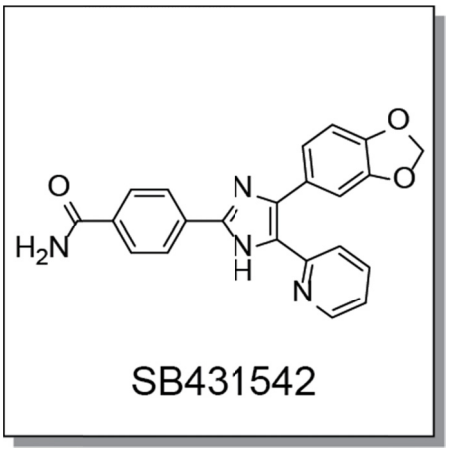
Product Specification Sheet

Product Name: SB431542

Catalog Number: C7243-5 (powder)
C7243-5s (10 mM in DMSO)

Package Size: 5 mg



Technical information:

Chemical Formula:	$C_{22}H_{16}N_4O_3$
CAS #:	301836-41-9
Molecular Weight:	384.39
Purity:	>98%
Formulation:	Off white solid
Solubility:	Soluble in DMSO up to 100 mM
Chemical Name:	4-(4-(benzo[d][1,3]dioxol-5-yl)-5-(pyridin-2-yl)-1H-imidazol-2-yl)benzamide
Storage:	Store solid powder at 4°C desiccated; Store DMSO solution at -20°C.

Handling:

- For C7243-5 (powder), add 1.30 mL of DMSO to make 10 mM solution.
- For C7243-5s, before open the vial, centrifuge the vial at 500rpm x 1 min in a 50 mL conical tube to ensure full recovery of sample.

Biological Activity:

SB-431542 is a selective and potent inhibitor of activin receptor-like kinase (ALK), the TGF-β type I receptor), specifically ALK4, ALK5 (IC_{50} = 94 nM) and ALK7. It has no effect on the other, more divergent ALK family members that recognize bone morphogenetic proteins (BMPs) such as ALK2, ALK3 or ALK6. It has also no effect on components of the ERK, JNK, or p38 MAP kinase pathways or on components of the signaling.

SB431542 specifically blocks Smad signaling and suppresses renewal in embryonic and induced pluripotent stem (iPS) cells and promotes differentiation. SB431542 could enhance reprogramming efficiency when using it with MEK inhibitor PD0325901.

Reference:

1. Tongxiang Lin, et al. A chemical platform for improved induction of human iPSCs. Nature Methods 6, 805 - 808 (2009).
2. Laping NJ, et al. Inhibition of transforming growth factor (TGF)-beta1-induced extracellular matrix with a novel inhibitor of the TGF-beta type I receptor kinase activity: SB-431542. Mol Pharmacol. 2002; 62(1):58-64.
3. Inman GJ, et al. SB-431542 is a potent and specific inhibitor of transforming growth factor-beta superfamily type I

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