Product Data Sheet

Chemical Properties

Product Name: GDC-0449 (Vismodegib)

Cas No.: 879085-55-9

M.Wt: 421.3

Formula: C19H14Cl2N2O3S

Synonyms: Vismodegib, GDC-0449, HhAntag691, GDC0449, GDC 0449

Chemical Name: 2-chloro-N-(4-chloro-3-pyridin-2-ylphenyl)-4-methylsulfonylbenzamide

Canonical SMILES: CS(=O)(=O)C1=CC(=C(C=C1)C(=O)NC2=CC(=C(C=C2)Cl)C3=CC=CC=N3)Cl

Solubility: ≥21.1 mg/mL in DMSO, <2.2 mg/mL in H2O, ≥4.96 mg/mL in EtOH with ultrasonic and warming

Storage: Desiccate 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.

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

Biological Activity

Targets: Stem Cell

Pathways: Hedgehog

Description: GDC-0449 (2-chloro-N-[4-chloro-3-pyridin-2-yl-phenyl]-4-methane-sulfonyl benzamide), discovered by high throughput screening of a small molecule compound library followed by
subsequent optimization through medical chemistry, is a potent and selective inhibitor of hedgehog (Hh) signaling, a pathway regulating cell growth and differentiation associated in pathogenesis of several cancers. It binds to signaling by smoothened (SMO) and suppresses activation of downstream Hh target genes resulting in the inhibition of Hh signaling pathway. GDC-0449 exhibits anti-tumor activity in a mouse model of medulloblastoma as well as in primary human tumor cell xenograft models of colorectal cancer and pancreatic carcinoma and is currently being evaluated in research projects investigating refractory, locally advanced or metastatic solid tumors.

**Reference:**

**Protocol**

**Cell experiment:**

**Cell lines**
AsPC-1, MIA PaCa-2, PANC-1 and Pancreatic CSC cells

**Preparation method**
The solubility of this compound in DMSO is >10 mM. General tips for obtaining a higher concentration: Please warm the tube at 37 °C for 10 minutes and/or shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

**Reacting conditions**
10 μM, 72 hours

**Applications**
Inhibition of cell survival and induction of apoptosis was observed within 24 h following exposure to this drug, but was maximally noticed at 72 h. In all the cell lines, GDC-0449 induced apoptosis is a dose-dependent manner reaching up to 65%. By comparison, GDC-0449 was less effective in inducing apoptosis in CSCs.

**Animal experiment [3]:**

**Animal models**
Male CB17 SCID mice injected with MDA PCa 118b cells

**Dosage form**
Oral administration, 100 mg/kg, twice a day for 21 days

**Applications**
Shh, Gli1, Gli2, Smo, Ptch1, and Sufu were analyzed by qRT-PCR in GDC-0449 treated and untreated groups. Stromal expression of Gli1 and Ptch1 was marginally lower in the treated group compared to the control. Given that Gli1 and Ptch1 are reliable markers of an
active Hh pathway these results confirm the pharmacodynamic effect of GDC-0449. Expression of Gli2 and Shh followed the same trend. Tumor epithelial expression of Sufu was significantly lower in treated than in untreated controls. Immunohistochemical testing confirmed a decrease in Sufu expression in the tumor epithelium.

Other notes
Please test the solubility of all compounds indoor, and the actual solubility may slightly differ with the theoretical value. This is caused by an experimental system error and it is normal.

Reference:

Caution

FOR RESEARCH PURPOSES ONLY.

NOT FOR HUMAN, VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

Specific storage and handling information for each product is indicated on the product datasheet. Most ApexBio products are stable under the recommended conditions. Products are sometimes shipped at a temperature that differs from the recommended storage temperature. Short-term storage of many products are stable in the short-term at temperatures that differ from that required for long-term storage. We ensure that the product is shipped under conditions that will maintain the quality of the reagents. Upon receipt of the product, follow the storage recommendations on the product data sheet.