Product Data Sheet

Chemical Properties

Product Name: IPA-3
Cas No.: 42521-82-4
M.Wt: 350.45
Formula: C20H14O2S2
Synonyms: N/A

Chemical Name: 1-[(2-hydroxynaphthalen-1-yl)disulfanyl]naphthalen-2-ol
Canonical SMILES: C1=CC=C2C(=C1)C=CC(=C2SSS=C(C=CC4=CC=CC=CC43)O)O
Solubility: ≥ 16.1mg/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: Cell Cycle/Checkpoint
Pathways: PAK1

Description:

IPA-3 is an autoregulatory domain inhibitor of p21-activated kinase (Pak) with IC50 value of 2.5μM [1]. IPA-3 is a highly selective and non-ATP-competitive inhibitor that targets the autoregulatory mechanism of group I Paks. IPA-3 is screened out as an inhibitor of Pak1 by measuring ATP hydrolysis. In the in vitro assays, IPA-3 inhibits Pak1 autophosphorylation stimulated by Cdc42 or sphingosine. It shows an IC50 value of 2.5μM in the kinase assay. This inhibition of Pak1 is
reported to be noncompetitive with ATP. Besides that, IPA-3 is found to remarkably inhibit the kinase activity of other group I Pak members, Pak2 and 3 at concentration of 10μM. Furthermore, 30μM IPA-3 can prevent both basal and PDGF-stimulated Pak activities in mouse embryonic fibroblasts [1].

*Reference:*

### Protocol

#### Cell experiment:
- **Cell lines**: Mouse embryonic fibroblasts
- **Preparation method**: The solubility of this compound in DMSO is >16.1mg/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**: IPA-3 selectively inhibits Pak1 activation in mammalian cells, and can inhibit activation of Group I Paks in cells.

#### Animal experiment [3]:
- **Animal models**: CD-1 mice
- **Dosage form**: 3.5 mg/kg, i.p.
- **Applications**: Inhibition of PAK1 by IPA-3 promoted recovery of neurological function, possibly by downregulating the expression of MMP-2, MMP-9, TNF-α, and IL-1β. IPA-3 may be a potential therapeutic drug for spinal cord injury.
- **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.

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