Revision 1

SB202190

#8158 Store at -20C

5 mg

Cell Signaling TECHNOLOGY®

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Background

SB202190, a pyridinyl imidazole, inhibits p38 MAP kinase activity through competition with ATP (1), and has been shown to induce apoptosis through activation of cysteine protease (CPP32)-like caspases (2). SB202190 blocks both lipopolysaccharide (LPS)-induced gene expression and nitric oxide (NO)-induced stabilization of interleukin (IL)-8 mRNA in monocytes (3,4). Pre-treatment of cells with SB202190 has been shown to inhibit phosphorylation of p38 MAPK despite exposure to anisomycin, a known inducer of the MAPK pathway (5). Of note, the mechanism of inhibition of SB202190 is unlike the one seen with SB203580, which inhibits p38 MAPK catalytic activity by binding to the ATP binding pocket, but does not inhibit phosphorylation of p38 MAPK by upstream kinases (6).

Molecular Formula

$C_{20}H_{14}FN_3O$

Molecular Weight

331.4 g/mol

Purity

>98%

CAS

152121-30-7

Solubility

Soluble in DMSO at 30mg/ml.

Storage

Store lyophilized or in solution at -20ºC, desiccated. Protect from light. 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

SB202190 is supplied as a lyophilized powder. For a 10 mM stock, reconstitute the 5 mg in 1.51 ml DMSO. Working concentrations and length of treatment can vary depending on the desired effect, but it is typically used as a pretreatment at 5-20 µM for 1-2 hours prior to treating with a stimulator. Soluble in DMSO, solubility in other solvents has not been evaluated.

Background References

1. Young, P.R. et al. (1997) *J Biol Chem* 272, 12116-21.
2. Nemoto, S. et al. (1998) *J Biol Chem* 273, 16415-20.
3. Manthey, C.L. et al. (1998) *J Leukoc Biol* 64, 409-17.
4. Ma, P. et al. (2004) *J Leukoc Biol* 76, 278-87.
5. Geiger, P.C. et al. (2005) *Am J Physiol Endocrinol Metab* 288, E782-8.
6. Kumar, S. et al. (1999) *Biochem Biophys Res Commun* 263, 825-31.

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