HIF/HIF Prolyl-Hydroxylase

Hypoxia-inducible factors; HIFs; HIF-PH

HIFs (Hypoxia-inducible factors) are transcription factors that respond to changes in available oxygen in the cellular environment, to be specific, to decreases in oxygen, or hypoxia. The HIF signaling cascade mediates the effects of hypoxia, the state of low oxygen concentration, on the cell. Hypoxia often keeps cells from differentiating. However, hypoxia promotes the formation of blood vessels, and is important for the formation of a vascular system in embryos, and cancer tumors. The hypoxia in wounds also promotes the migration of keratinocytes and the restoration of the epithelium. In general, HIFs are vital to development. In mammals, deletion of the HIF-1 genes results in perinatal death. HIF-1 has been shown to be vital to chondrocyte survival, allowing the cells to adapt to low-oxygen conditions within the growth plates of bones. HIF plays a central role in the regulation of human metabolism. Recently, several drugs that act as selective HIF prolyl-hydroxylase inhibitors have been developed.
### HIF/HIF Prolyl-Hydroxylase Inhibitors, Agonists, Antagonists, Activators & Modulators

<table>
<thead>
<tr>
<th><strong>Acetylenobufagin</strong></th>
<th><strong>Cat. No.: HY-N6905</strong></th>
<th><strong>Acetylarenobufagin</strong> is a steroidal hypoxia inducible factor-1 (HIF-1) modulator.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Purity:</strong></td>
<td>&gt; 98%</td>
<td><strong>Clinical Data:</strong> No Development Reported</td>
</tr>
<tr>
<td><strong>Size:</strong></td>
<td>1 mg, 5 mg</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Acriflavine</strong></th>
<th><strong>Cat. No.: HY-100575</strong></th>
<th><strong>Acriflavine</strong> is a fluorescent dye for labeling high molecular weight RNA. It is also a topical antiseptic.</th>
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</thead>
<tbody>
<tr>
<td><strong>Purity:</strong></td>
<td>98.62%</td>
<td><strong>Clinical Data:</strong> No Development Reported</td>
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<tr>
<td><strong>Size:</strong></td>
<td>100 mg</td>
<td></td>
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<table>
<thead>
<tr>
<th><strong>AFP464</strong></th>
<th><strong>Cat. No.: HY-16031</strong></th>
<th><strong>AFP464</strong> is an active HIF-1α inhibitor with an IC₅₀ of 0.25 μM, also is a potent aryl hydrocarbon receptor (AhR) activator.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Purity:</strong></td>
<td>&gt; 98%</td>
<td><strong>Clinical Data:</strong> No Development Reported</td>
</tr>
<tr>
<td><strong>Size:</strong></td>
<td>250 mg, 500 mg</td>
<td></td>
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<table>
<thead>
<tr>
<th><strong>BAY 87-2243</strong></th>
<th><strong>Cat. No.: HY-15836</strong></th>
<th><strong>BAY 87-2243</strong> is a highly potent and selective hypoxia-inducible factor-1 (HIF-1) inhibitor.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Purity:</strong></td>
<td>99.41%</td>
<td><strong>Clinical Data:</strong> No Development Reported</td>
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<tr>
<td><strong>Size:</strong></td>
<td>10 mM × 1 mL, 5 mg, 10 mg, 50 mg, 100 mg</td>
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<table>
<thead>
<tr>
<th><strong>Chlorogenic acid</strong></th>
<th><strong>Cat. No.: HY-N0055</strong></th>
<th><strong>Chlorogenic acid</strong> is a major phenolic compound in coffee and tea.</th>
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</thead>
<tbody>
<tr>
<td><strong>Purity:</strong></td>
<td>99.29%</td>
<td><strong>Clinical Data:</strong> Phase 3</td>
</tr>
<tr>
<td><strong>Size:</strong></td>
<td>10 mM × 1 mL, 500 mg</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Daprodustat</strong></th>
<th><strong>Cat. No.: HY-17608</strong></th>
<th><strong>Daprodustat</strong> (GSK1278863) is an orally active hypoxia-inducible factor prolyl hydroxylase inhibitor being developed for the treatment of anemia associated with chronic kidney disease.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Purity:</strong></td>
<td>99.39%</td>
<td><strong>Clinical Data:</strong> Phase 3</td>
</tr>
<tr>
<td><strong>Size:</strong></td>
<td>10 mM × 1 mL, 5 mg, 10 mg, 50 mg, 100 mg</td>
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<table>
<thead>
<tr>
<th><strong>Deoxyshikonin</strong></th>
<th><strong>Cat. No.: HY-N2187</strong></th>
<th><strong>Deoxyshikonin</strong> is isolated from Lithospermum erythrorhizon Sieb with antitumor activity.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Purity:</strong></td>
<td>&gt; 98%</td>
<td><strong>Clinical Data:</strong> No Development Reported</td>
</tr>
<tr>
<td><strong>Size:</strong></td>
<td>1 mg, 5 mg</td>
<td></td>
</tr>
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<table>
<thead>
<tr>
<th><strong>Dencichin</strong></th>
<th><strong>Cat. No.: HY-N1477</strong></th>
<th><strong>Dencichin</strong> is a non-protein amino acid originally extracted from Panax notoginseng, and can inhibit HIF-prolyl hydroxylase-2 (PHD-2) activity.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Purity:</strong></td>
<td>&gt; 98%</td>
<td><strong>Clinical Data:</strong> No Development Reported</td>
</tr>
<tr>
<td><strong>Size:</strong></td>
<td>5 mg, 10 mg, 25 mg</td>
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<table>
<thead>
<tr>
<th><strong>Desidustat</strong></th>
<th><strong>Cat. No.: HY-103227</strong></th>
<th><strong>Desidustat</strong> is an inhibitor of HIF hydroxylase extracted from patent WO 2014102818 A1, compound example 2.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Purity:</strong></td>
<td>99.49%</td>
<td><strong>Clinical Data:</strong> No Development Reported</td>
</tr>
<tr>
<td><strong>Size:</strong></td>
<td>10 mM × 1 mL, 1 mg, 5 mg, 10 mg, 50 mg, 100 mg</td>
<td></td>
</tr>
</tbody>
</table>

