

# Pim

## Pim kinases

HDAC Inhibitor:  
Vorinostat (SAHA)



HDAC (Histone deacetylase)

Pim kinases are a small family of serine/threonine kinases regulating several signaling pathways that are fundamental to cancer development and progression. They were first recognized as pro-viral integration sites for the Moloney Murine Leukemia virus. Pim kinases possess a hinge region which creates a unique binding pocket for ATP. Absence of a regulatory domain means that these proteins are constitutively active once transcribed. Pim kinases are critical downstream effectors of the ABL (ableson), JAK2 (janus kinase 2), and Flt-3 (FMS related tyrosine kinase 1) oncogenes and are required by them to drive tumorigenesis. Recent investigations have established that the Pim kinases function as effective inhibitors of apoptosis and

when overexpressed, produce resistance to the mTOR (mammalian target of rapamycin) inhibitor, rapamycin . Overexpression of the PIM kinases has been reported in several hematological and solid tumors (PIM 1), myeloma, lymphoma, leukemia (PIM 2) and adenocarcinomas (PIM 3). As such, the Pim kinases are a very attractive target for pharmacological inhibition in cancer therapy. Novel small molecule inhibitors of the human Pim kinases have been designed and are currently undergoing preclinical evaluation.

## Pim Inhibitors & Modulators

### (1S,3R,5R)-PIM447 dihydrochloride

((1S,3R,5R)-LGH447 dihydrochloride)

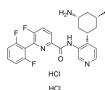
Cat. No.: HY-19322C

**Bioactivity:** (1S,3R,5R)-PIM447 (dihydrochloride) an **PIM** inhibitor extracted from patent US 20100056576 A1, compound example 72, has **IC<sub>50</sub>** values of 0.095  $\mu$ M for Pim1, 0.522  $\mu$ M for Pim2 and 0.369  $\mu$ M for Pim3.

**Purity:** 96.21%

**Clinical Data:** No Development Reported

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



### (Z)-SMI-4a

Cat. No.: HY-16576A

**Bioactivity:** (Z)-SMI-4a is a selective ATP-competitive Pim-1 kinase inhibitor with an **IC<sub>50</sub>** of 21 nM for Pim-1 compared to an **IC<sub>50</sub>** of 100 nM for Pim-2 and with little or no activity against a panel of 50 other kinases tested. **IC<sub>50</sub>** value: 21 nM (Pim1); 100 nM (Pim2) [1] Target: Pim-1 in vitro: Incubation of...

**Purity:** >98%

**Clinical Data:** No Development Reported

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



### AZD1208

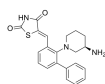
Cat. No.: HY-15604

**Bioactivity:** AZD1208 is a novel, orally bioavailable, highly selective **PIM** kinases inhibitor.

**Purity:** 99.67%

**Clinical Data:** Phase 1

**Size:** 10mM x 1mL in DMSO,  
5 mg, 10 mg, 50 mg, 100 mg, 200 mg



### AZD1208 hydrochloride

Cat. No.: HY-15604A

**Bioactivity:** AZD1208 hydrochloride is a novel, orally bioavailable, highly selective **PIM** kinases inhibitor.

**Purity:** >98%

**Clinical Data:** No Development Reported

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



### CX-6258

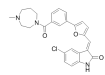
Cat. No.: HY-18095

**Bioactivity:** CX-6258 is a potent, orally efficacious Pim 1/2/3 kinase(**IC<sub>50</sub>**=5 nM/25 nM/16 nM) inhibitor with excellent biochemical potency and kinase selectivity.

**Purity:** 99.13%

**Clinical Data:** No Development Reported

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



### CX-6258 hydrochloride hydrate

Cat. No.: HY-18095A

**Bioactivity:** CX-6258 hydrochloride hydrate is a potent, orally efficacious Pim 1/2/3 kinase(**IC<sub>50</sub>**=5 nM/25 nM/16 nM) inhibitor with excellent biochemical potency and kinase selectivity.

