclic triterpenoid, acts as a eukaryotic topoisomerase I inhibitor, with an IC_{50} of 5 μM, and possesses anti-HIV, anti-malarial, anti-inflammatory and anti-tumor properties.

Purity: 98.58%
Clinical Data: Phase 2
Size: 10mM x 1mL in DMSO,
100 mg, 200 mg, 500 mg

Bisdemethoxycurcumin

Cat. No.: HY-N0007

Bioactivity: Bisdemethoxycurcumin (Curcumin III; Didemethoxycurcumin) is a natural derivative of curcumin with anti-inflammatory and anti-cancer activities

Purity: 98.0%
Clinical Data: No Development Reported
Size: 10mM x 1mL in DMSO,
10 mg, 50 mg, 100 mg

Cholesterol myristate

Cat. No.: HY-N2338

Bioactivity: Cholesterol myristate is a natural steroid present in traditional Chinese medicine.

Purity: 98.0%
Clinical Data: No Development Reported
Size: 250 mg

Chondroitin sulfate

Cat. No.: HY-B2162

Bioactivity: Chondroitin sulfate, one of five classes of glycosaminoglycans, has been widely used in the treatment of osteoarthritis. Chondroitin sulfate reduces inflammation mediators and the apoptotic process and is able to reduce protein production of inflammatory cytokines, iNOS and MMPs.

Purity: 95.40%
Clinical Data: Launched
Size: 250 mg, 1 g
# Bioactivity

- **Cisplatin** (CDDP; cis-Diaminodichloroplatinum)
  - Purity: 99.0%
  - Clinical Data: Launched
  - Size: 100 mg, 500 mg

- **Citric acid**
  - Purity: 98.0%
  - Clinical Data: No Development Reported
  - Size: 10mM x 1mL in DMSO, 100 mg

- **Columbianadin**
  - Bioactivity: Columbianadin, a natural coumarin from, is known to have various biological activities including anti-inflammatory and anti-cancer effects.
  - Purity: 99.85%
  - Clinical Data: No Development Reported
  - Size: 10mM x 1mL in DMSO, 5 mg, 10 mg, 25 mg, 50 mg

- **Costunolide** ((+)-Costunolide; Costunolid; Costus lactone; NSC 106404)
  - Bioactivity: Costunolide, a sesquiterpene lactone, exhibits anti-inflammatory and anti-oxidant properties and mediates apoptosis.
  - Purity: 99.62%
  - Clinical Data: No Development Reported
  - Size: 10mM x 1mL in DMSO, 5 mg, 10 mg

- **Demethoxycurcumin** (Curcumin II; Desmethoxycurcumin; Monod emethoxycurcumin)
  - Bioactivity: Demethoxycurcumin(Curcumin II) is a major active curcuminoid; possess anti-inflammatory properties; also exert cytotoxic effects in human cancer cells via induction of apoptosis
  - Purity: 99.09%
  - Clinical Data: No Development Reported
  - Size: 10mM x 1mL in DMSO, 5 mg, 10 mg, 50 mg

- **Desacetylcinobufotalin** (Deacetylcinobufotalin)
  - Bioactivity: Desacetylcinobufotalin is a natural compound; apoptosis inducer and shows the marked inhibition effect to HepG2 cells and the IC50 value is 0.027µmol/ml.
  - Purity: >98%
  - Clinical Data: No Development Reported
  - Size: 5 mg, 10 mg

- **Ecteinascidin 770** (Ecteinascidine 770; Et-770)
  - Bioactivity: Ecteinascidin 770 (ET-770) is a 1,2,3,4-tetrahydroisoquinoline alkaloid with potent anti-cancer activities; inhibits U373MG cells with an IC50 of 4.83 nM.
  - Purity: 98.82%
  - Clinical Data: No Development Reported
  - Size: 10mM x 1mL in DMSO, 1 mg

- **Elesclomol** (STA-4783)
  - Bioactivity: Elesclomol is a novel potent oxidative stress inducer that elicits pro-apoptosis events among tumor cells.
  - Purity: 99.80%
  - Clinical Data: Phase 3
  - Size: 10mM x 1mL in DMSO, 5 mg, 10 mg, 50 mg, 100 mg

- **Epibrassinolide** (24-Epibrassinolide; B1105; BP55)
  - Bioactivity: Epibrassinolide is a natural brassinosteroid (BR) derivative, is a plant regulator with a similar structure to mammalian steroids. Epibrassinolide is a potential apoptotic inducer in various cancer cells without affecting the non-tumor cell growth.
  - Purity: 98.00%
  - Clinical Data: No Development Reported
  - Size: 10mM x 1mL in DMSO, 5 mg, 10 mg, 50 mg, 100 mg, 500 mg

- **Ginsenoside Rg6**
  - Bioactivity: Ginsenoside Rg6 is the component isolated from notoginseng. Ginsenoside Rg6 inhibits TNF-α-induced NF-κB transcriptional activity with an IC50 of 29.34±2.22 μM in HepG2 cells. Ginsenoside Rg6 also exhibits apoptosis-inducing effect.
  - Purity: >98%
  - Clinical Data: No Development Reported
  - Size: 5 mg, 10 mg
<table>
<thead>
<tr>
<th>Compound</th>
<th>Cat. No.</th>
<th>Bioactivity</th>
<th>Purity</th>
<th>Clinical Data</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ginsenoside Rh2</td>
<td>HY-N0605</td>
<td>Ginsenoside Rh2 is isolated from the root of Ginseng. Ginsenoside Rh2 induces the activation of caspase-8 and caspase-9. Ginsenoside Rh2 induces cancer cell apoptosis in a multi-path manner.</td>
<td>98.0%</td>
<td>No Development Reported</td>
<td>10mM x 1mL in DMSO, 5 mg, 10 mg</td>
</tr>
<tr>
<td>Ginsenoside Rh4</td>
<td>HY-N0905</td>
<td>Ginsenoside Rh4 is a rare saponin obtained from Panax notoginseng. Ginsenoside Rh4 activates Bax, caspase 3, caspase 8, and caspase 9. Ginsenoside Rh4 also induces autophagy.</td>
<td>98.40%</td>
<td>No Development Reported</td>
<td>5 mg, 10 mg</td>
</tr>
<tr>
<td>Glycochenodeoxycholic acid</td>
<td>HY-N2334</td>
<td>Glycochenodeoxycholic acid is a bile salt formed in the liver from chenodeoxycholate and glycine, used to induce hepatocyte apoptosis in research.</td>
<td>98.0%</td>
<td>No Development Reported</td>
<td>10mM x 1mL in DMSO, 10 mg</td>
</tr>
<tr>
<td>Iberin</td>
<td>HY-101413</td>
<td>Iberin, a sulfoxide analogue of sulforaphane, is a naturally occurring member of isothiocyanate family. It inhibits cell survival with an IC&lt;sub&gt;50&lt;/sub&gt; of 2.3 μM in HL60 cell.</td>
<td>98.00%</td>
<td>No Development Reported</td>
<td>10mM x 1mL in DMSO, 2 mg</td>
</tr>
<tr>
<td>Isoalantolactone</td>
<td>HY-N0780</td>
<td>Isoalantolactone is an apoptosis inducer, which also acts as an alkylating agent.</td>
<td>99.92%</td>
<td>No Development Reported</td>
<td>10mM x 1mL in DMSO, 5 mg, 10 mg</td>
</tr>
<tr>
<td>Kinetin riboside</td>
<td>HY-101055</td>
<td>Kinetin riboside, a cytokinin analog, can induce apoptosis in cancer cells. It inhibits the proliferation of HCT-15 cells with an IC&lt;sub&gt;50&lt;/sub&gt; of 2.5 μM.</td>
<td>99.02%</td>
<td>No Development Reported</td>
<td>10mM x 1mL in DMSO, 100 mg</td>
</tr>
<tr>
<td>Meisoindigo</td>
<td>HY-13680</td>
<td>Meisoindigo(Natura-α; N-Methylisoindigotin; Dian III), a derivative of Indigo naturalis, might induce apoptosis and myeloid differentiation of acute myeloid leukemia (AML).</td>
<td>96.46%</td>
<td>No Development Reported</td>
<td>10mM x 1mL in DMSO, 5 mg, 10 mg, 50 mg, 100 mg</td>
</tr>
<tr>
<td>Methyl protodioscin</td>
<td>HY-N0863</td>
<td>Methyl protodioscin(NSC-698790; Smilax saponin B) is a furostanol biglycoside with antitumor properties; shows to reduce proliferation, cause cell cycle arrest.</td>
<td>98.0%</td>
<td>No Development Reported</td>
<td>10mM x 1mL in DMSO, 5 mg, 10 mg</td>
</tr>
<tr>
<td>Myricetin</td>
<td>HY-15097</td>
<td>Myricetin is a common plant-derived flavonoid with a wide range of activities including strong anti-oxidant, anticancer, antidiabetic and anti-inflammatory activities.</td>
<td>99.41%</td>
<td>No Development Reported</td>
<td>10mM x 1mL in DMSO, 50 mg, 100 mg, 200 mg, 500 mg</td>
</tr>
<tr>
<td>NSC348884</td>
<td>HY-13915</td>
<td>NSC348884 is a nucleophosmin inhibitor disrupts oligomer formation and induces apoptosis, inhibits cell proliferation at an IC50 of 1.7-4.0 μM in distinct cancer cell lines.</td>
<td>99.92%</td>
<td>No Development Reported</td>
<td>10mM x 1mL in DMSO, 5 mg, 10 mg, 25 mg, 50 mg, 100 mg</td>
</tr>
</tbody>
</table>

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Osajin  
(CID 95168; NSC 21565)  Cat. No.: HY-N3125

**Bioactivity:** Osajin is the major bioactive isoflavone present in the fruit of Maclura pomifera with antitumor, antioxidant and anti-inflammatory activities.

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

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Purity: >98%  
Clinical Data: No Development Reported  
Size: 10 mM x 1 mL in DMSO,
5 mg, 10 mg, 25 mg

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Polydatin  
(Piceid)  Cat. No.: HY-N0120A

**Bioactivity:** Polydatin (Piceid), extracted from the roots of Polygonum cuspidatum Sieb, a widely used traditional Chinese remedies, possesses anti-inflammatory activity in several experimental models.

**Purity:** 98.42%  
**Clinical Data:** Phase 2  
**Size:** 10 mM x 1 mL in DMSO, 100 mg, 200 mg, 500 mg

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Purity: 96.10%  
Clinical Data: No Development Reported  
Size: 5 mg, 10 mg

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Sanguinarine chloride  
(Pseudocheleerythrine chloride; Sanguinarium chloride)  Cat. No.: HY-N0052A

**Bioactivity:** Sanguinarine chloride, a benzophenanthridine alkaloid derived from the root of Sanguinaria Canadensis, can stimulate apoptosis via activating the production of reactive oxygen species (ROS). Sanguinarine-induced apoptosis is associated with the activation of JNK and NF-κB.

**Purity:** 96.10%  
**Clinical Data:** No Development Reported  
**Size:** 10 mM x 1 mL in DMSO, 5 mg, 10 mg

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

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SMIP004  
Cat. No.: HY-15694

**Bioactivity:** SMIP004 is a novel inducer of cancer-cell selective apoptosis of human prostate cancer cells, it was found to downregulate SKP2 and to stabilize p27.

**Purity:** 98.81%  
**Clinical Data:** No Development Reported  
**Size:** 10 mM x 1 mL in DMSO, 10 mg, 10 mg, 50 mg, 100 mg

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Purity: 99.80%  
Clinical Data: No Development Reported  
Size: 5 mg, 10 mg, 25 mg, 50 mg, 100 mg

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Trabectedin  
(Ecteinascidin 743; ET-743; Ecteinascidin)  Cat. No.: HY-50936

**Bioactivity:** Trabectedin (Ecteinascidin-743 or ET-743) is a novel antitumour agent of marine origin with potent antitumour activity both in vitro and in vivo.

**Purity:** 99.83%  
**Clinical Data:** Launched  
**Size:** 1 mg

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Purity: 98.0%  
Clinical Data: No Development Reported  
Size: 10 mM x 1 mL in DMSO, 5 mg, 10 mg, 25 mg, 50 mg, 100 mg

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Ubiquitin Isopeptidase Inhibitor I, G5  
(NSC144303)  Cat. No.: HY-100738

**Bioactivity:** Ubiquitin Isopeptidase Inhibitor I, G5 (NSC 144303) is an apoptosis-independent caspase and apoptosis activator with IC50 values of 1.76 and 1.6 μM in E1A and E1A/C9DN cells, respectively.

**Purity:** 98.0%  
**Clinical Data:** No Development Reported  
**Size:** 10 mM x 1 mL in DMSO, 5 mg, 10 mg, 25 mg, 50 mg, 100 mg

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Bioactivity: PBOX 6 is a pyrrolo-1,5-benzoxazepine (PBOX) compound, acts as a microtubule-depolymerizing agent and an apoptotic agent.

**Purity:** 98.0%  
**Clinical Data:** No Development Reported  
**Size:** 10 mM x 1 mL in DMSO, 5 mg, 10 mg, 25 mg

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Bioactivity: Silvestrol glycone, a glycone of potential anticancer rocaglate derivative from Aglaia foetidae, induces apoptosis in LNCaP cells through the mitochondrial/apoptosome pathway without activation of executioner caspase-3 or -7, 5'myc-UTR-LUC inhibition (IC50= 0.8 nM).

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

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Bioactivity: Taurochenodeoxycholic acid is one of the main bioactive substances of animals' bile acid.

**Purity:** 99.80%  
**Clinical Data:** Launched  
**Size:** 10 mM x 1 mL in DMSO, 50 mg

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Bioactivity: Trabectedin (Ecteinascidin 743; ET-743; Ecteinascidin) is a novel antitumour agent of marine origin with potent antitumour activity both in vitro and in vivo.
<table>
<thead>
<tr>
<th><strong>Bioactivity:</strong></th>
<th>[6]-Gingerol is an active compound isolated from Ginger (Zingiber officinale Rosc), exhibits a variety of biological activities including anticancer, anti-inflammation, and anti-oxidation.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Purity:</strong></td>
<td>98.01%</td>
</tr>
<tr>
<td><strong>Clinical Data:</strong></td>
<td>No Development Reported</td>
</tr>
<tr>
<td><strong>Size:</strong></td>
<td>10mM x 1mL in DMSO, 5 mg, 10 mg, 25 mg, 50 mg, 100 mg</td>
</tr>
</tbody>
</table>
Bcl-2 is a family of evolutionarily related proteins. These proteins govern mitochondrial outer membrane permeabilization (MOMP) and can be either pro-apoptotic (Bax, Bad, Bak and Bok among others) or anti-apoptotic (including Bcl-2 proper, Bcl-xL, and Bcl-w, among an assortment of others). There are a total of 25 genes in the Bcl-2 family known to date. Human genes encoding proteins that belong to this family include: Bak1, Bax, Bal-2, Bok, Mcl-1.
## Bcl-2 Family Inhibitors & Modulators

### (+)-Apogossypol
(Apogossypol; NSC736630)  
**Cat. No.:** HY-13408

**Bioactivity:** (+)-Apogossypol is a pan-BCL-2 antagonist. (+)-Apogossypol binds to Mcl-1, Bcl-2 and Bcl-xL with EC$_{50}$ of 2.6, 2.8 and 3.69 µM, respectively.