Tel: 609-228-6898    Fax: 609-228-5909    Email: sales@MedChemExpress.com
DMOG (Dimethyloxallyl Glycine)

DMOG (Dimethyloxallyl Glycine) is a cell-permeable and competitive inhibitor of HIF-1α prolyl hydroxylase (HIF-PH).

- **Purity:** 99.15%
- **Clinical Data:** No Development Reported
- **Size:** 10 mM × 1 mL, 50 mg, 100 mg, 200 mg, 500 mg

EL-102

EL102 is an inhibitor of HIF1α, which can inhibit tubulin polymerisation and decreased microtubule stability.

- **Purity:** 99.07%
- **Clinical Data:** No Development Reported
- **Size:** 10 mM × 1 mL, 1 mg, 5 mg, 10 mg, 50 mg, 100 mg

Enarodustat (JTZ-951)

Enarodustat is a potent and orally active factor prolyl hydroxylase inhibitor, with an EC₅₀ of 0.22 μM. Enarodustat has entered clinical trial for renal anemia.

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

FG-2216 (YM-311)

FG-2216 is a potent HIF-prolyl hydroxylase inhibitor with IC₅₀ of 3.9 μM for PDH2 enzyme; orally bioavailable and induced significant and reversible Epo induction in vivo.

- **Purity:** 99.31%
- **Clinical Data:** No Development Reported
- **Size:** 10 mM × 1 mL, 5 mg, 10 mg, 25 mg, 50 mg, 100 mg

Glucosamine hydrochloride (D-()+)-Glucosamine hydrochloride; Chitosamine hydrochloride

Glucosamine (hydrochloride) is a natural product. IC₅₀ value: Target: In vitro: Glucosamine hydrochloride exhibited dose-dependent DPPH antioxidant activity.

- **Purity:** >98.0%
- **Clinical Data:** Launched
- **Size:** 10 mM × 1 mL, 10 mg, 50 mg

GN44028

GN44028 is a hypoxia inducible factor (HIF)-1 inhibitor, with an IC₅₀ of 14 nM. GN44028 inhibits hypoxia-induced HIF-1α transcriptional activity without suppressing HIF-1α mRNA expression, HIF-1α protein accumulation, or HIF-1α/HIF-1β heterodimerization.

- **Purity:** >99.0%
- **Clinical Data:** No Development Reported
- **Size:** 10 mM × 1 mL, 5 mg

HIF-2α-IN-1

HIF-2α-IN-1 is a HIF-2α inhibitor with an IC₅₀ of less than 500 nM in HIF-2α scintillation proximity assay.

- **Purity:** 99.45%
- **Clinical Data:** No Development Reported
- **Size:** 10 mM × 1 mL, 5 mg, 10 mg, 25 mg

Hydralazine hydrochloride

Hydralazine hydrochloride is a direct-acting vasodilator that is used as an antihypertensive agent.