**Purity:** 99.55%

**Clinical Data:** No Development Reported

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



### GDC-0339

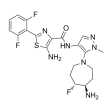
Cat. No.: HY-16976

**Bioactivity:** GDC-0339 is a Pim kinase inhibitor with **IC<sub>50</sub>** of 43.6 nM for BaF3 PIM1. **IC<sub>50</sub>** value: 43.6 nM (for BaF3 PIM1), 0.04 nM (**K<sub>i</sub>** for PIM1 LC-3K) Target: Pim

**Purity:** 99.96%

**Clinical Data:** No Development Reported

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



### GENE-955

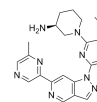
Cat. No.: HY-101783

**Bioactivity:** GNE-955 is a potent and orally active pan **Pim kinase** inhibitor with **K<sub>s</sub>** of 0.018, 0.11, 0.08 nM for Pim1, Pim2, Pim3, respectively.

**Purity:** >98%

**Clinical Data:** No Development Reported

**Size:** 250 mg, 500 mg



### Hispidulin

(Datin)

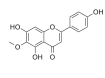
Cat. No.: HY-N1950

**Bioactivity:** Hispidulin is a natural flavone with a broad spectrum of biological activities. Hispidulin is a Pim-1 inhibitor with an **IC<sub>50</sub>** of 2.71  $\mu$ M.

**Purity:** 99.33%

**Clinical Data:** No Development Reported

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



### INCB053914 phosphate

Cat. No.: HY-101870B











**Bioactivity:** INCB053914 phosphate is an inhibitor of **Pim** extracted from patent WO 2017044730 A1, compound 1; has an **IC<sub>50</sub>** of less than 35 nM.

