

Product Data Sheet

Product Name: SAG hydrochloride

Cat. No.: GC37580

Chemical Properties

Cas. No. 2095432-58-7

SMILES O=C(C1=C(Cl)C2=CC=CC=C2S1)N([C@H]3CC[C@H](NC)CC3)CC4=CC=CC(C5=CC=NC=C5)=C4.Cl

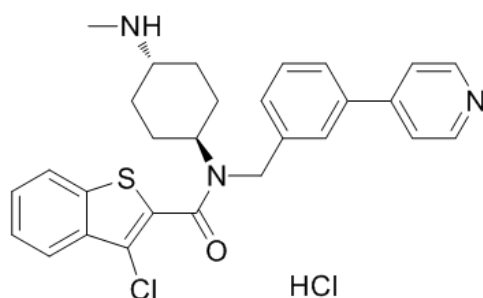
Formula C28H29Cl2N3OS M.Wt 526.52

Solubility H_2O : 25 mg/mL (47.48 mM; Need ultrasonic); DMSO : 21.67 mg/mL (41.16 mM; Need ultrasonic) Storage Store at -20°C

General tips For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.

Structure



Background

SAG (hydrochloride) is a potent Smo receptor agonist, and activates the Hedgehog signaling pathway, with a K_d of 59 nM. K_d : 59 nM (Smo)[1].

SAG (hydrochloride) acts downstream of Ptch1 in the Hh pathway and counteracts cyclopamine

Caution: Product has not been fully validated for medical applications. For research use only.

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inhibition of Smo. SAG induces firefly luciferase expression in Shh-LIGHT2 cells with an EC₅₀ of 3 nM and then inhibits expression at higher concentrations. In Smo-expressing Cos-1 cells, SAG yields an apparent dissociation constant (K_D) of 59 nM for the SAG/Smo complex[1]. SAG and purmorphamine override the inhibitory effect of robotnikinin since Smo functions downstream of Shh/Ptc1[2].

In CD-1 mice, SAG (1.0 mM) or NELL-1 (600 µg/ml) alone results in increased bone formation at 4 and 8 weeks, but significantly greater bone formation with both components combined (SAG + NELL-1). The combination of the two compounds exhibits a significant increase in new bone formation, accompanied by increased defect vascularization[3]. SAG (15, 17, or 20 mg/kg, i.p.) induces pre-axial polydactyly prevalently. The highest SAG dose is effective in ca. 80% of the embryos and increased Gli1 and Gli2 mRNA expression in the limb bud, with Gli1 mRNA being the most upregulated[4].

[1]. Chen JK, et al. Small molecule modulation of Smoothed activity. Proc Natl Acad Sci U S A. 2002 Oct 29;99(22):14071-6. [2]. Stanton BZ, et al. A small molecule that binds Hedgehog and blocks its signaling in human cells. Nat Chem Biol. 2009 Mar;5(3):154-6. [3]. Lee S, et al. Combining Smoothed Agonist (SAG) and NEL-like protein-1 (NELL-1) Enhances Bone Healing. Plast Reconstr Surg. 2017 Feb 13. [4]. Fish EW, et al. Preaxial polydactyly following early gestational exposure to the smoothed agonist, SAG, in C57BL/6J mice. Birth Defects Res A Clin Mol Teratol. 2016 Nov 1.

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