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

### (S)-Gossypol acetic acid
((S)-(+)-Gossypol acetic acid)  
**Cat. No.:** HY-15464D

**Bioactivity:** (S)-Gossypol is the isomer of a natural product Gossypol. (S)-Gossypol binds to the BH3-binding groove of Bcl-xL and Bcl-2 proteins with high affinity.

**Purity:** 98.0%
**Clinical Data:** No Development Reported
**Size:** 10 mM x 1 mL in DMSO, 10 mg, 50 mg

### A-1155463

**Cat. No.:** HY-19725

**Bioactivity:** A-1155463 is a highly potent and selective BCL-XL inhibitor with a EC$_{50}$ value of 70 nM in Molt-4 cell.

**Purity:** 98.55%
**Clinical Data:** No Development Reported
**Size:** 10 mM x 1 mL in DMSO, 5 mg, 10 mg, 50 mg, 100 mg

### A-1210477

**Cat. No.:** HY-12468

**Bioactivity:** A-1210477 is a potent and selective inhibitor of MCL-1, and weakly binds to BCL-2 and BCL-XL with K$_i$ of 0.45 nM, 132 nM and >660 nM, respectively.

**Purity:** 98.89%
**Clinical Data:** No Development Reported
**Size:** 5 mg, 10 mg, 50 mg, 100 mg

### A-1331852

**Cat. No.:** HY-19741

**Bioactivity:** A-1331852 is an orally available BCL-XL selective inhibitor with a K$_i$ of less than 10 pM.

**Purity:** 99.21%
**Clinical Data:** No Development Reported
**Size:** 10 mM x 1 mL in DMSO, 5 mg, 10 mg, 25 mg, 50 mg, 100 mg

### A-385358

**Cat. No.:** HY-16014

**Bioactivity:** A-385358 is a selective inhibitor of Bcl-X$_L$ with K$_i$ of 0.80 and 67 nM for Bcl-X$_L$ and Bcl-2, respectively.

**Purity:** 99.05%
**Clinical Data:** No Development Reported
**Size:** 10 mM x 1 mL in DMSO, 5 mg, 10 mg, 25 mg, 50 mg, 100 mg

### ABT-199
(GDC-0199; Venetoclax)  
**Cat. No.:** HY-15531

**Bioactivity:** ABT-199 is a highly potent, orally bioavailable and Bcl-2-selective inhibitor with K$_i$ of <0.01 nM.

**Purity:** 99.80%
**Clinical Data:** Launched
**Size:** 10 mM x 1 mL in DMSO, 5 mg, 10 mg, 50 mg, 100 mg, 200 mg, 500 mg

### ABT-737

**Cat. No.:** HY-50907

**Bioactivity:** ABT-737 is a BH3 mimetic inhibitor of Bcl-xL, Bcl-2 and Bcl-w with EC$_{50}$ of 78.7 nM, 30.3 nM and 197.8 nM in cell-free assays, respectively, and shows no inhibition against Mcl-1, Bcl-8 or Bfl-1.

**Purity:** 98.38%
**Clinical Data:** No Development Reported
**Size:** 10 mM x 1 mL in DMSO, 5 mg, 10 mg, 50 mg, 100 mg, 200 mg

### AT-101
((R)-(-)-Gossypol acetic acid; (R)-Gossypol acetic acid)  
**Cat. No.:** HY-15464A

**Bioactivity:** AT-101 acetic acid is the levorotatory isomer of a natural product Gossypol. AT-101 is determined to bind to Bcl-2, Mcl-1 and Bcl-xL proteins with K$_i$ of 260±30 nM, 170±10 nM, and 480±40 nM, respectively.

**Purity:** 99.40%
**Clinical Data:** Phase 2
**Size:** 10 mM x 1 mL in DMSO, 10 mg, 50 mg

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AZD4320

Bioactivity: AZD4320 is a novel BH3-mimicking dual BCL2/BCLxL inhibitor with \( IC_{50} \) of 26 nM, 17 nM, and 170 nM for KPUM-MS3, KPUM-UH1, and STR-428 cells, respectively.

Purity: >98%
Clinical Data: No Development Reported
Size: 250 mg, 500 mg

Bak BH3

Bioactivity: Bak BH3 is derived from the BH3 domain of Bak, can antagonize the function of Bcl-xL in cells.

Purity: >98%
Clinical Data: No Development Reported
Size: 1 mg, 5 mg, 10 mg

BAM7

Bioactivity: BAM7 is a direct and selective activator of proapoptotic BAX with an \( IC_{50} \) of 3.3 \( \mu \)M.

Purity: 99.57%
Clinical Data: No Development Reported
Size: 10mM x 1mL in DMSO, 10 mg, 50 mg

Bax inhibitor peptide V5

(BIP-V5; BAX Inhibiting Peptide V5)

Bioactivity: Bax inhibitor peptide V5 is a Bax-mediated apoptosis inhibitor, used for cancer treatment.

Purity: 99.79%
Clinical Data: No Development Reported
Size: 5 mg, 10 mg, 25 mg, 50 mg

BH3I-1

(BHI1; BH 3I1)

Bioactivity: BH3I-1 is a Bcl-2 family antagonist, which inhibits the binding of the Bak BH3 peptide to Bcl-xL with a \( K_{i} \) of 2.4x0.2 \( \mu \)M in FP assay.
BH3I-1 has a \( K_{d} \) of 5.3 \( \mu \)M against the p53/MDM2 pair.

Purity: 98.0%
Clinical Data: No Development Reported
Size: 10mM x 1mL in DMSO, 2 mg, 5 mg, 10 mg, 25 mg, 50 mg

BM 957

Bioactivity: BM 957 is a potent Bcl-2 and Bcl-xL inhibitor, with \( K_{i} \)s of 1.2, <1 nM and \( IC_{50} \)s of 5.4, 6.0 nM respectively.

Purity: >98%
Clinical Data: No Development Reported
Size: 250 mg, 500 mg

Bz 423

(BZ48)

Bioactivity: Bz 423 is a pro-apoptotic 1,4-benzodiazepine with therapeutic properties in murine models of lupus demonstrating selectivity for autoreactive lymphocytes, and activates Bax and Bak.

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

FX1

Bioactivity: FX1 is a potent and specific BCL6 inhibitor, with an \( IC_{50} \) of around 35 \( \mu \)M.

Purity: 98.0%
Clinical Data: No Development Reported
Size: 10mM x 1mL in DMSO, 5 mg, 10 mg, 25 mg, 50 mg, 100 mg, 200 mg

Gambogic Acid

(Beta-Guttiferrin)

Bioactivity: Gambogic acid is derived from the gamboges resin of the tree Garcinia hanburyi. Gambogic acid inhibits Bcl-X\(_L\), Bcl-2, Bcl-W, Bcl-B, Bfl-1 and Mcl-1 with \( IC_{50} \)s of 1.47 \( \mu \)M, 1.21 \( \mu \)M, 2.02 \( \mu \)M, 0.66 \( \mu \)M, 1.06 \( \mu \)M and 0.79 \( \mu \)M.

Purity: 95.06%
Clinical Data: No Development Reported
Size: 10mM x 1mL in DMSO, 5 mg, 10 mg, 50 mg

Ginsenoside Rh4

Bioactivity: Ginsenoside Rh4 is a rare saponin obtained from Panax notoginseng. Ginsenoside Rh4 activates Bax, caspase 3, caspase 8, and caspase 9. Ginsenoside Rh4 also induces autophagy.

Purity: 98.40%
Clinical Data: No Development Reported
Size: 5 mg, 10 mg

Tel: 609-228-6898 Fax: 609-228-5909 Email: sales@medchemexpress.com
| **Gossypol**  
(BL 193) | Cat. No.: HY-13407 |
<table>
<thead>
<tr>
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<tbody>
<tr>
<td><strong>Bioactivity:</strong></td>
<td>Gossypol, a natural product isolated from cottonseeds and roots, binds to Bcl-xl protein and Bcl-2 protein with $K_i$ of 0.5-0.6 μM and 0.2-0.3 mM, respectively.</td>
</tr>
<tr>
<td><strong>Purity:</strong></td>
<td>&gt;98%</td>
</tr>
<tr>
<td><strong>Clinical Data:</strong></td>
<td>Phase 3</td>
</tr>
<tr>
<td><strong>Size:</strong></td>
<td>100 mg, 200 mg, 500 mg</td>
</tr>
</tbody>
</table>

| **Gossypol acetic acid**  
((±)-Gossypol-acetic acid) | Cat. No.: HY-17510 |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bioactivity:</strong></td>
<td>Gossypol, a natural product isolated from cottonseeds and roots, binds to Bcl-xl protein and Bcl-2 protein with $K_i$ of 0.5-0.6 μM and 0.2-0.3 mM, respectively.</td>
</tr>
<tr>
<td><strong>Purity:</strong></td>
<td>99.42%</td>
</tr>
<tr>
<td><strong>Clinical Data:</strong></td>
<td>Phase 3</td>
</tr>
<tr>
<td><strong>Size:</strong></td>
<td>10mM x 1mL in DMSO, 200 mg, 500 mg</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>HA14-1</strong></th>
<th>Cat. No.: HY-12011</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bioactivity:</strong></td>
<td>HA14-1 is a Bcl-2/Bcl-X&lt;sub&gt;i&lt;/sub&gt; antagonist. HA14-1 binds the designated pocket on Bcl-2 with the IC&lt;sub&gt;50&lt;/sub&gt; of ±0 μM in competing with the Bcl-2 binding of Flu-BakBH3, and inhibits its function.</td>
</tr>
<tr>
<td><strong>Purity:</strong></td>
<td>98.0%</td>
</tr>
<tr>
<td><strong>Clinical Data:</strong></td>
<td>No Development Reported</td>
</tr>
<tr>
<td><strong>Size:</strong></td>
<td>10mM x 1mL in DMSO, 10 mg, 50 mg</td>
</tr>
</tbody>
</table>

| **Marinopyrrole A**  
(Maritoclax; (±)-Marinopyrrole ) | Cat. No.: HY-15613 |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bioactivity:</strong></td>
<td>Marinopyrrole A is a novel and specific Mcl-1 inhibitor with an IC&lt;sub&gt;50&lt;/sub&gt; value of 10.1 μM, and shows &gt;8 fold selectivity than BCL-xl (IC&lt;sub&gt;50&lt;/sub&gt; &gt; 80 μM).</td>
</tr>
<tr>
<td><strong>Purity:</strong></td>
<td>99.94%</td>
</tr>
<tr>
<td><strong>Clinical Data:</strong></td>
<td>No Development Reported</td>
</tr>
<tr>
<td><strong>Size:</strong></td>
<td>10mM x 1mL in DMSO, 5 mg, 10 mg, 50 mg, 100 mg</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Mcl1-IN-1</strong></th>
<th>Cat. No.: HY-16669</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bioactivity:</strong></td>
<td>Mcl1-IN-1 is an inhibitor of myeloid cell factor 1 (Mcl-1) (IC&lt;sub&gt;50&lt;/sub&gt;=2.4 μM).</td>
</tr>
<tr>
<td><strong>Purity:</strong></td>
<td>96.64%</td>
</tr>
<tr>
<td><strong>Clinical Data:</strong></td>
<td>No Development Reported</td>
</tr>
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<td><strong>Size:</strong></td>
<td>10mM x 1mL in DMSO, 5 mg, 10 mg, 50 mg, 100 mg</td>
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<table>
<thead>
<tr>
<th><strong>Mcl1-IN-2</strong></th>
<th>Cat. No.: HY-12826</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bioactivity:</strong></td>
<td>Mcl1-IN-2 is an inhibitor of myeloid cell factor 1 (Mcl-1).</td>
</tr>
<tr>
<td><strong>Purity:</strong></td>
<td>95.0%</td>
</tr>
<tr>
<td><strong>Clinical Data:</strong></td>
<td>No Development Reported</td>
</tr>
<tr>
<td><strong>Size:</strong></td>
<td>10mM x 1mL in DMSO, 5 mg, 10 mg, 50 mg</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Mcl1-IN-3</strong></th>
<th>Cat. No.: HY-111468</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bioactivity:</strong></td>
<td>Mcl1-IN-3 is an inhibitor of Mcl1 extracted from patent WO2015153959A2, compound example 57; has an IC&lt;sub&gt;50&lt;/sub&gt; and $K_i$ of 0.67 and 0.13 μM, respectively.</td>
</tr>
<tr>
<td><strong>Purity:</strong></td>
<td>&gt;98%</td>
</tr>
<tr>
<td><strong>Clinical Data:</strong></td>
<td>No Development Reported</td>
</tr>
<tr>
<td><strong>Size:</strong></td>
<td>250 mg, 500 mg</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Mcl1-IN-4</strong></th>
<th>Cat. No.: HY-111467</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bioactivity:</strong></td>
<td>Mcl1-IN-4 is an inhibitor of Mcl1 with an IC&lt;sub&gt;50&lt;/sub&gt; of 0.2 μM.</td>
</tr>
<tr>
<td><strong>Purity:</strong></td>
<td>&gt;98%</td>
</tr>
<tr>
<td><strong>Clinical Data:</strong></td>
<td>No Development Reported</td>
</tr>
<tr>
<td><strong>Size:</strong></td>
<td>250 mg, 500 mg</td>
</tr>
</tbody>
</table>

| **MIM1**  
(Inhibitor of Mcl-1) | Cat. No.: HY-16695 |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bioactivity:</strong></td>
<td>MIM-1 is an inhibitor of myeloid cell factor 1 (Mcl-1).</td>
</tr>
<tr>
<td><strong>Purity:</strong></td>
<td>&gt;98%</td>
</tr>
<tr>
<td><strong>Clinical Data:</strong></td>
<td>No Development Reported</td>
</tr>
<tr>
<td><strong>Size:</strong></td>
<td>5 mg, 10 mg</td>
</tr>
</tbody>
</table>

| **Navitoclax**  
(ABT-263) | Cat. No.: HY-10087 |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bioactivity:</strong></td>
<td>Navitoclax is a potent and orally bioavailable Bcl-2 family protein inhibitor that binds with high affinity ($K_i$ &lt; 1 nM) to multiple anti-apoptotic Bcl-2 family proteins including Bcl-x&lt;sub&gt;i&lt;/sub&gt;, Bcl-2 and Bcl-w.</td>
</tr>
<tr>
<td><strong>Purity:</strong></td>
<td>99.80%</td>
</tr>
<tr>
<td><strong>Clinical Data:</strong></td>
<td>Phase 2</td>
</tr>
<tr>
<td><strong>Size:</strong></td>
<td>10mM x 1mL in DMSO, 5 mg, 10 mg, 25 mg, 50 mg, 100 mg</td>
</tr>
</tbody>
</table>
Bioactivity: Obatoclax is a BCL-2 family antagonist, which binds this cytosolic form of BCL-2 with a Kᵢ of ≈220 nM. Obatoclax inhibits this interaction for all BCL-XL, MCL-1, BCL-w, A1, and BCL-b (Kᵢ=1-7 μM).

