GSK-3
Glycogen synthase kinase-3; Glycogen synthase kinase 3

Glycogen synthase kinase 3 (GSK-3) is a multifunctional serine/threonine kinase found in all eukaryotes. GSK-3 is one of the few signaling mediators that play central roles in a diverse range of signaling pathways, including those activated by Wnts, hedgehog, growth factors, cytokines, and G protein-coupled ligands. GSK-3 targets transcription factors, regulates the activity of metabolic and signaling enzymes, and controls the half-life of proteins by earmarking them for degradation. GSK-3 exists as two isoforms, GSK-3a (51 kDa) and GSK3b (47 kDa), which are encoded by distinct genes. These isoforms often have overlapping functions, but they do not always compensate for each other.
## GSK-3 Inhibitors

### 1-Azakenpaullone (1-Akp)
Cat. No.: HY-59090

1-Azakenpaullone (1-Akp) is a highly selective and ATP-competitive inhibitor of glycogen synthase-3 β (GSK-3β), with an IC₅₀ value of 18 nM.

- **Purity:** 98.20%
- **Clinical Data:** No Development Reported
- **Size:** 10 mM × 1 mL, 2 mg, 5 mg, 10 mg

### 5-Iodo-indirubin-3'-monoxime
Cat. No.: HY-111930

5-Iodo-indirubin-3'-monoxime is a potent, GSK-3β and inhibitor, competing with ATP for binding to the catalytic site of the kinase, with IC₅₀'s of 9, 20 and 25 nM, respectively.

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

### A 1070722
Cat. No.: HY-107531

A 1070722 is a potent and selective glycogen synthase-3 (GSK-3) inhibitor, with a Kᵢ of 0.6 nM for both GSK-3α and GSK-3β.

- **Purity:** >99.0%
- **Clinical Data:** No Development Reported
- **Size:** 5 mg

### AR-A014418 (AR 0133418; GSK 3β inhibitor VIII; AR 014418)
Cat. No.: HY-10512

AR-A014418 is a potent, selective and ATP-competitive GSK3β inhibitor with an IC₅₀ of 104 nM.

- **Purity:** 97.22%
- **Clinical Data:** No Development Reported
- **Size:** 10 mM × 1 mL, 5 mg, 10 mg, 50 mg

### AZD1080
Cat. No.: HY-13862

AZD1080 is a potent and selective GSK3 inhibitor. AZD1080 inhibits recombinant human and GSK3α with (IC₅₀) of 8.2 (6.9 nM) and 7.5 (31 GSK3β pKᵢ IC₅₀ nM), respectively.

- **Purity:** 99.10%
- **Clinical Data:** No Development Reported
- **Size:** 10 mM × 1 mL, 5 mg, 10 mg, 50 mg, 100 mg

### Bikinin (Abrasin)
Cat. No.: HY-12524

Bikinin is a non-steroidal, ATP-competitive inhibitor of plant GSK-3/Shaggy-like kinases and activates BR (brassinosteroids) signaling.

- **Purity:** 99.82%
- **Clinical Data:** No Development Reported
- **Size:** 10 mM × 1 mL, 5 mg, 10 mg, 50 mg, 100 mg

### BIO-acetoxime (BIA)
Cat. No.: HY-15356

BIO-acetoxime (BIA) is a potent and selective GSK-3 inhibitor, with IC₅₀ of 0.9 and 5 nM for GSK-3α and GSK-3β, respectively, used in the research of fracture healing.

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

### CHIR-98014
Cat. No.: HY-13076

CHIR-98014 is a potent, cell-permeable GSK-3 inhibitor with IC₅₀ of 0.65 and 0.58 nM for GSK-3α and GSK-3β, respectively; it shows less potent activities against cdc2 and erk2.

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

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CHIR-99021 (Cat. No.: HY-10182)
CHIR-99021 is a GSK-3α/β inhibitor with an IC_{50} of 10 and 6.7 nM, showing 500-fold selectivity over its closest homologs CDC2 and ERK2, as well as other protein kinases.

