### Chemical Properties

**Product Name:** Entrectinib  
**Cas No.:** 1108743-60-7  
**M.Wt:** 560.64  
**Formula:** C₃₁H₃₄F₂N₆O₂

**Chemical Name:** (Z)-N-(5-(3,5-difluorobenzyl)-1H-indazol-3(2H)-ylidene)-4-(4-methylpiperazin-1-yl)-2-((tetrahydro-2H-pyran-4-yl)amino)benzamide

**Canonical SMILES:** CN1CCN(C2=CC(NC3CCOCC3)=C(C1/N=C4C5=C(NN/4)C=CC(CC6=CC(F)=CC(F)=C6)=C5)=O)C=C2)CC1

**Solubility:** $\geq 28.05$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:** Tyrosine Kinase  
**Pathways:** ALK

**Description:**

The receptor tyrosine kinases (RTKs) play a critical role, controlling cell proliferation, survival, and differentiation of normal cells. The anaplastic lymphoma kinase (ALK), a transmembrane RTK, originally identified in the nucleophosmin (NPM)–ALK chimera of anaplastic large cell lymphoma, has emerged as a novel tumorigenic player in several human cancers. Entrectinib is an orally available small-molecule inhibitor of ALK kinase activity.
In vitro: Entrectinib potently and selectively inhibits the in vitro growth of ALK-driven tumors, with confirmed mechanism of action [1].

In vivo: Since Entrectinib is able to pass the blood-brain barrier, the compound was also tested for efficacy in an xenograft model with ALK positive NSCLC tumors. MRI imaging demonstrated that Entrectinib was able to effectively and control the growth of these intracranial tumors dose-dependently, leading to increased survival [1].

Clinical trial: Entrectinib is an orally available small-molecule inhibitor of ALK kinase activity that is being evaluated in phase I/II clinical study to treat solid cancer

Reference:

Protocol

Cell experiment:

Cell lines SH-SY5Y cells stably transfected with TrkB

Preparation method The solubility of this compound in DMSO is > 28.1 mg/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

Applications In SY5Y-TrkB cells, Entrectinib inhibited Trk phosphorylation in a dose-dependent manner. At the dose as low as 1 nM, Entrectinib significantly inhibited Trk phosphorylation, and complete inhibition was achieved at the concentration of 10 nM or higher concentrations. Meanwhile, Entrectinib showed no effect on the Trk-null parental SH-SY5Y cells.

Animal experiment [3]:

Animal models Nu/nu mice bearing SY5Y-TrkB cells

Dosage form 60 mg/kg; p.o.; b.i.d., 7 days/week

Applications Entrectinib significantly inhibited tumor growth and prolonged EFS. Analyses of the tumors collected at different time points after
treatment (1, 4 and 6 hrs, respectively) indicated inhibition of TrkB phosphorylation in mice treated with Entrectinib. Moreover, phosphorylation of p-PLCγ, p-Akt and p-Erk was also inhibited in Entrectinib-treated mice. In addition, Western blot results also indicated that phosphoprotein expression was significantly suppressed in xenografts upon Entrectinib treatment.

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.