Miltenyi Biotec

StemMACS™ SB431542 in Solution

Order no. 130-106-543

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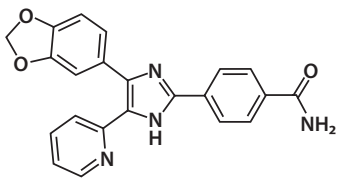
1. Description

Components	StemMACS™ SB431542 in Solution. A small molecule inhibitor of TGF-β signaling.
Size	5 mg in 1.3 mL
Product format	10 mM in DMSO, filtered (0.2 µm)
Molecular weight	384.39
CAS number	301836-41-9
Systematic name	4-[4-(1,3-benzodioxol-5-yl)-5-pyridin-2-yl-1*H*-imidazol-2-yl]benzamide
Molecular formula	$C_{22}H_{16}N_4O_3$
Structure	
Purity	>98%
Storage	Store aliquots at –20 °C protected from light. The aliquots are stable for 6 months from date of receipt when stored as directed.

1.1 Background information

StemMACS SB431542 in Solution is a potent inhibitor of the TGF-beta, Activin, and Nodal signaling pathway. SB431542 inhibits the activin receptor like kinases ALK4, ALK5, and ALK7 thereby preventing the phorphorylation of their downstream targets SMAD2 and SMAD3. The inhibition is selective and does not affect BMP signaling via the related kinases ALK1, ALK2, ALK3, and ALK6. In pluripotent stem cell research, SB431542 is used in combination with other small molecules to improve reprogramming and induce differentiation, e.g., into neural lineages.

2. Protocol

2.1 Preparation of aliquots

1. Before opening, briefly centrifuge the vial to ensure full recovery of sample.
2. Prepare appropriate aliquots and store at –20 °C. Avoid repeated freeze-thaw cycles.

2.2 Use in cell culture

1. Thaw aliquots at 37 °C as needed.
2. To avoid precipitation, prewarm the cell culture media prior to adding the reconstituted compound.

   ▲ **Note:** The DMSO concentration in culture should not exceed 0.5 %.

Refer to **www.miltenyibiotec.com** for all data sheets and protocols. Miltenyi Biotec provides technical support worldwide. Visit www.miltenyibiotec.com/local to find your nearest Miltenyi Biotec contact.

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