Product Data Sheet

Chemical Properties

Product Name: LY2157299
Cas No.: 700874-72-2
M.Wt.: 369.42
Formula: C22H19N5O
Synonyms: LY-2157299; LY 2157299
Chemical Name: 4-[2-(6-methylpyridin-2-yl)]-5,6-dihydro-4H-pyrrolo[1,2-b]pyrazol-3-yl]quinoline-6-carboxamide
Canonical SMILES: CC1=CC=CC(=N1)C2=NN3CCCCC3=C2C4=C5C=C(C=C(C=C(N=NC)(C4)C=O)N
Solubility: ≥18.45mg/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: TGF-β / Smad Signaling
Pathways: TGF-βR1(ALK5)
Description: LY2157299 is a potent small-molecule antagonist that specifically inhibits Transforming Growth Factor-β receptor I (TβRI). LY2157299 is now under phase II clinical evaluation of its anti-carcinoma activity against hepatocellular carcinoma and glioblastoma. LY2157299 has been shown to inhibit β1-integrin activation and block the invasion and migration of hepatocellular cancer cells. In addition, multiple studies have revealed LY2157299 blocked the
CTGF production and inhibited neoangiogenesis resulting suppression of hepatocellular carcinoma growth1. LY2157299 has been reported to decrease phosphorylated Smad2 and Smad3 expression and inhibit the tumor growth in both human anaplastic carcinoma lung cell (Calu6) or human carcinoma breast cell (MX1) xenografted nude mice2.

Reference:

Protocol

Cell experiment:

<table>
<thead>
<tr>
<th>Cell lines</th>
<th>HLE and HLF cells</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparation method</td>
<td>The solubility of this compound in DMSO is &gt;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.</td>
</tr>
<tr>
<td>Reacting conditions</td>
<td>100 nM, 16 hours</td>
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<tr>
<td>Applications</td>
<td>HLE and HLF cells were allowed to migrate for 16 hours on fibronectin, vitronectin, laminin-5 and fibrinogen in the presence of increasing concentrations (1 nM, 10 nM and 100 nM) of LY2157299. LY2157299 significantly inhibited HLE and HLF migration on different ECM substrates. When testing the inhibition of Smad phosphorylation, two different HCC cell lines were pretreated for 16 hours with 100 nM of LY2157299 and then stimulated with 2 ng of TGF-β1 for 30 min. LY2157299 inhibited de novo phosphorylation of p-SMAD2 at the same efficiency in HLE and HLF after stimulation with TGF-β1. Besides that, increased expression of E-cadherin was observed in HLE and HLF cells after treatment for 48 hours.</td>
</tr>
</tbody>
</table>

Animal experiment [3]:

<table>
<thead>
<tr>
<th>Animal models</th>
<th>Nude mice implanted with Calu6 or MX1 cells</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dosage form</td>
<td>Oral administration, 75mg/kg, twice a day</td>
</tr>
</tbody>
</table>
Applications

LY2157299 induced a 70% decrease in phosphorylated Smad (pSmad) for both types of cell lines. The time at which pSmad recovered 80% of baseline was approximately 6 h after administration.

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. 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.