Purity: 99.76%
Clinical Data: No Development Reported
Size: 10 mM × 1 mL, 5 mg, 10 mg, 50 mg, 100 mg

CHIR-99021 monohydrochloride (Cat. No.: HY-10182A)
CHIR-99021 monohydrochloride is a GSK-3α/β inhibitor with an IC_{50} of 10 nM/6.7 nM, > 500-fold selectivity for GSK-3 versus its closest homologs CDC2 and ERK2, as well as other protein kinases.

Purity: 99.93%
Clinical Data: No Development Reported
Size: 10 mM × 1 mL, 5 mg, 10 mg, 50 mg

CHIR-99021 trihydrochloride (Cat. No.: HY-10182B)
CHIR-99021 trihydrochloride is a GSK-3α/β inhibitor with an IC_{50} of 10 nM/6.7 nM; > 500-fold IC_{50} selectivity for GSK-3 versus its closest homologs CDC2 and ERK2, as well as other protein kinases.

Purity: 97.93%
Clinical Data: No Development Reported
Size: 10 mM × 1 mL, 5 mg, 10 mg, 50 mg

CP21R7 (Cat. No.: HY-100207)
CP21R7 is potent GSK-3β inhibitor, with an IC_{50} of 1.8 nM; CP21R7 also shows inhibitory activity against PKCα, with an IC_{50} of 1900 nM.

Purity: 99.77%
Clinical Data: No Development Reported
Size: 10 mM × 1 mL, 1 mg, 5 mg, 10 mg, 25 mg, 50 mg, 100 mg

Cromolyn sodium (Disodium Cromoglycate; FPL-670) (Cat. No.: HY-B0320A)
Cromolyn sodium is an antiallergic drug. Cromolyn sodium is a GSK-3β inhibitor with an IC_{50} of 2.0 µM.

Purity: 99.97%
Clinical Data: Launched
Size: 10 mM × 1 mL, 1 g, 5 g

GSK 3 Inhibitor IX (6-Bromoindirubin-3’-oxime; BIO; MLS 2052) (Cat. No.: HY-10580)
GSK 3 Inhibitor IX (6-Bromoindirubin-3’-oxime; BIO) is a potent, selective, reversible and ATP-competitive inhibitor of GSK-3α/β and CDK1-cyclinB complex with IC_{50} of 5 nM/320 nM/80 nM for (GSK-3α/β)/CDK1/CDK5, respectively.

Purity: 99.66%
Clinical Data: No Development Reported
Size: 10 mM × 1 mL, 5 mg, 10 mg, 50 mg

GSK-3 inhibitor 1 (Cat. No.: HY-13973A)
GSK-3 inhibitor 1 is an inhibitor of GSK-3.

Purity: 99.89%
Clinical Data: No Development Reported
Size: 10 mM × 1 mL, 5 mg, 10 mg, 50 mg, 100 mg

IM-12 (Cat. No.: HY-12292)
IM-12 is an inhibitor of GSK-3β, with an IC_{50} of 53 nM, and also enhances Wnt signalling.

Purity: 96.45%
Clinical Data: No Development Reported
Size: 10 mM × 1 mL, 10 mg, 50 mg, 100 mg

Indirubin-3’-monoxime (Indirubin-3’-oxime) (Cat. No.: HY-19807)
Indirubin-3’-monoxime is a potent GSK-3β inhibitor, and weakly inhibits 5-Lipoxygenase, with IC_{50} of 22 nM and 7.8-10 µM, respectively. Indirubin-3’-monoxime also shows inhibitory activities against CDK5/p25 and CDK1/cyclin B, with IC_{50} of 100 and 180 nM.

Purity: 99.95%
Clinical Data: No Development Reported
Size: 10 mM × 1 mL, 5 mg, 10 mg, 50 mg
Indirubin-3'-monoxime-5-sulphonic acid
Cat. No.: HY-111931

Indirubin-3'-monoxime-5-sulphonic acid is a potent and selective inhibitor of CDK1, CDK5, and GSK-3β with IC₅₀ values of 5 nM, 7 nM, and 80 nM, respectively.

