SB203580
p38 MAP Kinase Inhibitor
Catalog # tlrl-sb20
For research use only
Version # 15K04-MM

PRODUCT INFORMATION

Content:
• 5 mg SB203580

Storage and stability:
- SB203580 is provided as a translucent film and shipped at room temperature. Store at -20°C in the dark. Solid product is stable 1 year at -20°C.
- Upon resuspension, prepare aliquots of SB203580 and store at -20°C. Avoid freeze-thaw cycles. Protect from light. Resuspended product is stable 3 month at -20°C when properly stored.

Quality control:
- Purity: ≥98% (UHPLC)
- The absence of bacterial contamination (e.g. lipoproteins and endotoxins) has been confirmed using HEK-Blue™ TLR2 and HEK-Blue™ TLR4 cells.

DESCRIPTION

SB203580 is a pyridinyl imidazole inhibitor widely used to elucidate the roles of p38 mitogen-activated protein kinase (MAPK). It inhibits p38 catalytic activity by binding to the ATP binding pocket. SB203580 also inhibits the phosphorylation and activation of protein kinase B (PKB, also known as Akt). Both kinases are involved in a wide array of signaling pathways, including the TLR signaling pathway. Moreover, several studies suggest that p38 MAPKs regulate distinct phases of autophagy. p38 can elicit autophagy via Beclin1. Contrarily, p38 α has also been reported to inhibit autophagy by interfering with the trafficking of Atg9. SB203580 is generally used at low concentrations (1-10 μM), as it has been reported that at high concentrations SB203580 (> 20 μM) can induce the activation of the serine/threonine kinase Raf-1).

CHEMICAL PROPERTIES

Synonym: 4-(4’-Fluorophenyl)-2-(4’-methylsulfinylphenyl)-5-(4’-pyridyl)-imidazole
Formula: C6H16FN3OS
Molecular weight: 377.44
Solubility: DMSO (50 mg/ml)
Structure:

METHODS

Preparation of sterile stock solution (25 mM)
1. Add 530 μl DMSO to 5 mg of SB203580.
2. Vortex until complete solubilization.
3. Aliquot and store at -20°C.
4. Once SB203580 is solubilized, dilutions can be prepared using aqueous buffers.

Working concentration: 1-10 μM

PROTOCOLS

For reference only; as described in the indicated publications.

Cell Culture Assay¹
Cells: Mouse bone-marrow derived immature dendritic cells
Working concentration: 1-10 μM
Incubation time: 1-2 h
Methods: RT-PCR and Western blot

Cell Culture Assay⁵
Cells: Primary cardiac fibroblasts
Working concentration: 10 μM
Incubation time: 45 min
Methods: Western blot and assays to measure collagen synthesis

¹ Cuenda A. et al., 1995. SB 203580 is a specific inhibitor of a MAP kinase homologue which is stimulated by cellular stresses and interleukin-1. FEBS Lett. 364:229-233.
⁵ Mir SA. et al., 2012. Inhibition of signal transducer and activator of transcription 3 (STAT3) attenuates interleukin-6 (IL-6)-induced collagen synthesis and resultant hypertrophy in rat heart. J Biol Chem. 287(4):2666-77.

RELATED PRODUCTS

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