Purity: 99.20%
Clinical Data: Phase 3
Size: 10mM x 1mL in DMSO, 5 mg, 10 mg, 50 mg, 100 mg

Bioactivity: PUMA BH3 is a p53 upregulated modulator of apoptosis (PUMA) BH3 domain peptide, acts as a direct activator of Bak, with a Kᵢ of 26 nM.

Purity: >98%
Clinical Data: No Development Reported
Size: 10mM x 1mL in DMSO, 1 mg, 5 mg, 10 mg, 25 mg, 50 mg, 100 mg

Bioactivity: Pyridoclax (MR-29072) is a potent Mcl-1 inhibitor with Kᵢ value of 25 nM.

Purity: >98%
Clinical Data: No Development Reported
Size: 10mM x 1mL in DMSO, 5 mg, 10 mg, 50 mg, 100 mg

Bioactivity: Sabutoclax (BI-97C1) is a potent and effective Bcl-2 Family (Bcl-2, Bcl-XL, Mcl-1, Bfl-1) inhibitor with IC₅₀ of 0.32 μM, 0.31 μM, 0.20 μM, and 0.62 μM, respectively.

Purity: >98%
Clinical Data: No Development Reported
Size: 250 mg, 500 mg

Bioactivity: Thevetiaflavone could upregulate the expression of Bcl2 and downregulate that of Bax and caspase3.

Purity: >98%
Clinical Data: No Development Reported
Size: 10mM x 1mL in DMSO, 5 mg, 10 mg, 50 mg, 100 mg

Bioactivity: TW-37 is a potent Bcl-2 inhibitor with Kᵢ values of 260, 290 and 1110 nM for Mcl-1, Bcl-2 and Bcl-xL, respectively.

Purity: 98.50%
Clinical Data: No Development Reported
Size: 10mM x 1mL in DMSO, 10 mg, 50 mg

Bioactivity: WEHI-539 is a selective inhibitor of Bcl-XL with IC₅₀ of 1.1 nM.

Purity: >98%
Clinical Data: No Development Reported
Size: 5 mg, 10 mg, 50 mg, 100 mg

Bioactivity: WEHI-539 hydrochloride is a selective inhibitor of Bcl-XL with IC₅₀ of 1.1 nM.

Purity: 97.85%
Clinical Data: No Development Reported
Size: 10mM x 1mL in DMSO, 5 mg, 10 mg, 50 mg
c-Myc is the master transcription factor for cell proliferation and is involved in numerous hematological and solid cancers. Proto-oncogene c-Myc, encoding one of the most important transcription factors, plays a pivotal role in tumor initiation and progression. c-Myc regulates hundreds of disparate target genes that participate numerous biological effects, such as cell proliferation, apoptosis, differentiation, and stem cell self-renewal. c-Myc is one of the four factors used in reprogramming somatic cells to induce pluripotent stem (iPS) cells and is implicated in maintaining cancer stem-like cells (CSCs).

The transcription factor c-Myc is a key mediator of the Notch signaling–regulated T cell differentiation. In a well-established in vitro differentiation model of T lymphocytes from hematopoietic stem cells, Notch1 and 4 directly promote c-Myc expression; dominant-negative (DN) c-Myc inhibits early T cell differentiation. Moreover, the c-Myc expression activated by Notch signaling increases the expression of survivin, an inhibitor of apoptosis (IAP) protein.

c-Myc gene, as a transcription factor of hTERT, is over expressed in a variety of tumors. c-Myc and hTERT expression in local recurrent gastric cancer tissues is much higher than in primary gastric cancer tissues at the protein and mRNA levels.
# c-Myc Inhibitors & Modulators

## 10058-F4

**Cat. No.: HY-12702**

**Bioactivity:** 10058-F4 is a c-Myc inhibitor that specifically inhibits the c-Myc-Max interaction and prevents transactivation of c-Myc target gene expression.

**Purity:** 99.92%

**Clinical Data:** No Development Reported

**Size:** 10mM x 1mL in DMSO, 5 mg, 10 mg, 50 mg

## 10074-G5

**Cat. No.: HY-100996**

**Bioactivity:** 10074-G5 is an inhibitor of c-Myc-Max dimerization with an IC₅₀ of 146 μM.

**Purity:** 97.07%

**Clinical Data:** No Development Reported

**Size:** 10mM x 1mL in DMSO, 5 mg, 10 mg, 25 mg, 50 mg, 100 mg

## KJ Pyr 9

**Cat. No.: HY-19735**

**Bioactivity:** KJ Pyr 9 is a novel inhibitor of MYC. The Kᵣ of KJ Pyr 9 for MYC in vitro is 6.5±1.0 nM, as determined by backscattering interferometry.

**Purity:** 98.98%

**Clinical Data:** No Development Reported

**Size:** 10mM x 1mL in DMSO, 5 mg, 10 mg, 50 mg, 100 mg

## KSI-3716

**Cat. No.: HY-12703**

**Bioactivity:** KSI-3716 is a c-Myc inhibitor.

**Purity:** >98%

**Clinical Data:** No Development Reported

**Size:** 250 mg, 500 mg

## ML327

**Cat. No.: HY-103038**

**Bioactivity:** ML327 is a blocker of MYC which can also de-repress E-cadherin transcription and reverse Epithelial-to-Mesenchymal Transition (EMT).

**Purity:** 98.04%

**Clinical Data:** No Development Reported

**Size:** 10mM x 1mL in DMSO, 1 mg, 5 mg, 10 mg, 25 mg, 50 mg, 100 mg

## Mycro 3

**Cat. No.: HY-100669**

**Bioactivity:** Mycro 3 is potent and selective for c-Myc in whole cell assays.

**Purity:** 98.63%

**Clinical Data:** No Development Reported

**Size:** 10mM x 1mL in DMSO, 2 mg, 5 mg, 10 mg, 25 mg, 50 mg, 100 mg
Caspase is a family of cysteine proteases that play essential roles in apoptosis (programmed cell death), necrosis, and inflammation. There are two types of apoptotic caspases: initiator (apical) caspases and effector (executioner) caspases. Initiator caspases (e.g., CASP2, CASP8, CASP9, and CASP10) cleave inactive pro-forms of effector caspases, thereby activating them. Effector caspases (e.g., CASP3, CASP6, CASP7) in turn cleave other protein substrates within the cell, to trigger the apoptotic process. The initiation of this cascade reaction is regulated by caspase inhibitors. CASP4 and CASP5, which are overexpressed in some cases of vitiligo and associated autoimmune diseases caused by NALP1 variants, are not currently classified as initiator or effector in MeSH, because they are inflammatory enzymes that, in concert with CASP1, are involved in T-cell maturation.
### Caspase Inhibitors & Modulators

<table>
<thead>
<tr>
<th>Inhibitor</th>
<th>Cat. No.</th>
<th>Bioactivity</th>
<th>Purity</th>
<th>Clinical Data</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2-HBA</strong></td>
<td>HY-103667</td>
<td>2-HBA is a potent inducer of NAD(P)H:quinone acceptor oxidoreductase 1 (NQO1) which can also activate caspase-3 and caspase-10.</td>
<td>98.83%</td>
<td>No Development Reported</td>
<td>10mM x 1mL in DMSO, 5 mg, 10 mg, 25 mg, 50 mg, 100 mg</td>
</tr>
<tr>
<td><strong>Ac-DEVD-CHO</strong></td>
<td>HY-P1001</td>
<td>Ac-DEVD-CHO is a specific caspase-3 inhibitor with a $K_i$ value of 230 pM.</td>
<td>98.84%</td>
<td>No Development Reported</td>
<td>10mM x 1mL in DMSO, 1 mg, 5 mg</td>
</tr>
<tr>
<td><strong>Biotin-VAD-FMK</strong></td>
<td>HY-100894</td>
<td>Biotin-VAD-FMK is a cell permeable, irreversible biotin-labeled caspase inhibitor, used to identify active caspases in cell lysates.</td>
<td>98.0%</td>
<td>No Development Reported</td>
<td>1 mg, 5 mg</td>
</tr>
<tr>
<td><strong>BOC-D-FMK</strong></td>
<td>HY-13229</td>
<td>Boc-D-FMK is a cell-permeable, irreversible and broad spectrum caspase inhibitor, inhibits apoptosis stimulated by TNF-α with an IC$_{50}$ of 39 µM.</td>
<td>95.0%</td>
<td>No Development Reported</td>
<td>10mM x 1mL in DMSO, 1 mg, 5 mg, 10 mg, 50 mg</td>
</tr>
<tr>
<td><strong>EP1013</strong></td>
<td>HY-10397</td>
<td>EP1013 is a broad-spectrum caspase selective inhibitor, used in the research of type 1 diabetes.</td>
<td>97.76%</td>
<td>No Development Reported</td>
<td>10mM x 1mL in DMSO, 5 mg, 10 mg, 50 mg, 100 mg</td>
</tr>
<tr>
<td><strong>Ginsenoside Rh2</strong></td>
<td>HY-N0605</td>
<td>Ginsenoside Rh2 is isolated from the root of Ginseng. Ginsenoside Rh2 induces the activation of caspase-8 and caspase-9. Ginsenoside Rh2 induces cancer cell apoptosis in a multi-path manner.</td>
<td>98.0%</td>
<td>No Development Reported</td>
<td>10mM x 1mL in DMSO, 5 mg, 10 mg</td>
</tr>
<tr>
<td><strong>Ginsenoside Rh4</strong></td>
<td>HY-N0905</td>
<td>Ginsenoside Rh4 is a rare saponin obtained from Panax notoginseng. Ginsenoside Rh4 activates Bax, caspase 3, caspase 8, and caspase 9. Ginsenoside Rh4 also induces autophagy.</td>
<td>98.40%</td>
<td>No Development Reported</td>
<td>5 mg, 10 mg</td>
</tr>
<tr>
<td><strong>ML132</strong></td>
<td>HY-12412</td>
<td>ML132 (NCGC 00185682) is a potent and selective caspase 1 inhibitor with an IC$_{50}$ of 0.316 nM.</td>
<td>&gt;98%</td>
<td>No Development Reported</td>
<td>250 mg, 500 mg</td>
</tr>
<tr>
<td><strong>PAC-1</strong></td>
<td>HY-13523</td>
<td>PAC-1 is an activator of procaspase-3 induces apoptosis in cancer cells with EC$_{50}$ of 2.08 µM.</td>
<td>95.98%</td>
<td>Phase 1</td>
<td>10mM x 1mL in DMSO, 10 mg, 50 mg</td>
</tr>
<tr>
<td><strong>Q-VD-OPh</strong></td>
<td>HY-12305</td>
<td>Q-VD-OPh (QVD-OPH; Quinoline-Val-As p-Difluorophenoxymethylketone) is an irreversible pan-caspase inhibitor with potent antipapoptotic properties, inhibits caspase 7 with an IC$_{50}$ of 48 nM and 25-400 nM for other caspases including caspase 1, 3, 8, 9, 10, and 12. Q-VD-OPh is able to cross the blood-brain barrier.</td>
<td>99.26%</td>
<td>No Development Reported</td>
<td>10mM x 1mL in DMSO, 1 mg, 5 mg, 10 mg, 25 mg, 50 mg</td>
</tr>
</tbody>
</table>

**Ac-DEVD-CHO** is a specific caspase-3 inhibitor with a $K_i$ value of 230 pM.

**Boc-D-FMK** is a cell-permeable, irreversible and broad spectrum caspase inhibitor, inhibits apoptosis stimulated by TNF-α with an IC$_{50}$ of 39 µM.

**EP1013** is a broad-spectrum caspase selective inhibitor, used in the research of type 1 diabetes.


**Ginsenoside Rh4** is a rare saponin obtained from Panax notoginseng. Ginsenoside Rh4 activates Bax, caspase 3, caspase 8, and caspase 9. Ginsenoside Rh4 also induces autophagy.

**ML132** (NCGC 00185682) is a potent and selective caspase 1 inhibitor with an IC$_{50}$ of 0.316 nM.

**PAC-1** is an activator of procaspase-3 induces apoptosis in cancer cells with EC$_{50}$ of 2.08 µM.

**Q-VD-OPh** (QVD-OPH; Quinoline-Val-As p-Difluorophenoxymethylketone) is an irreversible pan-caspase inhibitor with potent antipapoptotic properties, inhibits caspase 7 with an IC$_{50}$ of 48 nM and 25-400 nM for other caspases including caspase 1, 3, 8, 9, 10, and 12. Q-VD-OPh is able to cross the blood-brain barrier.
Taurochenedoxycholic acid (12-Deoxycholyltaurine) Cat. No.: HY-N2027

Bioactivity: Taurochenedoxycholic acid is one of the main bioactive substances of animals’ bile acid.

Purity: 99.80%
Clinical Data: Launched
Size: 10mM x 1mL in DMSO, 50 mg

Tauroursodeoxycholate Sodium (Sodium tauroursodeoxycholate; Tauroursodeoxycholic acid sodium salt) Cat. No.: HY-19696A

Bioactivity: Tauroursodeoxycholate Sodium is an endoplasmic reticulum (ER) stress inhibitor. Tauroursodeoxycholate significantly reduces expression of apoptosis molecules, such as caspase-3 and caspase-12. Tauroursodeoxycholate also inhibits ERK.

Purity: 98.02%
Clinical Data: Launched
Size: 10mM x 1mL in Water, 100 mg, 500 mg

Thevetiaflavone (Apigenin-5-methyl ether) Cat. No.: HY-N1157

Bioactivity: Thevetiaflavone could upregulate the expression of Bcl2 and downregulate that of Bax and caspase3.

Purity: >98%
Clinical Data: No Development Reported
Size:

VX-765 (Belnacasan) Cat. No.: HY-13205

Bioactivity: VX-765 is an orally active IL-converting enzyme/caspase-1 inhibitor, inhibits IL-1β release with similar potency in PBMCs from FCAS (IC\textsubscript{50} =0.99±0.29 μM) and control (IC\textsubscript{50}=1.1±0.61 μM) subjects.

Purity: 99.46%
Clinical Data: Phase 2
Size: 10mM x 1mL in DMSO, 5 mg, 10 mg, 50 mg, 100 mg

Z-DEVD-FMK (Caspase-3 Inhibitor) Cat. No.: HY-12466

Bioactivity: Z-DEVD-FMK is a specific and irreversible caspase-3 inhibitor with IC\textsubscript{50} of 18 μM.

