Cell Guidance Systems Ltd, Babraham Research Park, Cambridge CB22 3AT, UK

Data Sheet

Research Use Only

Compound Name

SB431542

Alternative Names

4-[4-(1,3-Benzodioxol-5-yl)-5-(pyridin-2-yl)-1H-imidazol-2-yl]benzamide

Catalog Number

SM33

Activity

SB431542 is a potent and selective inhibitor of the transforming growth factor-β superfamily type 1 (TGF-β1) activin receptor-like kinase (ALK5) receptors, and its relatives ALK4 and ALK7. It does not affect the BMP receptors ALK2, ALK3, ALK6. SB431542 inhibits the TGF-β-mediated activation of SMAD proteins, expression of collagen and fibronectin, cell proliferation and cell motility. It does not inhibit kinases that are activated in response to serum or stress such as ERK, p38 or JNK.

Effect

SB431542 suppresses TGF-β-induced proliferation of human osteosarcoma cells. SB431542 treatment of glioma cultures inhibited proliferation, TGF-beta-mediated morphologic changes, and cellular motility. Small molecule inhibitors of TGF-beta receptors may offer a novel therapy for malignant gliomas by reducing cell proliferation, angiogenesis, and motility

Purity

>99%

CAS

301836-41-9

Formula

$C_{22}H_{16}N_4O_3$

Molecular Weight

384.39

Solubility

DMSO

Stability

Stable at -20°C. Keep away from direct sunlight.

References

1. Laping, NJ., et al. 2002. Mol Pharmacol. 62(1): 58-64. PMID: 12065755

2. Hjelmeland, MD., et al. 2004. Mol Cancer Ther. 3(6): 737-745. PMID: 15210860

3. Lei, Y. and Schaffer, DV. 2013. Proc Natl Acad Sci U S A. 110(52): E5039-5048. PMID: 24248365