- **Purity:** >98.0%
- **Clinical Data:** Launched
- **Size:** 10 mM × 1 mL, 100 mg, 500 mg

IDF-11774

IDF-11774 is a novel hypoxia-inducible factor α (HIFα)-1 inhibitor with an IC₅₀ of 3.65μM.

- **Purity:** 98.04%
- **Clinical Data:** No Development Reported
- **Size:** 10 mM × 1 mL, 1 mg, 5 mg, 10 mg, 50 mg

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IOX2
Cat. No.: HY-15468
IOX2 is a specific prolyl hydroxylase-2 (PHD2) inhibitor with IC\_50 of 22 nM.

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

JNJ-42041935
Cat. No.: HY-12832
JNJ-42041935 is a potent, competitive and selective inhibitor of prolyl hydroxylase PHD, inhibits PHD1, PHD2, and PHD3 with pK\_i values of 7.91±0.04, 7.29±0.05, and 7.65±0.09, respectively.

Purity: 99.79%
Clinical Data: No Development Reported
Size: 10 mM × 1 mL, 5 mg, 10 mg

LW6
(HIF-1α inhibitor: LW8)
Cat. No.: HY-13671
LW6 is a novel HIF-1 inhibitor with an IC\_50 of 4.4 μM.

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

ML228
(CID-46742353)
Cat. No.: HY-12754
ML228(CID-46742353) is an activator of the Hypoxia Inducible Factor (HIF) pathway; potently activate HIF in vitro as well as its downstream target VEGF.

Purity: >98.0%
Clinical Data: No Development Reported
Size: 10 mM × 1 mL, 5 mg, 10 mg, 50 mg, 100 mg

Molidustat
(BAY 85-3934)
Cat. No.: HY-12654
Molidustat (BAY 85-3934) is a novel inhibitor of hypoxia-inducible factor prolyl hydroxylase (HIF-PH) with mean IC\_50 values of 480 nM for PHD1, 280 nM for PHD2, and 450 nM for PHD3.

Purity: 98.33%
Clinical Data: Launched
Size: 10 mM × 1 mL, 5 mg, 10 mg, 50 mg, 100 mg

Oltipraz
(RP 35972; NSC 347901)
Cat. No.: HY-12519
Oltipraz has an inhibitory effect on HIF-1α activation in a time-dependent manner, completely abrogating HIF-1α induction at ≥10 μM concentrations, the IC50 of Oltipraz for HIF-1α inhibition is 10 μM.