Purity: 98.0%
Clinical Data: No Development Reported
Size: 10mM x 1mL in DMSO, 1 mg, 5 mg, 10 mg

Z-IETD-FMK Cat. No.: HY-101297

Bioactivity: Z-IETD-FMK is a selective and cell permeable caspase 8 inhibitor.

Purity: 98.0%
Clinical Data: No Development Reported
Size: 10mM x 1mL in DMSO, 1 mg, 5 mg

Z-VAD(OMe)-FMK (Z-Val-Ala-Asp(OMe)-FMK) Cat. No.: HY-16658

Bioactivity: Z-VAD(OMe)-FMK is a cell-permeable and irreversible pan-caspase inhibitor.

Purity: 98.0%
Clinical Data: No Development Reported
Size: 10mM x 1mL in DMSO, 1 mg, 5 mg, 10 mg

www.MedChemExpress.com
DAPK (Death-associated protein kinase) is the founding member of a newly classified family of Ser/Thr kinases, whose members not only possess significant homology in their catalytic domains, but also share cell death-associated functions. The realization that DAPk is a tumor suppressor gene, whose expression is lost in multiple tumor types, has spurred a flurry of interest in the kinase family and produced an impressive body of literature concerning its function, regulation, and connection to disease. The DAPk family has been linked to several cell death-related signaling pathways, and functions other than cell death have also been proposed.
# DAPK Inhibitors & Modulators

<table>
<thead>
<tr>
<th>TC-DAPK 6 (DAPK inhibitor)</th>
<th>Cat. No.: HY-15513</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bioactivity:</strong></td>
<td>TC-DAPK 6 is a potent, ATP-competitive, and highly selective DAPK inhibitor ($IC_{50}=69$ and 225 nM against DAPK1 and DAPK3, respectively, with 10 μM ATP).</td>
</tr>
<tr>
<td><strong>Purity:</strong></td>
<td>95.0%</td>
</tr>
<tr>
<td><strong>Clinical Data:</strong></td>
<td>No Development Reported</td>
</tr>
<tr>
<td><strong>Size:</strong></td>
<td>10mM x 1mL in DMSO, 10 mg, 50 mg</td>
</tr>
</tbody>
</table>
Ferroptosis is a non-apoptotic form of regulated cell death. It is distinct from other regulated cell death phenotypes, such as apoptosis and necroptosis. Ferroptosis is characterized by extensive lipid peroxidation, which can be suppressed by iron chelators or lipophilic antioxidants. Mechanistically, Ferroptosis inducers are divided into two classes: (1) inhibitors of cystine import via system \( x_c^- \) (e.g., Erastin), which subsequently causes depletion of glutathione (GSH), and (2) covalent inhibitors (e.g., (1S, 3R)-RSL3) of glutathione peroxidase 4 (GPX4). Since GPX4 reduces lipid hydroperoxides using GSH as a co-substrate, both compound classes ultimately result in loss of GPX4 activity, followed by elevated levels of lipid reactive oxygen species (ROS) and consequent cell death.

Ferroptosis is an iron- and ROS-dependent form of regulated cell death (RCD). Misregulated Ferroptosis has been implicated in multiple physiological and pathological processes, including cancer cell death, neurotoxicity, neurodegenerative diseases, acute renal failure, drug-induced hepatotoxicity, hepatic and heart ischemia/reperfusion injury, and T-cell immunity.
## Ferroptosis Inhibitors & Modulators

<table>
<thead>
<tr>
<th></th>
<th>Cat. No.: HY-15763</th>
<th>Cat. No.: HY-100579</th>
<th>Cat. No.: HY-103087</th>
<th>Cat. No.: HY-12726</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Erastin</strong></td>
<td><strong>Bioactivity:</strong> Erastin is a ferroptosis activator.</td>
<td><strong>Bioactivity:</strong> Ferrostatin-1 is a potent inhibitor of ferroptosis with an $EC_{50}$ of 60 nM.</td>
<td><strong>Bioactivity:</strong> FIN56 is a specific inducer of ferroptosis.</td>
<td><strong>Bioactivity:</strong> Liproxstatin-1 is a potent ferroptosis inhibitor, with $IC_{50}$ of appr 38 nM.</td>
</tr>
<tr>
<td>Purity:</td>
<td>99.54%</td>
<td>99.72%</td>
<td>98.03%</td>
<td>98.38%</td>
</tr>
<tr>
<td>Clinical Data:</td>
<td>No Development Reported</td>
<td>No Development Reported</td>
<td>No Development Reported</td>
<td>No Development Reported</td>
</tr>
<tr>
<td>Size:</td>
<td>10mM x 1mL in DMSO, 5 mg, 10 mg, 50 mg, 100 mg</td>
<td>10mM x 1mL in DMSO, 5 mg, 10 mg, 25 mg, 50 mg</td>
<td>10mM x 1mL in DMSO, 5 mg, 10 mg, 25 mg, 50 mg</td>
<td>10mM x 1mL in DMSO, 5 mg, 10 mg, 50 mg, 100 mg</td>
</tr>
</tbody>
</table>
IAP (Inhibitors of Apoptosis) is a family of functionally and structurally related proteins, which serve as endogenous inhibitors of programmed cell death (apoptosis). A common feature of all IAPs is the presence of a BIR in one to three copies. The human IAP family consists of 8 members, and IAP homologs have been identified in numerous organisms. The members of the IAPs included IAPs, Cp-IAP, Op-IAP, XIAP, c-IAP1, C-IAP2, NAIP, Livin and Survivin. The best characterized IAP is XIAP, which binds caspase-9, caspase-3 and caspase 7, thereby inhibiting their activation and preventing apoptosis. Also cIAP1 and cIAP2 have been shown to bind caspases, although how the IAPs inhibit apoptosis mechanistically at the molecular level is not completely understood.
### IAP Inhibitors & Modulators

#### ASTX660
- **Cat. No.:** HY-109565
- **Bioactivity:** ASTX660 is an orally bioavailable dual antagonist of cellular inhibitor of apoptosis protein (cIAP) and X-linked inhibitor of apoptosis protein (XIAP).
- **Purity:** 98.79%
- **Clinical Data:** Phase 2
- **Size:** 10mM x 1mL in DMSO, 1 mg, 5 mg, 10 mg, 25 mg

#### AZD5582
- **Cat. No.:** HY-12600
- **Bioactivity:** AZD5582 is a novel class of dimeric Smac mimetics as potent IAP antagonist; binds potently to the BIR3 domains of cIAP1, cIAP2, and XIAP (IC50 = 15, 21, and 15 nM, respectively).
- **Purity:** 98.13%
- **Clinical Data:** No Development Reported
- **Size:** 10mM x 1mL in DMSO, 5 mg, 10 mg, 50 mg

#### Birinapant
- **Cat. No.:** HY-16591
- **Bioactivity:** Birinapant a bivalent Smac mimic is a potent antagonist for XIAP and cIAP with $K_d$ values of 45 nM and < 1 nM, respectively.
- **Purity:** 99.84%
- **Clinical Data:** Phase 2
- **Size:** 10mM x 1mL in DMSO, 5 mg, 10 mg, 50 mg, 100 mg

#### BV6
- **Cat. No.:** HY-16701
- **Bioactivity:** BV6 is an antagonist of cIAP1 and XIAP, members of the inhibitors of apoptosis (IAP) family.
- **Purity:** 99.25%
- **Clinical Data:** No Development Reported
- **Size:** 10mM x 1mL in DMSO, 5 mg, 10 mg, 50 mg, 100 mg

#### CUDC-427
- **Cat. No.:** HY-15835
- **Bioactivity:** CUDC-427 is a potent second-generation pan-selective IAP antagonist, used for treatment of various cancers.
- **Purity:** 99.60%
- **Clinical Data:** Phase 1
- **Size:** 10mM x 1mL in DMSO, 5 mg, 10 mg, 50 mg

#### Embelin
- **Cat. No.:** HY-17473
- **Bioactivity:** Embelin is a cell-permeable benzoquinone compound that exhibits antitumor properties
- **Purity:** 98.02%
- **Clinical Data:** Launched
- **Size:** 10mM x 1mL in DMSO, 10 mg, 50 mg

#### GDC-0152
- **Cat. No.:** HY-13638
- **Bioactivity:** GDC-0152 is a potent inhibitor of IAPs which binds to the XIAP BIR3 domain, the BIR domain of ML-IAP, and the BIR3 domains of cIAP1 and cIAP2 with $K_i$ values of 28, 14, 17, and 43 nM, respectively.
- **Purity:** 98.73%
- **Clinical Data:** Phase 1
- **Size:** 10mM x 1mL in DMSO, 10 mg, 50 mg

#### LCL161
- **Cat. No.:** HY-15518
- **Bioactivity:** LCL161 is a novel IAP inhibitor, inhibits XIAP activity in HEK293 cell with IC$_{50}$ of 35 nM, also inhibits cIAP1 activity in MDA-MB-231 cell with IC$_{50}$ of 0.4 nM.
- **Purity:** 99.17%
- **Clinical Data:** Phase 2
- **Size:** 10mM x 1mL in DMSO, 5 mg, 10 mg, 50 mg, 100 mg

#### MX69
- **Cat. No.:** HY-100892
- **Bioactivity:** MX69 is an inhibitor of MDM2/XIAP, used for cancer treatment.
- **Purity:** 98.59%
- **Clinical Data:** No Development Reported
- **Size:** 10mM x 1mL in DMSO, 1 mg, 5 mg, 10 mg, 50 mg, 100 mg

#### SM-164
- **Cat. No.:** HY-15989
- **Bioactivity:** SM-164 is a cell-permeable Smac mimetic compound. SM-164 binds to XIAP protein containing both the BIR2 and BIR3 domains with an IC$_{50}$ value of 1.39 nM and functions as an extremely potent antagonist of XIAP.
- **Purity:** 98.0%
- **Clinical Data:** No Development Reported
- **Size:** 5 mg, 10 mg, 50 mg, 100 mg
### SM-164 Hydrochloride

**Bioactivity:** SM-164 Hydrochloride is a cell-permeable Smac mimetic compound. SM-164 binds to XIAP protein containing both the BIR2 and BIR3 domains with an IC₅₀ value of 1.39 nM and functions as an extremely potent antagonist of XIAP.

**Purity:** 98.44%

**Clinical Data:** No Development Reported

**Size:** 10 mM x 1 mL in Water, 5 mg, 10 mg, 50 mg

### UC-112

**Bioactivity:** UC-112 is a novel potent IAP(Inhibitor of apoptosis) inhibitor; potently inhibit cell growth in two human melanoma (A375 and M14) and two human prostate (PC-3 and DU145) cancer cell lines(IC₅₀=0.7-3.4 uM).

**Purity:** >98%

**Clinical Data:** No Development Reported

**Size:** 10 mg, 50 mg
The p53 tumor suppressor is a principal mediator of growth arrest, senescence, and apoptosis in response to a broad array of cellular damage. p53 is a short-lived protein that is maintained at low, often undetectable, levels in normal cells. Under stress conditions, the p53 protein accumulates in the cell, binds in its tetrameric form to p53-response elements and induces the transcription of various genes.

MDM-2 is transcriptionally activated by p53 and MDM-2, in turn, inhibits p53 activity in several ways. MDM-2 binds to the p53 transactivation domain and thereby inhibits p53-mediated transactivation. MDM-2 also contains a signal sequence that is similar to the nuclear export signal of various viral proteins and, after binding to p53, it induces its nuclear export. As p53 is a transcription factor, it needs to be in the nucleus to be able to access the DNA; its transport to the cytoplasm by MDM-2 prevents this. Finally, MDM-2 is a ubiquitin ligase, so is able to target p53 for degradation by the proteasome. In many tumors p53 is inactivated by the overexpression of the negative regulators MDM2 and MDM4 or by the loss of activity of the MDM2 inhibitor ARF. The pathway can be reactivated in these tumors by small molecules that inhibit the interaction of MDM2 and/or MDM4 with p53. Such molecules are now in clinical trials.
### AM-8735
**Cat. No.: HY-12734**

**Bioactivity:** AM-8735 is a potent and selective MDM2 inhibitor with an IC$_{50}$ of 25 nM.

**Purity:** >98%

**Clinical Data:** No Development Reported

**Size:** 250 mg, 500 mg

![AM-8735](image)

---

### AMG 232
**Cat. No.: HY-12296**

**Bioactivity:** AMG 232 is an extremely potent, selective and orally available inhibitor of p53-MDM2 interaction, with an IC$_{50}$ of 0.6 nM, and binds to MDM2 with a K$_d$ of 0.045 nM.

**Purity:** 99.73%

**Clinical Data:** Phase 2

**Size:** 5 mg, 10 mg, 50 mg, 100 mg

![AMG 232](image)

---

### BH3I-1
(BH11; BH 3I1)
**Cat. No.: HY-100383**

**Bioactivity:** BH3I-1 is a Bcl-2 family antagonist, which inhibits the binding of the Bak BH3 peptide to Bcl-xL with a K$_d$ of 2.4±0.2 μM in FP assay. BH3I-1 has a K$_d$ of 5.3 μM against the p53/MDM2 pair.

**Purity:** 98.0%

**Clinical Data:** No Development Reported

**Size:** 10mM x 1mL in DMSO, 2 mg, 5 mg, 10 mg, 25 mg, 50 mg

![BH3I-1](image)

---

### CBL0137 hydrochloride
(Curaxin-137 hydrochloride; CBL-C137 hydrochloride)
**Cat. No.: HY-18935A**

**Bioactivity:** CBL0137 hydrochloride is an inhibitor of the histone chaperone, FACT. CBL0137 hydrochloride can also activate p53 and inhibits NF-kB with EC$_{50}$s of 0.37 and 0.47 μM, respectively.

**Purity:** 98.25%

**Clinical Data:** No Development Reported

**Size:** 10mM x 1mL in DMSO, 2 mg, 5 mg, 10 mg, 25 mg, 50 mg

![CBL0137](image)

---

### COTI-2
**Cat. No.: HY-19896**

**Bioactivity:** COTI-2 is a small molecule candidate anti-cancer drug which can convert mutant p53 to wild-type conformation.

**Purity:** 99.40%

**Clinical Data:** No Development Reported

**Size:** 10mM x 1mL in DMSO, 5 mg, 10 mg, 25 mg, 50 mg, 100 mg

![COTI-2](image)

---

### CTX1
**Cat. No.: HY-U00442**

**Bioactivity:** CTX1 is a novel small molecule p53 activator.

**Purity:** 96.0%

**Clinical Data:** No Development Reported

**Size:** 5 mg, 10 mg, 25 mg

![CTX1](image)

---

### DPBQ
**Cat. No.: HY-U00441**

**Bioactivity:** DPBQ is a p53 activator.

**Purity:** >98%

**Clinical Data:** No Development Reported

**Size:** 5 mg, 10 mg, 25 mg

![DPBQ](image)

---

### Inauhzin
(INZ)
**Cat. No.: HY-15869**

**Bioactivity:** Inauhzin is a dual SirT1/IMPDH2 inhibitor, and acts as an activator p53, used in the research of cancer.

