Product Data Sheet

Chemical Properties

Product Name: BMS-833923
Cas No.: 1059734-66-5
M.Wt: 473.57
Formula: C30H27N5O
Synonyms: BMS 833923; BMS833923; XL-139; XL 139
Chemical Name: N-[2-methyl-5-(methylaminomethyl)phenyl]-4-[(4-phenylquinazolin-2-yl)amino]benzamide
Canonical SMILES: CC1=C(C=C(C=C1)CNC)NC(=O)C2=CC=C(C=C2)NC3=NC4=CC=CC=C4C (=N3)C5=CC=CC=C5
Solubility: ≥ 47.4mg/mL in DMSO
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.
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: Smoothened
Description:

BMS-833923 is an orally bioavailable and selective antagonist of smoothened (SMO) with IC50 value of 5.8 nM in NIH3T3 cell line [1]. The Hedgehog (Hh) signaling is a critical pathway involved in embryonic development and in
tissue maintenance and repair in adults. It consists of the Hh ligands, the transmembrane receptors Patched 1 and 2, the G-protein- coupled receptor-like protein SMO and the glioma-associated oncogene transcription factors GLI1 to 3. The aberrant activation of Hh pathway, both mutational and epigenetic, is found to be associated with multiple aspects of tumorigenesis in various tumor cells. As a smoothened inhibitor, BMS-833923 can block the binding of cyclopamine (a naturally occurring SMO inhibitor) to SMO. It showed potent Hh pathway inhibitory activity with IC50 values at nanomolar in multiple cell-based assays. BMS-833923 also potently inhibited Hh pathway in medulloblastoma and pancreatic carcinoma xenograft models [1, 2 and 3].

In vitro, BMS-833923 inhibited the expression of GLI1 and PTCH1 in cell lines expressing wild-type SMO or activated mutant SMO with IC50 values in the range from 6 to 35 nM. In the FACS-based binding assays, it dose-dependently suppressed cyclopamine binding to SMO with IC50 value of 21 nM. In the esophageal adenocarcinoma cell lines OE19 and OE33, treatment of BMS-833923 significantly reduced cell proliferation with IC50 values of both 10 μM. Besides that, BMS-833923 was found to inhibit the growth of multiple myeloma cells and the proportion of ALDH+ cancer stem cells. It also inhibited the growth of many other tumor cells derived from patients with hematological malignancies including ALL, AML and CML [3 and 4].

In animal models with medulloblastoma and pancreatic carcinoma xenografts, administration of BMS-833923 at single oral dose showed robust inhibition of Hh pathway. In a rat model with gastroesophageal reflux disease, the administration of BMS-833923 at dose of 10 mg/kg/day resulted in the decreased development of both Barrett esophagus and esophageal adenocarcinoma by 35.7% [3 and 5].

Reference:

Protocol

Cell experiment:
Cell lines OE19 (JROECL19) and OE33 (JROECL33) esophageal adenocarcinoma (EAC) cell lines
Preparation method

The solubility of this compound in DMSO is >47.4mg/mL. 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

Applications

In OE19 and OE33 cells, BMS-833923 (10 μM) inhibited cell proliferation with the IC50 of 10 μM. BMS-833923 (25 μM) completely inhibited cell proliferation. In OE19 and OE33 cells, treatment with 10 μM BMS-833923 resulted in 82 and 73.4% apoptotic cells, respectively.

Animal experiment [3]:

Animal models

Medulloblastoma and pancreatic carcinoma xenografts mouse models, Male Sprague-Dawley rats with gastroesophageal reflux disease

Dosage form

Oral administration, 10 mg/kg

Applications

In medulloblastoma and pancreatic carcinoma xenografts animal models, administration of BMS-833923 at single oral dose showed robust inhibition of Hh pathway. In a rat model with gastroesophageal reflux disease, administration of BMS-833923 (10 mg/kg/day) resulted in the decreased development of both Barrett esophagus and esophageal adenocarcinoma by 35.7%.

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:


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.