Purity: 99.82%
Clinical Data: Phase 3
Size: 10 mM × 1 mL, 10 mg, 50 mg, 100 mg, 200 mg, 500 mg
<table>
<thead>
<tr>
<th>Compound</th>
<th>Category</th>
<th>Cat. No.</th>
<th>Description</th>
<th>Purity</th>
<th>Clinical Data</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oroxylin A</td>
<td>Cat. No.: HY-N0560</td>
<td>(Baicalein 6-methyl ether; 6-Methoxybaicalein)</td>
<td>Oroxylin A is a natural active flavonoid with strong anticancer effects. IC50 value: Target: In vitro: Oroxylin A suppressed the MDM2-mediated degradation of p53 via downregulating MDM2 transcription in wt-p53 cancer cells.</td>
<td>99.90%</td>
<td>No Development Reported</td>
<td>10 mM × 1 mL, 5 mg, 10 mg</td>
</tr>
<tr>
<td>Paeoniflorin</td>
<td>Cat. No.: HY-N0293</td>
<td>(Peoniflorin)</td>
<td>Paeoniflorin is a herbal constituent extracted from the root of Paeonia albiflora Pall.</td>
<td>&gt;98.0%</td>
<td>Phase 3</td>
<td>10 mM × 1 mL, 100 mg, 200 mg</td>
</tr>
<tr>
<td>Prolyl Hydroxylase inhibitor 1</td>
<td>Cat. No.: HY-112441</td>
<td></td>
<td>Prolyl Hydroxylase inhibitor 1 (Compound 15i) is an orally active hypoxia inducible factor (HIF)-prolyl hydroxylase (PHD) inhibitor with an IC50 of 62.23 nM. Antianemia agent.</td>
<td>&gt;98%</td>
<td>No Development Reported</td>
<td>100 mg, 250 mg, 500 mg</td>
</tr>
<tr>
<td>PT-2385</td>
<td>Cat. No.: HY-12867</td>
<td></td>
<td>PT-2385 is a selective HIF-2α inhibitor with a Kp of less than 50 nM.</td>
<td>99.48%</td>
<td>No Development Reported</td>
<td>10 mM × 1 mL, 2 mg, 5 mg, 10 mg, 50 mg</td>
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<tr>
<td>PT2399</td>
<td>Cat. No.: HY-108697</td>
<td></td>
<td>PT2399 is a potent and selective HIF-2α antagonist, which directly binds to HIF-2α PAS B domain with an IC50 of 6.23 nM. PT2399 displays potent antitumor activity in vivo.</td>
<td>99.88%</td>
<td>No Development Reported</td>
<td>10 mM × 1 mL, 5 mg, 10 mg, 50 mg, 100 mg</td>
</tr>
<tr>
<td>PX-478</td>
<td>Cat. No.: HY-10231</td>
<td></td>
<td>PX-478 is an antitumor inhibitor of hypoxia-inducible factor-1α (HIF-1α).</td>
<td>&gt;98.0%</td>
<td>Phase 1</td>
<td>5 mg, 10 mg, 50 mg, 100 mg</td>
</tr>
<tr>
<td>Roxadustat</td>
<td>Cat. No.: HY-13426</td>
<td>(FG-4592)</td>
<td>Roxadustat is an oral hypoxia-inducible factor prolyl-hydroxylase inhibitor (HIF-PHI) that promotes erythropoiesis through increasing endogenous erythropoietin, improving iron regulation, and reducing hepcidin.</td>
<td>99.91%</td>
<td>Phase 3</td>
<td>10 mM × 1 mL, 10 mg, 50 mg, 100 mg, 200 mg, 500 mg, 1 g</td>
</tr>
<tr>
<td>SYP-5</td>
<td>Cat. No.: HY-100693</td>
<td></td>
<td>SYP-5 is a novel HIF-1 inhibitor, suppresses tumor cells invasion and angiogenesis.</td>
<td>99.68%</td>
<td>No Development Reported</td>
<td>10 mM × 1 mL, 5 mg, 10 mg, 50 mg, 100 mg</td>
</tr>
</tbody>
</table>

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### THS-044

THS-044 binding stabilizes the HIF2α PAS-B folded state, for regulating HIF2 activity in endogenous and clinical settings.

- **Purity:** 98.48%
- **Clinical Data:** No Development Reported
- **Size:** 10 mM × 1 mL, 5 mg, 10 mg, 50 mg

### Tilorone dihydrochloride

Tilorone dihydrochloride is the first recognized synthetic, small molecular weight compound that is an orally active interferon inducer, used as an antiviral drug.

- **Purity:** 99.94%
- **Clinical Data:** Launched
- **Size:** 10 mM × 1 mL, 100 mg, 500 mg

### TM6089

TM6089 is a unique Prolyl Hydroxylase (PHD) inhibitor which stimulates HIF activity without iron chelation and induces angiogenesis and exerts organ protection against ischemia.

- **Purity:** >98%
- **Clinical Data:** 1 mg, 5 mg

### TP0463518

TP0463518 is a potent hypoxia-inducible factor prolyl hydroxylases (PHDs) inhibitor with a Ki value of 5.3 nM for human PHD2. TP0463518 also inhibits human PHD1/PHD3 with IC50 of 18 and 63 nM as well as monkey PHD2 with an IC50 value of 22 nM.

- **Purity:** 98.02%
- **Clinical Data:** No Development Reported
- **Size:** 10 mM × 1 mL, 5 mg, 10 mg, 50 mg, 100 mg

### Vadadustat

(PG-1016548; AKB-6548)

Vadadustat is a novel, titratable, oral hypoxia-inducible factor prolyl hydroxylase (HIF-PH) inhibitor in development for the treatment of anemia.

- **Purity:** 99.63%
- **Clinical Data:** Launched
- **Size:** 10 mM × 1 mL, 2 mg, 5 mg, 10 mg, 50 mg, 100 mg

### VCE-004.8

VCE-004.8, a semi-synthetic multitarget cannabinoquinoid, is a specific PPARγ and CB2 receptor dual agonist with potent anti-inflammatory activity. VCE-004.8 inhibits prolyl-hydroxylases (PHDs) and activates the HIF pathway.

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

### ZINC13466751

ZINC13466751 is a potent inhibitor of HIF-1α/von Hippel-Lindau interaction with an IC50 of 2.0 µM.

- **Purity:** >98%
- **Clinical Data:** No Development Reported
- **Size:** 100 mg, 250 mg, 500 mg