**Purity:** 98.91%

**Clinical Data:** No Development Reported

**Size:** 10mM x 1mL in DMSO, 5 mg, 10 mg, 50 mg, 100 mg

![Inauhzin](image)

---

### Kevertin hydrochloride
(4-Isothiureidobutyronitrile hydrochloride; thi...)
**Cat. No.: HY-16271**

**Bioactivity:** Kevertin hydrochloride is a small molecule and activator of the tumor suppressor protein p53, with potential antineoplastic activity.

**Purity:** 98.0%

**Clinical Data:** Phase 2

**Size:** 10mM x 1mL in DMSO, 10 mg, 50 mg, 100 mg

![Kevertin](image)

---

### MI-773
**Cat. No.: HY-17493**

**Bioactivity:** MI-773 is a new small molecule inhibitor of the MDM2-p53 interaction, binds to MDM2 with high affinity (K$_i$=0.88 nM) and blocks the p53-MDM2 interaction.

**Purity:** 98.0%

**Clinical Data:** No Development Reported

**Size:** 10mM x 1mL in DMSO, 5 mg, 10 mg, 50 mg, 100 mg

![MI-773](image)
MX69

**Bioactivity:** MX69 is an inhibitor of MDM2/XIAP, used for cancer treatment.

**Purity:** 98.59%
**Clinical Data:** No Development Reported
**Size:** 10mM x 1mL in DMSO, 1 mg, 5 mg, 10 mg, 50 mg, 100 mg

---

NSC319726

**Bioactivity:** NSC319726 is a mutant p53R175 reactivator; inhibits growth of fibroblasts expressing the p53R175 mutation (IC50 = 8 nM); shows no inhibition for p53 wild-type cells

**Purity:** 99.39%
**Clinical Data:** No Development Reported
**Size:** 10mM x 1mL in DMSO, 5 mg, 10 mg, 50 mg

---

NSC59984

**Bioactivity:** NSC59984 induces mutant p53 protein degradation via MDM2 and the ubiquitin-proteasome pathway

**Purity:** >98%
**Clinical Data:** No Development Reported
**Size:** 10mM x 1mL in DMSO, 5 mg, 10 mg, 50 mg, 100 mg

---

Nutlin 3

**Bioactivity:** Nutlin 3 is a commercial available p53-MDM2 inhibitor, with Kd of 90 nM.

**Purity:** 98.32%
**Clinical Data:** No Development Reported
**Size:** 10mM x 1mL in DMSO, 5 mg, 10 mg, 50 mg, 100 mg

---

Nutlin 3a (Nutlin-3a chiral)

**Bioactivity:** Nutlin 3a is an active enantiomer of Nutlin-3, acts as a murine double minute (MDM2) antagonist that inhibits MDM2-p53 interactions and stabilizes the p53 protein, and thereby induces cell cycle arrest and apoptosis.

**Purity:** 98.11%
**Clinical Data:** No Development Reported
**Size:** 10mM x 1mL in DMSO, 5 mg, 10 mg, 50 mg, 100 mg

---

Nutlin 3b (Nutlin-3b)

**Bioactivity:** Nutlin-3b is a MDM2/p53 antagonist or inhibitor with IC50 of 13.6 μM. Nutlin-3b is a less active enantiomer

**Purity:** 96.32%
**Clinical Data:** No Development Reported
**Size:** 10mM x 1mL in DMSO, 5 mg, 10 mg, 50 mg

---

NVP-CGM097 (CGM097)

**Bioactivity:** NVP-CGM097 is a potent and selective MDM2 inhibitor with IC50 of 1.7±0.1 nM for hMDM2.

**Purity:** 98.32%
**Clinical Data:** Phase 1
**Size:** 10mM x 1mL in DMSO, 2 mg, 5 mg, 10 mg, 50 mg, 100 mg

---

NVP-CGM097 sulfate (CGM097 sulfate)

**Bioactivity:** NVP-CGM097 sulfate is a potent and selective MDM2 inhibitor with IC50 of 1.7±0.1 nM for hMDM2.

**Purity:** 98.83%
**Clinical Data:** Phase 1
**Size:** 10mM x 1mL in Water, 2 mg, 5 mg, 10 mg, 50 mg, 100 mg

---

NVP-HDM201 (HDM201)

**Bioactivity:** NVP-HDM201 (HDM201) is a potent and highly specific MDM-2/p53 inhibitor currently under phase I clinical trial.

**Purity:** 99.19%
**Clinical Data:** No Development Reported
**Size:** 10mM x 1mL in DMSO, 1 mg, 5 mg, 10 mg, 50 mg, 100 mg

---

p53 and MDM2 proteins-interaction-inhibitor chiral

**Bioactivity:** p53 and MDM2 proteins–interaction-inhibitor (chiral) (Compound 32) is an inhibitor of the interaction between p53 and MDM2 proteins

**Purity:** >98%
**Clinical Data:** No Development Reported
**Size:** 10mM x 1mL in DMSO, 10 mg, 100 mg

---

www.MedChemExpress.com
p53 and MDM2 proteins-interaction-inhibitor dihydrochloride

**Bioactivity:** p53 and MDM2 proteins-interaction-inhibitor (2Hcl) is an inhibitor of the interaction between p53 and MDM2 proteins

**Purity:** >98%
**Clinical Data:** No Development Reported
**Size:** 10mM x 1mL in DMSO, 10 mg, 100 mg

---

p53 and MDM2 proteins-interaction-inhibitor racemic

**Bioactivity:** p53 and MDM2 proteins-interaction-inhibitor (racemic) (Compound 2j) is an inhibitor of the interaction between p53 and MDM2 proteins

**Purity:** >98%
**Clinical Data:** No Development Reported
**Size:** 10 mg, 100 mg

---

PhiKan 083 hydrochloride

**Bioactivity:** PhiKan 083 hydrochloride is a carbazole derivative, which can stabilize Y220C (a p53 mutant), with a $K_d$ of 167 μM measured by NMR, used for cancer research.

**Purity:** 99.0%
**Clinical Data:** No Development Reported
**Size:** 10mM x 1mL in DMSO, 5 mg, 10 mg, 25 mg

---

Pifithrin-α hydrobromide

**Bioactivity:** Pifithrin-α hydrobromide is an inhibitor of p53, also acts as an aryl hydrocarbon receptor (AhR) agonist.

**Purity:** 98.28%
**Clinical Data:** No Development Reported
**Size:** 10mM x 1mL in DMSO, 5 mg, 10 mg, 25 mg, 50 mg

---

Pifithrin-β (Cyclic Pifithrin-α)

**Bioactivity:** Pifithrin-β is a potent p53 inhibitor with an $IC_{50}$ of 23 μM.

**Purity:** >98%
**Clinical Data:** No Development Reported
**Size:** 5 mg, 10 mg, 50 mg

---

Pifithrin-β hydrobromide

**Bioactivity:** Pifithrin-β hydrobromide is a cyclic p53 inhibitor with an $IC_{50}$ of 23 μM.

**Purity:** 99.90%
**Clinical Data:** No Development Reported
**Size:** 10mM x 1mL in DMSO, 5 mg, 10 mg, 50 mg

---

Pifithrin-μ (PFTμ; 2-Phenylethynesulfonamide)

**Bioactivity:** Pifithrin-μ is an inhibitor of p53 and HSP70, with antitumor and neuroprotective activity.

**Purity:** 98.31%
**Clinical Data:** No Development Reported
**Size:** 10mM x 1mL in DMSO, 10 mg

---

PK11007

**Bioactivity:** PK11007 is a p53 targeting compound, has anti-tumor activities through activation of unstable p53.

**Purity:** 99.74%
**Clinical Data:** No Development Reported
**Size:** 10mM x 1mL in DMSO, 5 mg, 10 mg, 25 mg

---

PRIMA-1

**Bioactivity:** PRIMA-1 is a mutant p53 reactivator, restores the sensitivity of TP53 mutant-type thyroid cancer cells to the histone methylation inhibitor 3-Deazaneplanocin A.

**Purity:** 98.0%
**Clinical Data:** No Development Reported
**Size:** 10mM x 1mL in DMSO, 5 mg, 10 mg, 25 mg, 50 mg, 100 mg, 200 mg

---

PRIMA-1Met

**Bioactivity:** PRIMA-1MET restores wild-type conformation and function to mutant p53, and triggers apoptosis in tumor cells. PRIMA-1MET also targets the selenoprotein thioredoxin reductase 1 (TrxR1), a key regulator of cellular redox balance.

**Purity:** 99.0%
**Clinical Data:** No Development Reported
**Size:** 10mM x 1mL in DMSO, 5 mg, 10 mg, 25 mg, 50 mg, 100 mg
Puromycin aminonucleoside
(3’-Amino-3’-deoxy-N6,N6-dimethyladenosine)
Cat. No.: HY-15695

Bioactivity:
Puromycin aminonucleoside is the aminonucleoside portion of the antibiotic puromycin, and a puromycin analog which does not inhibit protein synthesis or induce apoptosis.

Purity: 98.31%
Clinical Data: No Development Reported
Size: 10mM x 1mL in DMSO, 5 mg, 10 mg, 50 mg, 100 mg

ReACp53
Cat. No.: HY-P0121

Bioactivity:
ReACp53 is cell-penetrating peptide, designed to inhibit p53 amyloid formation, rescues p53 function in cancer cell lines and in organoids derived from high-grade serous ovarian carcinomas (HGSOC).

Purity: 99.65%
Clinical Data: No Development Reported
Size: 10mM x 1mL in Water, 1 mg, 5 mg, 10 mg, 25 mg, 50 mg

RG7112
(R05045337)
Cat. No.: HY-10959

Bioactivity:
RG7112 is the first clinical and orally available MDM-2/p53 inhibitor designed to occupy the p53-binding pocket of MDM2, with the $K_d$ value of 11 nM.

Purity: 99.94%
Clinical Data: Phase 1
Size: 10mM x 1mL in DMSO, 5 mg, 10 mg, 25 mg, 50 mg, 100 mg

RG7388
(idasanutlin)
Cat. No.: HY-15676

Bioactivity:
RG7388 is a potent and selective MDM2 antagonist, inhibiting p53-MDM2 binding, with $IC_{50}$ of 6 nM.

Purity: 99.97%
Clinical Data: Phase 3
Size: 10mM x 1mL in DMSO, 5 mg, 10 mg, 50 mg, 100 mg

RITA
(NSC 652287)
Cat. No.: HY-13424

Bioactivity:
RITA is an inhibitor of p53-HDM-2 interaction, binds to p53dN, with a $K_d$ of 1.5 nM, and also induces DNA-DNA cross-links.

Purity: 97.97%
Clinical Data: No Development Reported
Size: 10mM x 1mL in DMSO, 5 mg, 10 mg, 50 mg

RO8994
Cat. No.: HY-16999

Bioactivity:
RO8994 is a highly potent and selective series of spiroindolinone small-molecule MDM2 inhibitor, with $IC_{50}$ of 3 nM (HTRF binding assays) and 20 nM (MTT proliferation assays).

Purity: 99.38%
Clinical Data: No Development Reported
Size: 10mM x 1mL in DMSO, 5 mg, 10 mg, 50 mg, 100 mg

SAR405838
(MI-77301)
Cat. No.: HY-18986

Bioactivity:
SAR405838 is a highly potent and selective MDM2 inhibitor, binds to MDM2 with $K_i = 0$.

Purity: 98.95%
Clinical Data: Phase 1
Size: 10mM x 1mL in DMSO, 5 mg, 10 mg, 50 mg, 100 mg

Serdemetan
(JNJ-26854165)
Cat. No.: HY-12025

Bioactivity:
Serdemetan (JNJ-26854165) acts as a HDM2 ubiquitin ligase antagonist and also induces early apoptosis in p53 wild-type cells, inhibits cellular proliferation followed by delayed apoptosis in the absence of functional p53.

Purity: 98.32%
Clinical Data: Phase 1
Size: 10mM x 1mL in DMSO, 10 mg, 50 mg, 100 mg

SJ-172550
Cat. No.: HY-16664

Bioactivity:
SJ-172550 is a small molecule inhibitor of MDMX, competes for the wild type p53 peptide binding to MDMX with an $EC_{50}$ of 5 μM.

Purity: 98.0%
Clinical Data: No Development Reported
Size: 10mM x 1mL in DMSO, 10 mg, 50 mg

Solasodine
(Purapuridine; Solancarpidine; Solasodin)
Cat. No.: HY-N0068

Bioactivity:
Solasodine (Purapuridine) is a poisonous alkaloid chemical compound that occurs in plants of the Solanaceae family.