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

Indirubin-5-sulfonate
Cat. No.: HY-111932

Indirubin-5-sulfonate is a cyclin-dependent kinase (CDK) inhibitor, with IC₅₀ values of 55 nM, 35 nM, 150 nM, 300 nM and 65 nM for CDK1/cyclin B, CDK2/cyclin A, CDK2/cyclin E, CDK4/cyclin D1, and CDK5/p35, respectively. Indirubin-5-sulfonate also shows inhibitory activity against GSK-3β.

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

Kenpaullone
(CDk-1/cyclinB, CK-II, PKA, and PKC, with all IC₅₀ values of >100 μM.

Purity: 98.07%
Clinical Data: No Development Reported
Size: 10 mM × 1 mL, 5 mg, 10 mg, 50 mg, 100 mg

LY2090314
Cat. No.: HY-16294

LY2090314 is a potent inhibitor of glycogen synthase kinase-3 (GSK-3) with IC₅₀ values of 1.5 nM and 0.9 nM for GSK-3α and GSK-3β, respectively.

Purity: 99.75%
Clinical Data: Phase 2
Size: 10 mM × 1 mL, 10 mg, 50 mg, 100 mg

SB 216763
Cat. No.: HY-12012

SB 216763 is potent, selective and ATP-competitive GSK-3 inhibitor with IC₅₀ of 34.3 nM for both GSK-3α and GSK-3β.

Purity: 98.01%
Clinical Data: No Development Reported
Size: 5 mg, 10 mg, 50 mg, 100 mg

SB 415286
Cat. No.: HY-15438

SB 415286 is a potent and selective cell permeable inhibitor of GSK-3α, with an IC₅₀ of 77.5 nM, and a Kᵣ of 30.75 nM; SB 415286 is equally effective at inhibiting human GSK-3α and GSK-3β.

Purity: 99.88%
Clinical Data: No Development Reported
Size: 10 mM × 1 mL, 10 mg, 50 mg

TDZD-8
(GSK-3β Inhibitor I; NP 01139)
Cat. No.: HY-11012

TDZD-8 is an inhibitor of GSK-3β, with an IC₅₀ of 2 μM; TDZD-8 shows less potent activities against Cdk-1/cyclinB, CK-II, PKA, and PKC, with all IC₅₀ of >100 μM.

Purity: 98.74%
Clinical Data: No Development Reported
Size: 10 mM × 1 mL, 10 mg, 50 mg, 100 mg

Tideglusib
(NP031112)
Cat. No.: HY-14872

Tideglusib (NP031112) is an irreversible GSK-3 inhibitor with IC₅₀ values of 5 nM and 60 nM for GSK-3β<sup>WT</sup> (1 h preincubation) and GSK-3β<sup>C99A</sup> (1 h preincubation), respectively.

Purity: 99.81%
Clinical Data: Phase 2
Size: 10 mM × 1 mL, 10 mg, 50 mg, 100 mg
TWS119
Cat. No.: HY-10590

TWS119 is a specific inhibitor of GSK-3β, with an IC₅₀ of 30 nM, and activates the wnt/β-catenin pathway.

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

VP3.15
Cat. No.: HY-128879

VP3.15 is a potent, orally bioavailable and CNS-penetrant dual phosphodiesterase (PDE)7- glycogen synthase kinase (GSK)3 inhibitor, with IC₅₀'s of 1.59 μM and 0.88 μM for PDE7 and GSK-3, respectively.

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

VP3.15 dihydrobromide
Cat. No.: HY-128879A

VP3.15 dihydrobromide is a potent, orally bioavailable and CNS-penetrant dual phosphodiesterase (PDE)7- glycogen synthase kinase (GSK)3 inhibitor, with IC₅₀'s of 1.59 μM and 0.88 μM for PDE7 and GSK-3, respectively.

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