Product Data Sheet

Chemical Properties

Product Name: GDC-0623  
Cas No.: 1168091-68-6  
M.Wt: 456.21  
Formula: C16H14FIN4O3  
Chemical Name: 5-(2-fluoro-4-idoanilino)-N-(2-hydroxyethoxy)imidazo[1,5-a]pyridine-6-carboxamide  
Canonical SMILES: C1=CC(=CC(=C(=O)F)C)NC2=C(C=CC3=CN=CN32)C(=O)NOCCO  
Solubility: $\geq 16.85\text{mg/mL}$ 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: MAPK Signaling  
Pathways: MEK1/2  
Description: GDC-0623 is a potent and ATP-uncompetitive inhibitor of MEK1 with Ki value of 0.13nM [1]. GDC-0623 is an allosteric MEK inhibitor and has efficacy against both mutant BRAF and mutant KRAS. In the cell viability assays, GDC-0623 inhibits BRAF (V600E) and KRAS (G13D) with EC50 values of 7nM and 42nM, respectively in A375 cells and HCT116 cells. Besides that, GDC-0623 shows similar efficacy in the two genotypes in a panel of BRAF and KRAS-mutant cancer cell lines. GDC-0623 is found to prevent MEK phosphorylation in cells, resulting in more effective inhibition
of pERK. Furthermore, it is found that GDC-0623 blocks RAF activation through the effect on MEK. It induces dimerization of MEK with both BRAF and CRAF and stabilizes the RAF–MEK complex. In addition, GDC-0623 also suppresses RAF activation via inhibiting the formation of BRAF–CRAF heterodimer and the translocation of RAF in plasma membrane [1].

Reference:

Protocol

Cell experiment:

Cell lines: KRAS mutant HCT116 or SW620 cells

Preparation method: Soluble in DMSO. 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: GDC-0623 dose- and time-dependently up-regulated the pro-apoptotic BH3-only protein BIM in HCT116 cells or KRAS mutant HCT116 or SW620 cells. GDC-0623 inhibited cellular proliferation with EC50 values of 4 nM, 53 nM, 11 nM, 18 nM and 94 nM for A375 (BRAFV600E), HCT116 (KRASG13D), COLO 205, HT-29, and HCT116 cells, respectively.

Animal experiment [3]:

Animal models: Mice bearing A375, MiaPaCa-2, and HCT116 xenografts

Dosage form: 40 mg/kg, oral gavage (PO), by mouth once a day, for 20 days

Applications: GDC-0623 showed tumour growth inhibition of 120% and 115% in MiaPaCa-2 and HCT116 xenografts tumour models, respectively.

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. 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.