Purity: 98.0%
Clinical Data: No Development Reported
Size: 100 mg
<table>
<thead>
<tr>
<th>Compound</th>
<th>Cat. No.</th>
<th>Bioactivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tenovin 6 Hydrochloride</td>
<td>HY-15510B</td>
<td>Tenovin-6 Hydrochloride is a water soluble inhibitor of SIRT1 and SIRT2, slightly inhibits HDAC8, and is also a potent activator of p53, with IC50 of 21 μM, 10 μM, and 67 μM for SirT1, SirT2, and SirT3, respectively.</td>
</tr>
<tr>
<td>Tenovin-1</td>
<td>HY-13423</td>
<td>Tenovin-1 is an inhibitor of sirtuin 1 and sirtuin 2, an activator of p53 and may have potential in the management of cancer.</td>
</tr>
<tr>
<td>Tenovin-3</td>
<td>HY-19339</td>
<td>Tenovin-3 is able to increase p53 levels, determined in MCF-7 cells treated for 6 hr at 10 μM</td>
</tr>
<tr>
<td>Tenovin-6</td>
<td>HY-15510</td>
<td>Tenovin-6 is a water soluble inhibitor of SIRT1 and SIRT2, slightly inhibits HDAC8, and is also a potent activator of p53, with IC50 of 21 μM, 10 μM, and 67 μM for SirT1, SirT2, and SirT3, respectively.</td>
</tr>
<tr>
<td>Triptolide (PG490)</td>
<td>HY-32735</td>
<td>Triptolide is an inhibitor of heat shock factor (HSF1), inhibits HSP90-CDC37 binding and induces acetylation of HSP90, and also inhibits MDM2 expression in a dose-dependent manner with IC50 values range from 47 to 73 nM.</td>
</tr>
<tr>
<td>WR-1065 dihydrochloride</td>
<td>HY-103640</td>
<td>WR-1065 dihydrochloride can protect normal tissues from the toxic effects of certain cancer drugs and activate p53 through a JNK-dependent signaling pathway.</td>
</tr>
<tr>
<td>YH239-EE</td>
<td>HY-12287</td>
<td>YH239-EE, ethyl ester of the free carboxylic acid compound YH239, is a potent p53-MDM2 antagonizing and apoptosis-inducing agent IC50 value: Target: MDM2/p53 YH239-EE inhibits the growth of OCI-AML-3 cells with wild type p53 by inhibiting the p53-MDM2 interaction</td>
</tr>
</tbody>
</table>

**Purity:**
- Tenovin 6 Hydrochloride: 98.0%
- Tenovin-1: 99.39%
- Tenovin-3: 99.72%
- Tenovin-6: 98.4%
- Triptolide: 99.83%
- WR-1065 dihydrochloride: 98.0%
- YH239-EE: 99.25%

**Clinical Data:**
- Tenovin 6 Hydrochloride: No Development Reported
- Tenovin-1: No Development Reported
- Tenovin-3: No Development Reported
- Tenovin-6: No Development Reported
- Triptolide: Phase 3
- WR-1065 dihydrochloride: No Development Reported
- YH239-EE: No Development Reported

**Size:**
- Tenovin 6 Hydrochloride: 10mM x 1mL in DMSO, 2 mg, 5 mg, 10 mg, 50 mg, 100 mg
- Tenovin-1: 10mM x 1mL in DMSO, 10 mg, 50 mg, 100 mg
- Tenovin-3: 10mM x 1mL in DMSO, 1 mg, 5 mg, 10 mg, 25 mg, 50 mg
- Tenovin-6: 10mM x 1mL in DMSO, 2 mg, 5 mg, 10 mg, 50 mg, 100 mg
- Triptolide: 10mM x 1mL in DMSO, 2 mg, 5 mg, 10 mg, 25 mg, 50 mg, 100 mg
- WR-1065 dihydrochloride: 10mM x 1mL in DMSO, 5 mg, 10 mg
- YH239-EE: 10mM x 1mL in DMSO, 10 mg, 50 mg
PKD (Protein kinase D) is an evolutionarily conserved protein kinase family with structural, enzymological, and regulatory properties different from the PKC family members. Signaling through PKD is induced by a remarkable number of stimuli, including G-protein-coupled receptor agonists and polypeptide growth factors. PKD family of serine/threonine protein kinases has three members: PKD1, PKD2, PKD3. PKD1, the most studied member of the family, is increasingly implicated in the regulation of a complex array of fundamental biological processes, including signal transduction, cell proliferation and differentiation, membrane trafficking, secretion, immune regulation, cardiac hypertrophy and contraction, angiogenesis, and cancer. PKD mediates such a diverse array of normal and abnormal biological functions via dynamic changes in its spatial and temporal localization, combined with its distinct substrate specificity.
PKD Inhibitors & Modulators

CID 2011756
Cat. No.: HY-13454
Bioactivity: CID-2011756 is a cell-active ATP competitive and specific PKD1 inhibitor that inhibits phorbol ester-induced endogenous PKD1 activation in LNCaP prostate cancer cells.
Purity: 95.52%
Clinical Data: No Development Reported
Size: 10mM x 1mL in DMSO, 5 mg, 10 mg, 50 mg

CID755673
Cat. No.: HY-12239
Bioactivity: CID755673 is a potent and selective PKD1 inhibitor with an IC<sub>50</sub> of 182 nM.
Purity: 98.98%
Clinical Data: No Development Reported
Size: 10mM x 1mL in DMSO, 5 mg, 10 mg, 50 mg

CRT0066101 dihydrochloride
Cat. No.: HY-15698A
Bioactivity: CRT0066101 dihydrochloride is a potent and specific PKD inhibitor with IC<sub>50</sub> values of 1, 2.5 and 2 nM for PKD1, 2, and 3 respectively.
Purity: 98.94%
Clinical Data: No Development Reported
Size: 10mM x 1mL in DMSO, 5 mg, 10 mg, 25 mg, 50 mg

kb NB 142-70
Cat. No.: HY-15528
Bioactivity: kb NB 142-70 is a selective protein kinase D (PKD) inhibitor (IC50 values are 28.3, 58.7 and 53.2 nM for PKD1, 2 and 3 respectively).
Purity: 98.24%
Clinical Data: No Development Reported
Size: 10mM x 1mL in DMSO, 10 mg, 50 mg

kb-NB77-78
Cat. No.: HY-16698
Bioactivity: kb-NB77-78 is an analog of CID797718, which is a by-product of the synthesis of the parental compound, CID755673(PKD1 inhibitor).
Purity: >98%
Clinical Data: No Development Reported
Size: 10mM x 1mL in DMSO, 5 mg, 10 mg
RIP kinase

Receptor-interacting protein kinases;RIPK

Receptor interacting protein 2 (RIP2), a serine/threonine kinase, is an adaptor molecule of NOD1 and NOD2, and genetic variation in this receptor is known to be associated with the severity of allergic asthma in children.

Receptor interacting protein kinase 2 (RIPK2) is critical for NOD-mediated NF-κB activation and cytokine production. WEHI-345, a selective RIPK2 kinase inhibitor, which delays RIPK2 ubiquitylation and NF-κB activation downstream of NOD engagement.

Receptor interacting protein kinase 3 (RIPK3) is a cytosolic master regulator of necroptosis. RIPK3 has an active serine/threonine kinase domain at the N-terminus, and a unique protein-protein interaction domain called the RIP homotypic interaction motif (RHIM) at the C-terminus. Both kinase activity and RHIM are indispensable for necroptosis. RIPK3 interacts with other RHIM-containing proteins such as RIPK1, Toll/interleukin-1 (IL-1) receptor domain-containing adaptor protein inducing interferon β (TRIF) or DNA-dependent activator of interferon regulatory factor (DAI). RIPK3 induces necroptosis, a type of regulated necrosis, through its kinase domain and RHIM.
## RIP kinase Inhibitors & Modulators

<table>
<thead>
<tr>
<th><strong>GSK’481</strong></th>
<th>Cat. No.: HY-100131</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bioactivity:</strong> GSK’481 can inhibit RIP1 WT S166 phosphorylation in human vs mouse plasmids overexpressed in HEK293T cells.</td>
<td></td>
</tr>
<tr>
<td><strong>Purity:</strong> 98.0%</td>
<td></td>
</tr>
<tr>
<td><strong>Clinical Data:</strong> No Development Reported</td>
<td></td>
</tr>
<tr>
<td><strong>Size:</strong> 10mM x 1mL in DMSO, 2 mg, 5 mg, 10 mg, 50 mg, 100 mg</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>GSK’872</strong></th>
<th>Cat. No.: HY-101872</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bioactivity:</strong> GSK’872 is a <strong>RIPK3</strong> inhibitor, which binds RIP3 kinase domain with high affinity ($IC_{50}=1.8$ nM), and inhibits kinase activity ($IC_{50}=1.3$ nM).</td>
<td></td>
</tr>
<tr>
<td><strong>Purity:</strong> 99.65%</td>
<td></td>
</tr>
<tr>
<td><strong>Clinical Data:</strong> No Development Reported</td>
<td></td>
</tr>
<tr>
<td><strong>Size:</strong> 10mM x 1mL in DMSO, 5 mg, 10 mg, 25 mg, 50 mg, 100 mg</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>GSK2982772</strong></th>
<th>Cat. No.: HY-101760</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bioactivity:</strong> GSK2982772 is a potent and ATP competitive <strong>RIP1</strong> inhibitor with an $IC_{50}$ of 16 nM.</td>
<td></td>
</tr>
<tr>
<td><strong>Purity:</strong> 98.0%</td>
<td></td>
</tr>
<tr>
<td><strong>Clinical Data:</strong> Phase 2</td>
<td></td>
</tr>
<tr>
<td><strong>Size:</strong> 10mM x 1mL in DMSO, 1 mg, 5 mg, 10 mg, 50 mg, 100 mg</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>GSK583</strong></th>
<th>Cat. No.: HY-100339</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bioactivity:</strong> GSK583 is a highly potent and selective inhibitor of <strong>RIP2 Kinase</strong>, with $IC_{50}$ of 5 nM.</td>
<td></td>
</tr>
<tr>
<td><strong>Purity:</strong> 98.07%</td>
<td></td>
</tr>
<tr>
<td><strong>Clinical Data:</strong> No Development Reported</td>
<td></td>
</tr>
<tr>
<td><strong>Size:</strong> 10mM x 1mL in DMSO, 2 mg, 5 mg, 10 mg, 50 mg, 100 mg</td>
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</table>

<table>
<thead>
<tr>
<th><strong>Nec-4</strong></th>
<th>Cat. No.: HY-18900</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bioactivity:</strong> Nec-4, a tricyclic derivative, is a potent receptor interacting protein 1 (<strong>RIP1</strong>) inhibitor, with an $IC_{50}$ of 2.6±0.1 μM, $IC_{50}$ of 0.46±0.05 μM.</td>
<td></td>
</tr>
<tr>
<td><strong>Purity:</strong> &gt;98%</td>
<td></td>
</tr>
<tr>
<td><strong>Clinical Data:</strong> No Development Reported</td>
<td></td>
</tr>
<tr>
<td><strong>Size:</strong> 250 mg, 500 mg</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Necrostatin-1</strong></th>
<th>Cat. No.: HY-15760</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bioactivity:</strong> Necrostatin-1 is a specific inhibitor of the receptor-interacting protein 1 (<strong>RIP1</strong>) kinase domain, inhibits necroptosis with $EC_{50}$ of 490 nM in Jurkat cells.</td>
<td></td>
</tr>
<tr>
<td><strong>Purity:</strong> 99.20%</td>
<td></td>
</tr>
<tr>
<td><strong>Clinical Data:</strong> No Development Reported</td>
<td></td>
</tr>
<tr>
<td><strong>Size:</strong> 10mM x 1mL in DMSO, 10 mg, 50 mg, 100 mg</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>RIP2 kinase inhibitor 1</strong></th>
<th>Cat. No.: HY-19764</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bioactivity:</strong> RIP2 kinase inhibitor 1 is a receptor interacting protein-2 (<strong>RIP2</strong>) kinase inhibitor extracted from patent WO/2014043446 A1, compound example 1.</td>
<td></td>
</tr>
<tr>
<td><strong>Purity:</strong> 98.11%</td>
<td></td>
</tr>
<tr>
<td><strong>Clinical Data:</strong> No Development Reported</td>
<td></td>
</tr>
<tr>
<td><strong>Size:</strong> 10mM x 1mL in DMSO, 1 mg, 5 mg, 10 mg, 50 mg, 100 mg</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>RIP2 kinase inhibitor 2</strong></th>
<th>Cat. No.: HY-19761</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bioactivity:</strong> RIP2 kinase inhibitor 2 is a receptor interacting protein-2 (<strong>RIP2</strong>) kinase inhibitor extracted from patent WO/2014043437 A1, compound example 9.</td>
<td></td>
</tr>
<tr>
<td><strong>Purity:</strong> 99.64%</td>
<td></td>
</tr>
<tr>
<td><strong>Clinical Data:</strong> No Development Reported</td>
<td></td>
</tr>
<tr>
<td><strong>Size:</strong> 10mM x 1mL in DMSO, 1 mg, 5 mg, 10 mg, 50 mg, 100 mg</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>RIPA-56</strong></th>
<th>Cat. No.: HY-101032</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bioactivity:</strong> RIPA-56 is a highly potent, selective, and metabolically stable inhibitor of receptor-interacting protein 1 (<strong>RIP1</strong>) with an $IC_{50}$ of 13 nM.</td>
<td></td>
</tr>
<tr>
<td><strong>Purity:</strong> 99.86%</td>
<td></td>
</tr>
<tr>
<td><strong>Clinical Data:</strong> No Development Reported</td>
<td></td>
</tr>
<tr>
<td><strong>Size:</strong> 10mM x 1mL in DMSO, 10 mg, 50 mg, 100 mg, 200 mg</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>WEHI-345</strong></th>
<th>Cat. No.: HY-18937</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bioactivity:</strong> WEHI-345 is a potent and selective inhibitor of RIPK2, with IC50 of 0</td>
<td></td>
</tr>
<tr>
<td><strong>Purity:</strong> 98.56%</td>
<td></td>
</tr>
<tr>
<td><strong>Clinical Data:</strong> No Development Reported</td>
<td></td>
</tr>
<tr>
<td><strong>Size:</strong> 10mM x 1mL in DMSO, 5 mg, 10 mg, 50 mg, 100 mg</td>
<td></td>
</tr>
</tbody>
</table>
Survivin is a member of the inhibitor of apoptosis (IAP) family. The survivin protein functions to inhibit caspase activation, thereby leading to negative regulation of apoptosis or programmed cell death. This has been shown by disruption of survivin induction pathways leading to increase in apoptosis and decrease in tumour growth. Survivin expression is highly regulated by the cell cycle and is only expressed in the G2-M phase. Survivin localizes to the mitotic spindle by interaction with tubulin during mitosis and may play a contributing role in regulating mitosis. Survivin is highly expressed in most cancers and associated with chemotherapy resistance, increased tumor recurrence, and shorter patient survival, making antisurvivin therapy an attractive cancer treatment strategy.
Survivin Inhibitors & Modulators

<table>
<thead>
<tr>
<th>GDP366</th>
<th>Bioactivity: GDP366, a dual inhibitor of survivin and Op18, induces cell growth inhibition, cellular senescence and mitotic catastrophe in human cancer cells.</th>
<th>Cat. No.: HY-U00177</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purity: &gt;98%</td>
<td>Clinical Data: No Development Reported</td>
<td>Size: 1 mg, 5 mg, 10 mg, 20 mg</td>
</tr>
</tbody>
</table>

| YM-155 | Bioactivity: YM-155 is a novel survivin suppressant with an IC\text{50} of 0.54 nM for the inhibition of survivin promoter activity. | (Sepantronium bromide) | Cat. No.: HY-10194 |
|---|---|---|
| Purity: 98.91% | Clinical Data: Phase 2 | Size: 10mM x 1mL in DMSO, 5 mg, 10 mg, 50 mg, 100 mg |

<table>
<thead>
<tr>
<th>YM-155 hydrochloride</th>
<th>Bioactivity: YM-155 hydrochloride is a novel survivin suppressant with an IC\text{50} of 0.54 nM for the inhibition of survivin promoter activity.</th>
<th>Cat. No.: HY-10194A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purity: &gt;98%</td>
<td>Clinical Data: No Development Reported</td>
<td>Size: 5 mg, 10 mg, 50 mg, 100 mg</td>
</tr>
</tbody>
</table>
Thymidylate Synthase

Thymidylate synthase (TS) is an E2F1-regulated enzyme that is essential for DNA synthesis and repair. Thymidylate synthase is an essential S phase enzyme required for DNA synthesis. Thymidylate synthase plays a central role in the biosynthesis of thymidylate, an essential precursor for DNA synthesis.

