

Product Name: SB 431542

Catalog No.: 1614

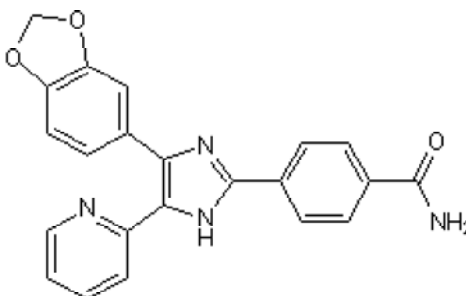
Batch No.: 16

CAS Number: 301836-41-9

IUPAC Name: 4-[4-(1,3-benzodioxol-5-yl)-5-(2-pyridinyl)-1H-imidazol-2-yl]benzamide

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: C₂₂H₁₆N₄O₃·2H₂O
Batch Molecular Weight: 420.42
Physical Appearance: Pale yellow solid
Solubility: ethanol to 10 mM
DMSO to 100 mM with gentle warming
Storage: Store at RT
Batch Molecular Structure:



2. ANALYTICAL DATA

TLC: R_f = 0.4 (Dichloromethane:Methanol:Ammonia soln. [90:9:1])
HPLC: Shows 99.4% purity
¹H NMR: Consistent with structure
Mass Spectrum: Consistent with structure
Microanalysis:

	Carbon	Hydrogen	Nitrogen
Theoretical	62.85	4.79	13.33
Found	62.75	4.77	13.36

Caution - Not Fully Tested • Research Use Only • Not For Human or Veterinary Use

Product Name: SB 431542

Catalog No.: 1614

Batch No.: 16

CAS Number: 301836-41-9

IUPAC Name: 4-[4-(1,3-benzodioxol-5-yl)-5-(2-pyridinyl)-1H-imidazol-2-yl]benzamide

Description:

Potent and selective inhibitor of the transforming growth factor- β (TGF- β) type I receptor/ALK5 (IC_{50} = 94 nM), and its relatives ALK4 and ALK7. Suppresses TGF- β -induced proliferation of human osteosarcoma cells. Replaces SOX2 in reprogramming of fibroblasts into iPSCs. Stimulates proliferation, differentiation and sheet formation of ESC-derived endothelial cells. Inhibits TGF- β -induced EMT, migration, invasion and VEGF secretion in several human cancer cell lines. SB 431542 synthesized to cGMP guidelines also available.

Physical and Chemical Properties:

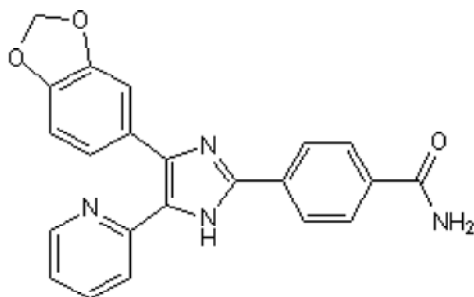
Batch Molecular Formula: $C_{22}H_{16}N_4O_3 \cdot 2H_2O$

Batch Molecular Weight: 420.42

Physical Appearance: Pale yellow solid

Minimum Purity: >99%

Batch Molecular Structure:



References:

Halder et al (2005) A specific inhibitor of TGF-beta receptor kinase, SB-431542, as a potent antitumor agent for human cancers. *Neoplasia* **7** 509. PMID: 15967103.

Matsuyama et al (2003) SB-431542 and Gle. inhibit transforming growth factor- β -induced proliferation of human osteosarcoma cells. *Cancer Res.* **63** 7791. PMID: 14633705.

Watabe et al (2003) TGF-beta receptor kinase inhibitor enhances growth and integrity of embryonic stem cell-derived endothelial cells. *J.Cell Biol.* **163** 163. PMID: 14676305.

Inman et al (2002) SB-431542 is a potent and specific inhibitor of transforming growth factor- β superfamily type I AVNreceptor-like kinase (ALK) receptors ALK4, ALK5, and ALK7. *Mol.Pharmacol.* **62** 65. PMID: 12065756.

Laping et al (2002) Inhibition of transforming growth factor (TGF)- β 1-induced extracellular matrix with a novel inhibitor of the TGF- β type I receptor kinase activity: SB-431542. *Mol.Pharmacol.* **62** 58. PMID: 12065755.

Storage: Store at RT

Solubility & Usage Info:

ethanol to 10 mM

DMSO to 100 mM with gentle warming

When purchased as a 1mg unit, this product is supplied as a lyophilized solid and may be very hard to visualize. Solutions should be made by adding solvent directly to the vial. The vial should then be vortexed vigorously to ensure the product has completely dissolved.

Stability and Solubility Advice:

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. Our standard recommendations are:

SOLIDS: Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

SOLUTIONS: We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

Caution - Not Fully Tested • Research Use Only • Not For Human or Veterinary Use

bio-techne.com

info@bio-techne.com

techsupport@bio-techne.com

North America

Tel: (800) 343 7475

China

info.cn@bio-techne.com

Tel: +86 (21) 52380373

Europe Middle East Africa

Tel: +44 (0)1235 529449

Rest of World

www.tocris.com/distributors

Tel:+1 612 379 2956