

Store at  
-20C  
#13621**SB216763**

5 mg



**Orders:** 877-616-CELL (2355)  
orders@cellsignal.com

**Support:** 877-678-TECH (8324)

**Web:** info@cellsignal.com  
cellsignal.com

3 Trask Lane | Danvers | Massachusetts | 01923 | USA

**For Research Use Only. Not for Use in Diagnostic Procedures.**

## Background

The maleimide derivative SB216763 is a potent and selective cell permeable inhibitor of glycogen synthase kinase 3 (GSK-3). Research studies using peptide-based protein kinase assays show that SB216763 inhibits GSK-3 $\alpha$  in an ATP competitive manner with an IC<sub>50</sub> of 34 nM, and is an equally effective GSK3- $\beta$  inhibitor. Similar assays demonstrate that SB216763 (at concentrations up to 10  $\mu$ M) does not inhibit as many as 24 other serine/threonine and tyrosine protein kinases (1). As a consequence of inhibiting GSK-3, SB216763 stimulates glycogen synthesis in human liver cells (EC<sub>50</sub> 3.6  $\mu$ M) via glycogen synthase activation and induces expression of a  $\beta$ -catenin regulated reporter gene in HEK293 cells (1). Furthermore, SB216763 induces accumulation of  $\beta$ -catenin, a key downstream effector in the Wnt signaling pathway, in many cell types (2-5). Additional research indicates that SB216763 can prevent neuronal cell death induced by PI3 kinase pathway inhibition (2). Glycogen synthase kinase 3 inhibitors such as SB216763 can be important research tools in studying the functional role of GSK-3 in cell signaling pathways.

## Molecular Formula

C<sub>19</sub>H<sub>12</sub>Cl<sub>2</sub>N<sub>2</sub>O<sub>2</sub>

## Molecular Weight

371.2 g/mol

## Purity

>98%

## CAS

280744-09-4

## Solubility

Soluble in DMSO at 24mg/ml.

## Storage

Store lyophilized or in solution at -20°C, desiccated. In lyophilized form, the chemical is stable for 24 months. Once in solution, use within 3 months to prevent loss of potency. Aliquot to avoid multiple freeze/thaw cycles.

## Directions for Use

SB216763 is supplied as a lyophilized powder. For a 25 mM stock, reconstitute the 5 mg in 538.8  $\mu$ l DMSO. Working concentrations and length of treatment can vary depending on the desired effect, but it is typically used at 5-25  $\mu$ M for 3-24 hr.

## Background References

1. Coghlan, M.P. et al. (2000) *Chem Biol* 7, 793-803.
2. Cross, D.A. et al. (2001) *J Neurochem* 77, 94-102.
3. Piazza, F. et al. (2010) *BMC Cancer* 10, 526.
4. Zhou, F. et al. (2011) *Mol Biol Cell* 22, 3533-40.
5. Gebhardt, R. et al. (2010) *J Cell Mol Med* 14, 1276-93.

## Trademarks and Patents

Cell Signaling Technology is a trademark of Cell Signaling Technology, Inc.

XP is a registered trademark of Cell Signaling Technology, Inc.

All other trademarks are the property of their respective owners. Visit [cellsignal.com/trademarks](http://cellsignal.com/trademarks) for more information.

## Limited Uses

Except as otherwise expressly agreed in a writing signed by a legally authorized representative of CST, the following terms apply to Products provided by CST, its affiliates or its distributors. Any Customer's terms and conditions that are in addition to, or different from, those contained herein, unless separately accepted in writing by a legally authorized representative of CST, are rejected and are of no force or effect.

Products are labeled with For Research Use Only or a similar labeling statement and have not been approved, cleared, or licensed by the FDA or other regulatory foreign or domestic entity, for any purpose. Customer shall not use any Product for any diagnostic or therapeutic purpose, or otherwise in any manner that conflicts with its labeling statement. Products sold or licensed by CST are provided for Customer as the end-user and solely for research and development uses. Any use of Product for diagnostic, prophylactic or therapeutic purposes, or any purchase of Product for resale (alone or as a component) or other commercial purpose, requires a separate license from CST. Customer shall (a) not

sell, license, loan, donate or otherwise transfer or make available any Product to any third party, whether alone or in combination with other materials, or use the Products to manufacture any commercial products, (b) not copy, modify, reverse engineer, decompile, disassemble or otherwise attempt to discover the underlying structure or technology of the Products, or use the Products for the purpose of developing any products or services that would compete with CST products or services, (c) not alter or remove from the Products any trademarks, trade names, logos, patent or copyright notices or markings, (d) use the Products solely in accordance with CST Product Terms of Sale and any applicable documentation, and (e) comply with any license, terms of service or similar agreement with respect to any third party products or services used by Customer in connection with the Products.