Product Data Sheet

Chemical Properties

Product Name: AZD5363

Cas No.: 1143532-39-1

M.Wt: 428.92

Formula: C21H25ClN6O2

Synonyms: N/A

Chemical Name: 4-amino-N-[[1S]-1-(4-chlorophenyl)-3-hydroxypropyl]-1-(7H-pyrrolo[2,3-d]pyrimidin-4-yl)piperidine-4-carboxamide

Canonical SMILES: C1CN(CCC1(C(=O)NC(CCO)C2=CC=C(C=C2)Cl)N)C3=NC=NC4=C3C=CN

Solubility: \( \geq 21.45 \text{mg/mL in DMSO} \)

Storage: Store at \(-20^\circ C\)

General tips: For obtaining a higher solubility, please warm the tube at \(37^\circ C\) and shake it in the ultrasonic bath for a while. Stock solution can be stored below \(-20^\circ C\) 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: PI3K/Akt/mTOR Signaling

Pathways: Akt

Description: AZD5363 is a novel, potent phosphoinositide 3-kinase (PI3K)/Akt pathway inhibitor with IC50
AZD5363 is proved to inhibit castrate resistant prostate cancer (CRPC) progression. Clusterin (CLU) and autophagy will be induced which may work as cytoprotective responses which can affect the downstream PI3K/Akt signaling. [2] AZD5363 inhibits the growth of a lot of human tumor cells in a dose dependent manner. The mode of action could be monotherapy as well as in combination with HER2 inhibitors in breast cancer models. [3] It is suggested to induce cell apoptosis by measuring the expression of PARP cleavage, the activity of Caspase 3, et al. [1] Most importantly, AZD5363 can target the PI3K/Akt-pathway in vivo significantly, thus reducing the serum PSA-levels and tumor volume, finally, it could postpone the progression to CRPC.[1]

Reference:

Protocol

Cell experiment:

Cell lines GSK3 in BT474c (Her2þ PIK3CAmutant breast), LNCaP (PTEN-null prostate) and MDA-MB-468 (PTEN-null breast) cancer 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 pGSK3β (IC50: 0.76 μM in BT474c, 0.06 μM in LNCaP, 0.38 μM in MDA-MB-468)pPRAS40 (IC50: 0.31 μM in BT474c, 0.22 μM in LNCaP, 0.39 μM in MDA-MB-468)pFOXO3a translocation (IC50: 0.69 μM in BT474c)

Applications AZD5363 inhibited phosphorylation of AKT substrates with IC50 values of 0.06 to 0.76 μM in the 3 cell lines. AZD5363 also effectively inhibited phosphorylation of S6 and 4E-BP1 in BT474c cells and LNCaP cells.

Animal experiment [3]:


Animal models: Nude mice bearing BT474c xenografts

Dosage form: The treatment groups received 300 or 100 mg/kg acute dose of AZD5363 solubilized in a DMSO/Kleptose buffer, by oral gavage.

Applications: Oral dosing of AZD5363 to nude mice caused dose and time-dependent reduction of PRAS40, GSK3, and S6 phosphorylation. Following a 300 mg/kg dose of AZD5363, phosphorylation of all 3 biomarkers was significantly inhibited for at least 24 hours. 100 mg/kg dose of AZD5363 significantly inhibited phosphorylation of the 3 biomarkers was for at least 8 hours.

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:

Product Citations

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. Shortterm 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.