**Product Data Sheet**

### Chemical Properties

**Product Name:** Panobinostat (LBH589)

**Cas No.:** 404950-80-7  
**M.Wt:** 349.43  
**Formula:** C21H23N3O2  
**Synonyms:** Panobinostat, LBH589, LBH-589, Faridak, NVP-LBH589,  
**Chemical Name:** (E)-N-hydroxy-3-[4-[[2-(2-methyl-1H-indol-3-yl)ethylamino]methyl]phenyl]prop-2-enamide  
**Canonical SMILES:** CC1=C(C2=CC=CC=C2N1)CCNCC3=CC=C(C=C3)C=CC(=O)NO  
**Solubility:** >17.5mg/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:** HDAC  
**Pathways:** DNA Damage/DNA Repair >> HDAC  
**Description:**

Panobinostat, as known as LBH589, is a novel and potent hydroxamic acid-based deacetylase inhibitor (DACis) that inhibits a broad spectrum of histone deacetylases (HDACs), including all Classes 1, 2 and 4 HDAC enzymes, at low nanomolar concentrations. According to previous studies, it not only induces apoptosis in multiple myeloma (MM) cells via caspase activation and poly(ADP-ribose) polymerase (PARP) cleavage, but also induces potent cell growth inhibition, cell-cycle arrest, and apoptosis in a time- and dose-dependent manner in both Philadelphia...
chromosome-negative (Ph-) acute lymphoblastic leukemia (ALL) cells lines (T-cell MOLT-4 and pre-B-cell Reh), which are correlated with induction of histone (H3K9 and H4K8) hyperacetylation, activation of p21 and p27, and suppression of c-Myc.

Reference:

Protocol

Cell experiment:

Cell lines
MCF-7aro, LTEDaro, Exe-R, Let-R, Ana-R cell lines

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
6d; 20 Nm

Applications
To study cellular response to AIs and the mechanisms of acquired AI resistance, we used the previously generated AI-responsive cell line MCF-7aro and AI-resistant variants of MCF-7aro created following in vitro selection against each AI (i.e., Exe-R, Let-R, and Ana-R) or long-term culture in the absence of estrogen (i.e., LTEDaro). MCF-7aro, LTEDaro and three AI-resistant cell lines were exposed to increasing concentrations of LBH589. This drug-inhibited proliferation of all cell lines in a dose-dependent manner.

Animal experiment [3]:

Animal models
Female, 6- to 7-week-old ovariectomized, BALB/c Nu–Nu athymic mice
Dosage form: 20 mg/kg, three times per week, intraperitoneal injection

Applications: To evaluate the inhibitory effects of LBH589 on AI resistance in vivo, we used the exemestane-resistant MCF7aro xenograft model. LBH589 treatment significantly inhibited the growth of exemestane-resistant tumors; tumor weight at the end of experiment was significantly lesser in mice treated with LBH589 than in control mice. No mice in the LBH589 treatment groups showed significant body weight loss indicating that the LBH589 treatment was well tolerated. Consistent with the effect of LBH589 on gross characteristics of the tumors, proliferation (assessed by Ki-67 staining) of tumor cells was significantly decreased in LBH589-treated mice and apoptosis (assessed by staining for cleaved PARP) of tumor cells was significantly increased.

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


Product Validation

ChIP analysis of the binding of C/EBPδ to aromatase in the presence of Panobinostat
Treatment of HDAC inhibitor Panobinostat

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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