Thymidylate synthase catalyzes the reductive methylation of 2′-deoxyuridine 5-monophosphate (dUMP) by transfer of a methylene group from a cofactor, CH$_2$H$_4$ folate, to generate deoxythymidine-5′-monophosphate (dTMP). dTMP is further phosphorylated to the triphosphate state (dTTP), which is a direct precursor for DNA synthesis. Since the TS catalyzed reaction is the sole intracellular de novo source of dTMP, the inhibition of TS results in the cessation of cellular proliferation and growth.

Thymidylate synthase protein and mRNA levels are elevated in many human cancers, and high TS levels have been correlated with poor prognosis in patients with colorectal, breast, cervical, bladder, kidney, and non-small cell lung cancers.
Thymidylate Synthase Inhibitors & Modulators

Raltitrexed
(ZD1694; D1694; ICI-D1694)  
Cat. No.: HY-10821

Bioactivity: Raltitrexed is an inhibitor of thymidylate synthase and an antimetabolite drug used for cancer treatment.

Purity: 99.21%
Clinical Data: Launched
Size: 10mM x 1mL in DMSO,
10 mg, 50 mg, 100 mg

TAS-102
(Trifluridine-tipiracil hydrochloride mixture)  
Cat. No.: HY-16478

Bioactivity: TAS-102 is a novel oral combination drug that consists of an antineoplastic thymidine-based nucleoside analog, trifluorothymidine, and a potent thymidine phosphorylase inhibitor, tipiracil, in a 1:0.5 molar ratio.

Purity: 99.50%
Clinical Data: Launched
Size: 5 mg, 10 mg, 50 mg, 100 mg

Tipiracil
Cat. No.: HY-A0063A

Bioactivity: Tipiracil is a thymidine phosphorylase (TPase) inhibitor.

Purity: 99.87%
Clinical Data: Launched
Size: 5 mg, 10 mg, 50 mg, 100 mg

Trifluorothymidine (Trfluoridine; FTD; 5-Trifluorothymidine; NSC 529182; NSC 75520)  
Cat. No.: HY-A0061

Bioactivity: Trifluorothymidine (TFT) and is an inhibitor of thymidine phosphorylase. TFT also inhibits thymidylate synthase (TS), a rate-limiting enzyme of DNA biosynthesis, and is incorporated into DNA.

Purity: 99.69%
Clinical Data: Launched
Size: 10mM x 1mL in DMSO,
50 mg, 100 mg, 200 mg

Tel: 609-228-6898  Fax: 609-228-5909  Email: sales@medchemexpress.com
Tumor necrosis factor (TNF) is a major mediator of apoptosis as well as inflammation and immunity, and it has been implicated in the pathogenesis of a wide spectrum of human diseases, including sepsis, diabetes, cancer, osteoporosis, multiple sclerosis, rheumatoid arthritis, and inflammatory bowel diseases.

TNF-α is a 17-kDa protein consisting of 157 amino acids that is a homotrimer in solution. In humans, the gene is mapped to chromosome 6. Its bioactivity is mainly regulated by soluble TNF-α–binding receptors. TNF-α is mainly produced by activated macrophages, T lymphocytes, and natural killer cells. Lower expression is known for a variety of other cells, including fibroblasts, smooth muscle cells, and tumor cells. In cells, TNF-α is synthesized as pro-TNF (26 kDa), which is membrane-bound and is released upon cleavage of its pro domain by TNF-converting enzyme (TACE).

Many of the TNF-induced cellular responses are mediated by either one of the two TNF receptors, TNF-R1 and TNF-R2, both of which belong to the TNF receptor super-family. In response to TNF treatment, the transcription factor NF-κB and MAP kinases, including ERK, p38 and JNK, are activated in most types of cells and, in some cases, apoptosis or necrosis could also be induced. However, induction of apoptosis or necrosis is mainly achieved through TNFR1, which is also known as a death receptor. Activation of the NF-κB and MAPKs plays an important role in the induction of many cytokines and immune-regulatory proteins and is pivotal for many inflammatory responses.
### TNF Receptor Inhibitors & Modulators

<table>
<thead>
<tr>
<th><strong>AP1903</strong> (Rimiducid)</th>
<th><strong>Cat. No.:</strong> HY-16046</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bioactivity:</strong></td>
<td>AP1903 is a homodimer binding to FKBP, elicits potent and dose-dependent apoptotic death of engineered cell line HT1080 in culture with an EC\textsubscript{50} of 0.1 nM. AP1903 induces Fas activation. Fas receptor also known as tumor necrosis factor receptor superfamily member 6 (TNFRSF6).</td>
</tr>
<tr>
<td><strong>Purity:</strong></td>
<td>&gt;98%</td>
</tr>
<tr>
<td><strong>Clinical Data:</strong></td>
<td>Phase 2</td>
</tr>
<tr>
<td><strong>Size:</strong></td>
<td>10mM x 1mL in DMSO, 2 mg, 5 mg, 10 mg, 50 mg, 100 mg</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th><strong>Astilbin</strong></th>
<th><strong>Cat. No.:</strong> HY-N0509</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bioactivity:</strong></td>
<td>Astilbin, a flavonoid compound, is isolated from the rhizome of Smilax glabra. Astilbin enhances NRF2 activation. Astilbin also suppresses TNF-α expression and NF-κB activation.</td>
</tr>
<tr>
<td><strong>Purity:</strong></td>
<td>99.43%</td>
</tr>
<tr>
<td><strong>Clinical Data:</strong></td>
<td>No Development Reported</td>
</tr>
<tr>
<td><strong>Size:</strong></td>
<td>10mM x 1mL in DMSO, 2 mg, 5 mg, 10 mg, 50 mg, 100 mg</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th><strong>AX-024</strong></th>
<th><strong>Cat. No.:</strong> HY-107390</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bioactivity:</strong></td>
<td>AX-024 is a cytokine release inhibitor which can strongly inhibit the production of interleukin-6 (IL-6), tumor necrosis factor-α (TNFα), interferon-γ (IFN-γ), IL-10 and IL-17A.</td>
</tr>
<tr>
<td><strong>Purity:</strong></td>
<td>98.0%</td>
</tr>
<tr>
<td><strong>Clinical Data:</strong></td>
<td>Phase 1</td>
</tr>
<tr>
<td><strong>Size:</strong></td>
<td>10mM x 1mL in DMSO, 2 mg, 5 mg, 10 mg, 25 mg, 50 mg, 100 mg</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>AX-024 hydrochloride</strong></th>
<th><strong>Cat. No.:</strong> HY-107390A</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bioactivity:</strong></td>
<td>AX-024 hydrochloride is an cytokine release inhibitor which can strongly inhibit the production of interleukin-6 (IL-6), tumor necrosis factor-α (TNFα), interferon-γ (IFN-γ), IL-10 and IL-17A.</td>
</tr>
<tr>
<td><strong>Purity:</strong></td>
<td>99.29%</td>
</tr>
<tr>
<td><strong>Clinical Data:</strong></td>
<td>Phase 1</td>
</tr>
<tr>
<td><strong>Size:</strong></td>
<td>10mM x 1mL in DMSO, 2 mg, 5 mg, 10 mg, 25 mg, 50 mg, 100 mg</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Bioymifi</strong> (DR5 Activator)</th>
<th><strong>Cat. No.:</strong> HY-18377</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bioactivity:</strong></td>
<td>Bioymifi(DR5 Activator) is the first novel and potent small-molecule activation of the TRAIL receptor DR5 in human cancer cells.</td>
</tr>
<tr>
<td><strong>Purity:</strong></td>
<td>98.0%</td>
</tr>
<tr>
<td><strong>Clinical Data:</strong></td>
<td>No Development Reported</td>
</tr>
<tr>
<td><strong>Size:</strong></td>
<td>10mM x 1mL in DMSO, 5 mg, 10 mg, 25 mg, 50 mg, 100 mg</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th><strong>C 87</strong></th>
<th><strong>Cat. No.:</strong> HY-100735</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bioactivity:</strong></td>
<td>C87 is a novel small-molecule TNFα inhibitor; potently inhibits TNFα-induced cytotoxicity with an IC\textsubscript{50} of 8.73 μM.</td>
</tr>
<tr>
<td><strong>Purity:</strong></td>
<td>98.0%</td>
</tr>
<tr>
<td><strong>Clinical Data:</strong></td>
<td>No Development Reported</td>
</tr>
<tr>
<td><strong>Size:</strong></td>
<td>10mM x 1mL in DMSO, 5 mg, 10 mg, 25 mg, 50 mg, 100 mg</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th><strong>CDC801</strong></th>
<th><strong>Cat. No.:</strong> HY-U00179</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bioactivity:</strong></td>
<td>CDC801 is a potent and orally active phosphodiesterase 4 (PDE4) and tumor necrosis factor-α (TNF-α) inhibitor with IC\textsubscript{50} of 1.1 μM and 2.5 μM, respectively.</td>
</tr>
<tr>
<td><strong>Purity:</strong></td>
<td>&gt;98%</td>
</tr>
<tr>
<td><strong>Clinical Data:</strong></td>
<td>No Development Reported</td>
</tr>
<tr>
<td><strong>Size:</strong></td>
<td>1 mg, 5 mg, 10 mg, 20 mg</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Cot inhibitor-1</strong></th>
<th><strong>Cat. No.:</strong> HY-32015</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bioactivity:</strong></td>
<td>Cot inhibitor-1 is a COT/Tpl2 inhibitor.</td>
</tr>
<tr>
<td><strong>Purity:</strong></td>
<td>95.25%</td>
</tr>
<tr>
<td><strong>Clinical Data:</strong></td>
<td>No Development Reported</td>
</tr>
<tr>
<td><strong>Size:</strong></td>
<td>10mM x 1mL in DMSO, 2 mg, 5 mg, 10 mg, 25 mg, 50 mg, 100 mg</td>
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</table>

<table>
<thead>
<tr>
<th><strong>Cot inhibitor-2</strong></th>
<th><strong>Cat. No.:</strong> HY-32018</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bioactivity:</strong></td>
<td>Cot inhibitor-2 is a COT/Tpl2 inhibitor</td>
</tr>
<tr>
<td><strong>Purity:</strong></td>
<td>99.20%</td>
</tr>
<tr>
<td><strong>Clinical Data:</strong></td>
<td>No Development Reported</td>
</tr>
<tr>
<td><strong>Size:</strong></td>
<td>10mM x 1mL in DMSO, 2 mg, 5 mg, 10 mg, 25 mg, 50 mg, 100 mg</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Cynaropicrin</strong></th>
<th><strong>Cat. No.:</strong> HY-N2350</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bioactivity:</strong></td>
<td>Cynaropicrin is a sesquiterpene lactone which can inhibit tumor necrosis factor (TNF-α) release with IC\textsubscript{50} of 8.24 and 3.18 μM for murine and human macrophage cells, respectively. Cynaropicrin also inhibits the increase of cartilage degradation factor (MMP13) and suppress...</td>
</tr>
<tr>
<td><strong>Purity:</strong></td>
<td>&gt;98%</td>
</tr>
<tr>
<td><strong>Clinical Data:</strong></td>
<td>No Development Reported</td>
</tr>
<tr>
<td><strong>Size:</strong></td>
<td>5 mg, 10 mg</td>
</tr>
</tbody>
</table>

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Tel: 609-228-6898   Fax: 609-228-5909   Email: sales@medchemexpress.com
DCVC (S-([1E]-1,2-dichloroethyl)-L-cysteine)  Cat. No.: HY-19717

Bioactivity: DCVC inhibits pathogen-stimulated TNF-α in human extra placental membranes in vitro

Purity: 99.98%
Clinical Data: No Development Reported
Size: 10mM x 1mL in DMSO, 5 mg, 10 mg, 50 mg, 100 mg

---

Eucalyptol (1,8-Cineole)  Cat. No.: HY-N0066

Bioactivity: Eucalyptol is an inhibitor of S-HT3 receptor, potassium channel, TNF-α and IL-1β.

Purity: 98.0%
Clinical Data: Phase 3
Size: 10mM x 1mL in DMSO, 50 mg

---

Fisetin  Cat. No.: HY-N0182

Bioactivity: Fisetin is a natural flavonol found in many fruits and vegetables with various benefits, such as antioxidant, anticancer, neuroprotection effects.

Purity: 98.0%
Clinical Data: Phase 2
Size: 10mM x 1mL in DMSO, 100 mg, 500 mg, 1 g

---

Forsythoside B  Cat. No.: HY-N0029

Bioactivity: Forsythoside B is a phenylethanoid glycoside isolated from the leaves of Lamiophlomis rotata Kudo, a Chinese folk medicinal plant for treating inflammatory diseases and promoting blood circulation. Forsythoside B could inhibit TNF-alpha, IL-6, IkB and modulate NF-κB.

Purity: 99.63%
Clinical Data: No Development Reported
Size: 10mM x 1mL in DMSO, 5 mg, 10 mg, 25 mg, 50 mg, 100 mg

---

Ginsenoside Rc (Panaxoside Rc)  Cat. No.: HY-N0042

Bioactivity: Ginsenoside Rc, one of major Ginsenosides from Panax ginseng, enhances GABA receptor (GABA)3-mediated ion channel currents (I GABA). Ginsenoside Rc inhibits the expression of TNF-α and IL-1β.

Purity: 98.0%
Clinical Data: No Development Reported
Size: 10mM x 1mL in DMSO, 5 mg, 10 mg

---

Ginsenoside Rh1 (Prosapogenin A2; Sanchinoside B2; Sanchinoside Rh1; Ginsenoside-Rh1)  Cat. No.: HY-N0604

Bioactivity: Ginsenoside Rh1 is isolated from the root of Panax Ginseng. Ginsenoside Rh1 inhibits the expression of PPARγ, TNF-α, IL-6, and IL-1β.

Purity: 98.17%
Clinical Data: No Development Reported
Size: 10mM x 1mL in DMSO, 5 mg, 10 mg

---

Hispidol ((2)-Hispidol)  Cat. No.: HY-102040

Bioactivity: Hispidol ((Z)-Hispidol) is a potential therapeutic for inflammatory bowel disease, inhibits TNF-α induced adhesion of monocytes to colon epithelial cells with an IC50 of 0.50 µM.

Purity: 98.57%
Clinical Data: No Development Reported
Size: 10mM x 1mL in DMSO, 1 mg, 5 mg, 10 mg, 50 mg, 100 mg

---

Homoplantaginin  Cat. No.: HY-N1949

Bioactivity: Homoplantaginin is a flavonoid from a traditional Chinese medicine Salvia plebeia with antiinflammatory and antioxidant properties. Homoplantaginin could inhibit TNF-α and IL-6 mRNA expression, IKKβ and NF-κB phosphorylation.

Purity: 99.81%
Clinical Data: No Development Reported
Size: 10mM x 1mL in DMSO, 5 mg, 10 mg, 25 mg, 50 mg

---

Hypaconitine  Cat. No.: HY-N0267

Bioactivity: Hypaconitine, an active and highly toxic constituent derived from Aconitum species, is widely used to treat rheumatism.