**Purity:** 99.91%

**Clinical Data:** No Development Reported

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



<p><b>M-110</b></p> <p style="text-align: right;">Cat. No.: HY-12830</p> <p><b>Bioactivity:</b> M-110 is a novel and highly selective inhibitor of PIM kinases; inhibits the proliferation of prostate cancer cell lines with IC<sub>50</sub>s of 0.6 to 0.9 μM, with no activity on normal human peripheral blood mononuclear cells up to 40 μM.</p> <p><b>Purity:</b> &gt;98%</p> <p><b>Clinical Data:</b> No Development Reported</p> <p><b>Size:</b> 10mM x 1mL in DMSO, 5 mg, 10 mg</p> 	<p><b>PIM-447 dihydrochloride</b> (LGH447 dihydrochloride)</p> <p style="text-align: right;">Cat. No.: HY-19322B</p> <p><b>Bioactivity:</b> PIM447 is a <b>pan-PIM kinase</b> inhibitor with K<sub>i</sub>s of 6, 18, 9 nM for PIM1, PIM2 and PIM3, respectively.</p> <p><b>Purity:</b> 99.67%</p> <p><b>Clinical Data:</b> Phase 2</p> <p><b>Size:</b> 10mM x 1mL in DMSO, 1 mg, 5 mg, 10 mg, 50 mg, 100 mg</p> 
<p><b>PIM1-IN-1</b></p> <p style="text-align: right;">Cat. No.: HY-111552</p> <p><b>Bioactivity:</b> PIM1-IN-1 is a potent and highly selective <b>PIM1/3</b> inhibitor, with IC<sub>50</sub>s of 7, 5530 and 70 nM for PIM1, PIM2, and PIM3, respectively, inhibits the phosphorylation of BAD, a downstream target of PIM, with an EC<sub>50</sub> of 262 nM. PIM1-I...</p> <p><b>Purity:</b> &gt;98%</p> <p><b>Clinical Data:</b> No Development Reported</p> <p><b>Size:</b> 500 mg, 250 mg, 100 mg</p> 	<p><b>Pim1/AKK1-IN-1</b> (LKB1/AAK1 dual inhibitor)</p> <p style="text-align: right;">Cat. No.: HY-10371</p> <p><b>Bioactivity:</b> Pim1/AKK1-IN-1 is a potent multi-kinase inhibitor with K<sub>d</sub> values of 35 nM/53 nM/75 nM/380 nM for <b>Pim1/AKK1/MST2/LKB1</b> respectively, and also inhibits MPSK1 and TNIK.</p> <p><b>Purity:</b> 98.10%</p> <p><b>Clinical Data:</b> No Development Reported</p> <p><b>Size:</b> 10mM x 1mL in DMSO, 5 mg, 10 mg, 50 mg</p> 
<p><b>PIM447</b> (LGH447)</p> <p style="text-align: right;">Cat. No.: HY-19322</p> <p><b>Bioactivity:</b> PIM447 is novel pan-PIM kinase inhibitor, including Moloney Murine Leukemia (PIM) 1, 2, and 3 Kinase.</p> <p><b>Purity:</b> &gt;98%</p> <p><b>Clinical Data:</b> Phase 2</p> <p><b>Size:</b> 1 mg, 5 mg, 10 mg, 50 mg, 100 mg</p> 	<p><b>Quercetagenin</b> (6-Hydroxyquercetin)</p> <p style="text-align: right;">Cat. No.: HY-N4149</p> <p><b>Bioactivity:</b> Quercetagenin (6-Hydroxyquercetin) is the major flavonoid isolated from Citrus unshiu (C. unshiu) peel [1]. Quercetagenin is a moderately potent and selective, cell-permeable <b>pim-1</b> kinase inhibitor (IC<sub>50</sub> 0.34 μM) [2]. Anti-inflammatory ...</p> <p><b>Purity:</b> &gt;98%</p> <p><b>Clinical Data:</b> No Development Reported</p> <p><b>Size:</b> 5 mg, 10 mg</p> 
<p><b>SGI-1776</b></p> <p style="text-align: right;">Cat. No.: HY-13287</p> <p><b>Bioactivity:</b> SGI-1776 is an inhibitor of <b>Pim</b> kinases, with IC<sub>50</sub>s of 7 nM, 363 nM, and 69 nM for Pim-1, -2 and -3, respectively.</p> <p><b>Purity:</b> 99.94%</p> <p><b>Clinical Data:</b> Phase 1</p> <p><b>Size:</b> 10mM x 1mL in DMSO, 5 mg, 10 mg, 50 mg</p> 	<p><b>SMI-16a</b> (PIM1/2 Kinase Inhibitor VI)</p> <p style="text-align: right;">Cat. No.: HY-101947</p> <p><b>Bioactivity:</b> SMI-16a is a selective <b>Pim</b> kinase inhibitor with IC<sub>50</sub> values of 0.15, 0.02 and 48 μM for Pim1, Pim2 and PC3 cells, respectively.</p> <p><b>Purity:</b> 98.0%</p> <p><b>Clinical Data:</b> No Development Reported</p> <p><b>Size:</b> 10mM x 1mL in DMSO, 5 mg, 10 mg, 25 mg, 50 mg</p> 
<p><b>TCS PIM-1 1</b> (SC 204330)</p> <p style="text-align: right;">Cat. No.: HY-18086</p> <p><b>Bioactivity:</b> TCS PIM-1 1(sc-204330) is a potent and selective ATP-competitive Pim-1 kinase inhibitor with IC<sub>50</sub> of 50 nM, displays good selectivity over Pim-2 and MEK1/MEK2(IC<sub>50</sub>s &gt;20,000 nM). IC<sub>50</sub> value: 50 nM [1] Target: Pim-1 TCS PIM-1 1 bound convincingly within the ATP-binding site of Pim-1...</p> <p><b>Purity:</b> 97.41%</p> <p><b>Clinical Data:</b> No Development Reported</p> <p><b>Size:</b> 10mM x 1mL in DMSO, 10 mg, 50 mg</p> 	<p><b>TCS-PIM-1-4a</b> (SMI-4a)</p> <p style="text-align: right;">Cat. No.: HY-16576</p> <p><b>Bioactivity:</b> TCS-PIM-1-4a is a Pim inhibitor that blocks mTORC1 activity via activation of AMPK; kills a wide range of both myeloid and lymphoid cell lines (with IC<sub>50</sub> values ranging from 0.8 to 40 μM). IC<sub>50</sub> value: Target: Pim SMI-4a a novel benzylidene-thiazolidine-2, 4-dione small molecule inhibitor...</p> <p><b>Purity:</b> 99.59%</p> <p><b>Clinical Data:</b> No Development Reported</p> <p><b>Size:</b> 10mM x 1mL in DMSO, 5 mg, 10 mg, 50 mg, 100 mg</p> 

TP-3654

Cat. No.: HY-101126

**Bioactivity:** TP-3654 is a second-generation **Pim** kinase inhibitor with  $K_i$  values of 5 and 42 nM for Pim-1 and Pim-3, respectively.

**Purity:** 99.71%

**Clinical Data:** No Development Reported

**Size:** 10mM x 1mL in DMSO,

5 mg, 10 mg, 25 mg, 50 mg, 100 mg

