Product Data Sheet

Chemical Properties

Product Name: Tie2 kinase inhibitor
Cas No.: 948557-43-5
M.Wt: 439.53
Formula: C26H21N3O2S
Synonyms: N/A
Chemical Name: (S)-4-(4-(6-methoxynaphthalen-2-yl)-2-(4-(methylsulfinyl)phenyl)-1H-imidazol-5-yl)pyridine
Canonical SMILES: O=[S@@](C)C1=CC=C(C=C1)C2=NC(C3=CC=C4(C(C=CC(OC)=C4)=C3)=C(C5=CC=NC=C5)N2
Solubility: ≥22mg/mL in DMSO, <2.73 mg/mL in EtOH, <2.45 mg/mL in H2O
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: Tyrosine Kinase
Pathways: Tie-2
Description:
IC50: A reversible and selective inhibitor of Tie2 with IC50 of 0.25 M, whose selectivity is 200-fold higher than that of p38.
Genetic studies have identified the crucial roles of Tie receptors (Tie1 & Tie2) in the development and function of endothelial tissues, including promoting the survival, maturation and functional integrity of the vasculature. Tie2 kinase inhibitor is suggested to block vascular construction via
suppressing Tie2, and in this way it is expected to disrupt tumor growth and angiogenesis. [1]

In vitro: Tie2 kinase inhibitor exhibited significant inhibitory effect on Tie2 auto-phosphorylation and disrupted its downstream signal transduction in a dose dependent manner in human aortic endothelial cells. In addition, Tie2 kinase inhibitor exhibits moderately suppressed the activity of Tie2 tyrosine kinase in HEL cells with IC50 of 232 nM. [2, 3]

In vivo: Matrigel mouse model of angiogenesis was adopted for in vivo study. Tie2 kinase inhibitor at doses of 25 and 50 mg/kg (i.p., b.i.d) reduced 41% and 70% of angiogenesis, respectively. In a MOPC-315 plasmacytoma xenograft model, Tie2 kinase inhibitor modestly suppressed tumor growth in nude mice in a dose-dependent manner. [4]

Clinical trial: A phase I study was conducted in patients with low or intermediate-1 International Prognostic Scoring System risk MDS to evaluate safety, pharmacokinetics (PK), pharmacodynamics (PD), and preliminary responses of Tie2 kinase inhibitor. It was noticed that this kind of compounds could be well tolerated and has sufficient activity. 1,200 mg once daily was a recommended dose for further study. [5]

Reference:

Protocol

Cell experiment:

Cell lines
HEL 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
232 nM

Applications
In HEL cells, Tie2 Kinase Inhibitor moderately suppressed the activity of Tie2 tyrosine kinase, with an IC50 value of 232 nM.
Animal experiment [3]:

Animal models: Mouse model of angiogenesis

Dosage form: 25 or 50 mg/kg; i.p.; b.i.d.

Applications: In a mouse model of angiogenesis, Tie2 Kinase Inhibitor, at doses of 25 or 50 mg/kg (i.p., b.i.d.), reduced 41% and 70% of angiogenesis, 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. 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.