Purity: 98.0%
Clinical Data: No Development Reported
Size: 10mM x 1mL in DMSO, 10 mg, 50 mg

---

Lenalidomide (CC-5013)  Cat. No.: HY-A0003

Bioactivity: Lenalidomide is a potent inhibitor of TNF-α and has antiangiogenic effect.

Purity: 99.98%
Clinical Data: Launched
Size: 10mM x 1mL in DMSO, 100 mg, 500 mg, 1 g
Lenalidomide hemihydrate
(CC-5013 hemihydrate)  
Cat. No.: HY-A0003B

Bioactivity: Lenalidomide hemihydrate is a potent inhibitor of TNF-α and has antiangiogenic effect.

Purity: 99.82%
Clinical Data: Launched
Size: 10mM x 1mL in DMSO, 100 mg, 500 mg, 1 g

Lenalidomide hydrochloride
(CC-5013 hydrochloride)  
Cat. No.: HY-A0003A

Bioactivity: Lenalidomide hydrochloride is a potent inhibitor of TNF-α and has antiangiogenic effect.

Purity: >98%
Clinical Data: Launched
Size: 100 mg, 500 mg, 1 g

LY 303511
Cat. No.: HY-15643

Bioactivity: LY303511 is a structural analogue of LY294002. LY303511 does not inhibit PI3K. LY303511 enhances TRAIL sensitivity of SHEP-1 neuroblastoma cells. LY303511 reversibly blocks K⁺ currents (IC₅₀ = 64.6±9.1 μM) in MIN6 insulinoma cells.

Purity: >98%
Clinical Data: No Development Reported
Size: 5 mg, 10 mg, 50 mg

LY 303511 hydrochloride
Cat. No.: HY-15643A

Bioactivity: LY 303511 hydrochloride is a structural analogue of LY294002. LY303511 does not inhibit PI3K. LY303511 enhances TRAIL sensitivity of SHEP-1 neuroblastoma cells. LY303511 reversibly blocks K⁺ currents (IC₅₀ = 64.6±9.1 μM) in MIN6 insulinoma cells.

Purity: 98.41%
Clinical Data: No Development Reported
Size: 10mM x 1mL in DMSO, 5 mg, 10 mg, 50 mg

Mesaconitine
Cat. No.: HY-N0724

Bioactivity: Mesaconitine is the main active component of genus aconitum plants.

Purity: 99.55%
Clinical Data: No Development Reported
Size: 10mM x 1mL in DMSO, 5 mg, 10 mg

Methylthiouracil
(MTU)  
Cat. No.: HY-B0513

Bioactivity: Methylthiouracil is an antithyroid agent. Methylthiouracil suppresses the production and activation of TNF-α, IL-6, NF-κB, and ERK1/2.

Purity: 98.0%
Clinical Data: Launched
Size: 10mM x 1mL in DMSO, 50 mg, 100 mg

Mulberroside A
Cat. No.: HY-N0619

Bioactivity: Mulberroside A, the major active anti-tyrosinase compound in the root bark extract of Morus alba L

Purity: 99.53%
Clinical Data: No Development Reported
Size: 10mM x 1mL in DMSO, 5 mg, 10 mg, 50 mg

N-Formyl-Met-Leu-Phe
(fMLP; N-Formyl-MLF)  
Cat. No.: HY-P0224

Bioactivity: N-Formyl-Met-Leu-Phe (fMLP; N-Formyl-MLF) is a chemotactic peptide and a specific ligand of N-formyl peptide receptor (FPR). N-Formyl-Met-Leu-Ph is reported to inhibit TNF-alpha secretion.

Purity: 99.46%
Clinical Data: No Development Reported
Size: 5 mg, 10 mg, 50 mg

Necrostatin 2
Cat. No.: HY-14622

Bioactivity: Necrostatin 2 is a potent necroptosis inhibitor. EC₅₀ for inhibition of necroptosis in FADD-deficient Jurkat T cells treated with TNF-α is 0.05 μM.

Purity: 99.97%
Clinical Data: No Development Reported
Size: 10mM x 1mL in DMSO, 5 mg, 10 mg, 50 mg

Necrostatin 2 racemate
(Necrostatin-2 racemate)  
Cat. No.: HY-14622A

Bioactivity: Necrostatin 2 is a potent necroptosis inhibitor with EC₅₀ of 50 nM.

Purity: 99.10%
Clinical Data: No Development Reported
Size: 10mM x 1mL in DMSO, 1 mg, 5 mg, 10 mg, 50 mg

Bioactivity: Lenalidomide hemihydrate is a potent inhibitor of TNF-α and has antiangiogenic effect.

Purity: 99.97%
Clinical Data: No Development Reported
Size: 10mM x 1mL in DMSO, 5 mg, 10 mg, 50 mg

Bioactivity: Lenalidomide hydrochloride is a potent inhibitor of TNF-α and has antiangiogenic effect.

Purity: >98%
Clinical Data: Launched
Size: 100 mg, 500 mg, 1 g

Bioactivity: LY303511 is a structural analogue of LY294002. LY303511 does not inhibit PI3K. LY303511 enhances TRAIL sensitivity of SHEP-1 neuroblastoma cells. LY303511 reversibly blocks K⁺ currents (IC₅₀ = 64.6±9.1 μM) in MIN6 insulinoma cells.

Purity: >98%
Clinical Data: No Development Reported
Size: 5 mg, 10 mg, 50 mg

Bioactivity: Methylthiouracil is an antithyroid agent. Methylthiouracil suppresses the production and activation of TNF-α, IL-6, NF-κB, and ERK1/2.

Purity: 98.0%
Clinical Data: Launched
Size: 10mM x 1mL in DMSO, 50 mg, 100 mg

Bioactivity: Mulberroside A, the major active anti-tyrosinase compound in the root bark extract of Morus alba L

Purity: 99.53%
Clinical Data: No Development Reported
Size: 10mM x 1mL in DMSO, 5 mg, 10 mg, 50 mg

Bioactivity: N-Formyl-Met-Leu-Phe (fMLP; N-Formyl-MLF) is a chemotactic peptide and a specific ligand of N-formyl peptide receptor (FPR). N-Formyl-Met-Leu-Ph is reported to inhibit TNF-alpha secretion.

Purity: 99.46%
Clinical Data: No Development Reported
Size: 5 mg, 10 mg, 50 mg

Bioactivity: Necrostatin 2 is a potent necroptosis inhibitor. EC₅₀ for inhibition of necroptosis in FADD-deficient Jurkat T cells treated with TNF-α is 0.05 μM.

Purity: 99.97%
Clinical Data: No Development Reported
Size: 10mM x 1mL in DMSO, 5 mg, 10 mg, 50 mg

Bioactivity: Necrostatin 2 is a potent necroptosis inhibitor with EC₅₀ of 50 nM.

Purity: 99.10%
Clinical Data: No Development Reported
Size: 10mM x 1mL in DMSO, 1 mg, 5 mg, 10 mg, 50 mg
<table>
<thead>
<tr>
<th><strong>Necrostatin 2 S enantiomer</strong></th>
<th><strong>Cat. No.: HY-14622B</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bioactivity:</strong> Necrostatin 2 is a potent necroptosis inhibitor with EC50 of 50 nM.</td>
<td></td>
</tr>
<tr>
<td><strong>Purity:</strong> 99.83%</td>
<td></td>
</tr>
<tr>
<td><strong>Clinical Data:</strong> No Development Reported</td>
<td></td>
</tr>
<tr>
<td><strong>Size:</strong> 10mM x 1mL in DMSO, 1 mg, 5 mg, 10 mg, 50 mg</td>
<td></td>
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</tbody>
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<table>
<thead>
<tr>
<th><strong>Nedocromil sodium</strong></th>
<th><strong>(FPL 59002KP; Nedocromil disodium salt)</strong></th>
<th><strong>Cat. No.: HY-16344</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bioactivity:</strong> NEDOCROMIL SODIUM is a potent TNF-α inhibitor with an IC&lt;sub&gt;50&lt;/sub&gt; value of 1.67 μM for Blood eosinophils.</td>
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</tr>
<tr>
<td><strong>Purity:</strong> &gt;98%</td>
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<tr>
<td><strong>Clinical Data:</strong> No Development Reported</td>
<td></td>
<td></td>
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<tr>
<td><strong>Size:</strong> 250 mg, 500 mg</td>
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<table>
<thead>
<tr>
<th><strong>Neochlorogenic acid</strong></th>
<th><strong>(trans-5-O-Caffeoylquinic acid)</strong></th>
<th><strong>Cat. No.: HY-N0722</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bioactivity:</strong> Neochlorogenic acid is a natural polyphenolic compound found in dried fruits and other plants. Neochlorogenic acid inhibits the production of TNF-α and IL-1β. Neochlorogenic acid suppresses iNOS and COX-2 protein expression. Neochlorogenic acid also inhibits phosphorylated NF-κB p65 and &lt;b&gt;…&lt;/b&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Purity:</strong> 99.46%</td>
<td></td>
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<tr>
<td><strong>Clinical Data:</strong> No Development Reported</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Size:</strong> 10mM x 1mL in DMSO, 5 mg, 10 mg</td>
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<table>
<thead>
<tr>
<th><strong>Pentosan Polysulfate</strong></th>
<th><strong>Cat. No.: HY-A0203</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bioactivity:</strong> Pentosan Polysulfate is a semi-synthetic drug used to treat various medical conditions including thrombi and interstitial cystitis.</td>
<td></td>
</tr>
<tr>
<td><strong>Purity:</strong> 98.0%</td>
<td></td>
</tr>
<tr>
<td><strong>Clinical Data:</strong> Launched</td>
<td></td>
</tr>
<tr>
<td><strong>Size:</strong> 100 mg</td>
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<table>
<thead>
<tr>
<th><strong>Pomalidomide</strong></th>
<th><strong>(CC-4047)</strong></th>
<th><strong>Cat. No.: HY-10984</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bioactivity:</strong> Pomalidomide is a known inhibitor of TNF-α release in LPS stimulated human PBMC with IC&lt;sub&gt;50&lt;/sub&gt; of 13 nM.</td>
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<tr>
<td><strong>Purity:</strong> 99.86%</td>
<td></td>
<td></td>
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<tr>
<td><strong>Clinical Data:</strong> Launched</td>
<td></td>
<td></td>
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<tr>
<td><strong>Size:</strong> 10mM x 1mL in DMSO, 10 mg, 50 mg, 100 mg, 200 mg</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>QNZ</strong></th>
<th><strong>(EVP4593)</strong></th>
<th><strong>Cat. No.: HY-13812</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bioactivity:</strong> QNZ shows strong inhibitory effects on NF-κB transcriptional activation and TNF-α production with IC&lt;sub&gt;50&lt;/sub&gt; of 11 and 7 nM, respectively. EVP4593 is a neuroprotective inhibitor of SOC channel.</td>
<td></td>
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</tr>
<tr>
<td><strong>Purity:</strong> 98.46%</td>
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<tr>
<td><strong>Clinical Data:</strong> No Development Reported</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Size:</strong> 10mM x 1mL in DMSO, 5 mg, 10 mg, 50 mg</td>
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<table>
<thead>
<tr>
<th><strong>R-7050</strong></th>
<th><strong>Cat. No.: HY-110203</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bioactivity:</strong> R-7050 is a tumor necrosis factor receptor (TNFR) antagonist with greater selectivity toward TNFα.</td>
<td></td>
</tr>
<tr>
<td><strong>Purity:</strong> 98.83%</td>
<td></td>
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<tr>
<td><strong>Clinical Data:</strong> No Development Reported</td>
<td></td>
</tr>
<tr>
<td><strong>Size:</strong> 10mM x 1mL in DMSO, 5 mg, 10 mg, 25 mg, 50 mg, 100 mg</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Roquinimex</strong></th>
<th><strong>(Linomide; FCF89; LS2616; ABR212616; PNU212616)</strong></th>
<th><strong>Cat. No.: HY-13743</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bioactivity:</strong> Roquinimex (Linomide; PNU212616; ABR212616) is a quinoline derivative immunostimulant which increases NK cell activity and macrophage cytotoxicity; inhibits angiogenesis and reduces the secretion of TNF alpha</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Purity:</strong> 98.88%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Clinical Data:</strong> No Development Reported</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Size:</strong> 10mM x 1mL in DMSO, 10 mg, 50 mg</td>
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<table>
<thead>
<tr>
<th><strong>Shikonin</strong></th>
<th><strong>(C.I. 75535; Isoarnebin 4)</strong></th>
<th><strong>Cat. No.: HY-N0822</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bioactivity:</strong> Shikonin is an inhibitor of TMEM16A chloride channel with an IC&lt;sub&gt;50&lt;/sub&gt; of 6.5 μM. Shikonin is also a specific inhibitor of PKM2 and can also inhibit tumor necrosis factor-α (TNF-α) and prevent activation of nuclear factor-κB (NF-κB) pathway.</td>
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<tr>
<td><strong>Purity:</strong> 99.64%</td>
<td></td>
<td></td>
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<tr>
<td><strong>Clinical Data:</strong> No Development Reported</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Size:</strong> 10mM x 1mL in DMSO, 10 mg, 25 mg, 50 mg, 100 mg</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Sinensetin</strong></th>
<th><strong>(Pedalitin permethyl ether)</strong></th>
<th><strong>Cat. No.: HY-N0297</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bioactivity:</strong> Sinensetin is a methylated flavone found in certain citrus fruits. possesses potent antiangiogenesis and anti-inflammatory, sinensetin enhances adipogenesis and lipolysis.</td>
<td></td>
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<tr>
<td><strong>Purity:</strong> 99.22%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Clinical Data:</strong> No Development Reported</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Size:</strong> 10mM x 1mL in DMSO, 5 mg, 10 mg, 25 mg</td>
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</tbody>
</table>
**Taurochenodeoxycholic acid**  
*(12-Deoxycholyltaurine)*  
Cat. No.: HY-N2027

**Bioactivity:** Taurochenodeoxycholic acid is one of the main bioactive substances of animals’ bile acid.

**Purity:** 99.80%
**Clinical Data:** Launched
**Size:** 10mM x 1mL in DMSO, 50 mg

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**TIC10**  
*(ONC-201)*  
Cat. No.: HY-15615A

**Bioactivity:** TIC10 is a potent, orally active, and stable TRAIL inducer, also inhibits Akt and ERK activity.

**Purity:** 99.68%
**Clinical Data:** Phase 2
**Size:** 10mM x 1mL in DMSO, 5 mg, 10 mg, 50 mg, 100 mg, 200 mg

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**TNF-α-IN-1**  
Cat. No.: HY-112275

**Bioactivity:** TNF-α-IN-1 is a TNF-α inhibitor extracted from patent US20030096841A1, compound example I-7.

**Purity:** >98%
**Clinical Data:** No Development Reported
**Size:** 250 mg, 500 mg

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**Notes:**

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