



Data Sheet

Research Use Only

Compound Name

LDN193189

Catalog Number

SM23

Alternative Names

LDN-193189, LDN 193189, 4-[6-[4-(1-Piperazinyl)phenyl]pyrazolo[1,5-a]pyrimidin-3-yl]-quinoline dihydrochloride

Activity

LDN193189 is a highly potent small molecule inhibitor of bone morphogenetic protein (BMP) type I receptors ALK2 and ALK3. BMPs induce Smad1/5/8 plus non-Smad pathways, such as MAPK and Akt. BMP signaling pathway is the key regulator of cell fate decisions during embryogenesis and tissue homeostasis. It inhibits the activation of p38, ERK1/2 and Akt in C2C12 cells. LDN193189 only weakly inhibits ALK4, ALK5, and ALK7. LDN193189 affects not only the Smad but also the non-Smad signalling pathways induced by either BMP2, BMP6 or GDF5.

Effect

LDN193189 inhibits ectopic ossification and it is a potential agent in the treatment of NSCLC lung tumors, showing significant *in vivo* clinical utility. LDN193189 has been used to reduce ectopic ossification in a mouse model of *fibrodysplasia ossificans progressiva*.

Purity

>98%

CAS

1062368-24-4

Formula

C₂₅H₂₂N₆

Molecular Weight

406.48

Solubility

Water

Stability

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

References

1. Yu, PB., et al. 2008. Nat Med. 14(12): 1363-1369. PMID: 19029982
2. Yu, PB., et al. 2008. Nat Chem Biol. 4(1): 33-41. PMID: 18026094
3. Cuny, GD. 2008. Bioorg Med Chem Lett. 18(15): 4388-4392. PMID: 18621530
4. Heisenberg, CP. and Solnica-Krezel, L. 2008. Curr Opin Genet Dev. 18(4): 311-316. PMID: 18721878