Technical Data Sheet

SB431542

Catalog Number: SM-0009-0010

Synonyms: SB-431542, SB 431542

Size: 10 mg

Description: SB431542 is a highly-potent and selective inhibitor of the TGF-β type I receptor, with specific inhibition of ALK5 (IC₅₀ of 94 nM) and its closest relatives ALK4 and ALK7 as part of the TGF-β/Activin/Nodal pathway. SB431542 has been shown to be a highly efficient additive for inducing neural differentiation of embryonic stem cells (ESCs) in a rapid manner when combined with Noggin (Chambers, et al.), or Noggin and LDN193189 (Cat. No. SM-0005-0010) (Edri, et al.), promoting the self-renewal of primitive neuroepithelia with hLIF and CHIR99021 (Cat. No. SM-0001-0010) (Li, et al. 2011), as well as the derivation of functional neurons from human pluripotent stem cells (PSCs) (Qi, et al.). Additionally, SB431542 allows for the enhanced differentiation of PSCs into cardiomyocytes (Kattman, et al.).

Molecular Weight: 384.39

Molecular Formula: C₂₂H₁₆N₄O₃

Chemical Name: Benzamide, 4-(4-(1,3-benzodioxol-5-yl)-5-(2-pyridinyl)-1H-imidazol-2-yl)-

CAS Number: 301836-41-9

Target: TGF-β Receptor

Appearance: Yellow to pink (Solid)

Purity: ≥95% by LCMS

Solubility and Reconstitution: Soluble in DMSO up to 50 mM and in ethanol up to 10 mM, for example:

10 mg/26.015 mL = 0.384 mg/mL = 1 mM
10 mg/5.203 mL = 1.922 mg/mL = 5 mM
10 mg/2.602 mL = 3.843 mg/mL = 10 mM
10 mg/0.520 mL = 19.231 mg/mL = 50 mM

Storage and Stability: Store at:

- Powder:
  - -20°C: 3 years
  - 4°C: 2 years

- In solvent:
  - -80°C: 6 months
  - -20°C: 1 month

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References


