**Product Data Sheet**

### Chemical Properties

**Product Name:** Nutlin-3a chiral  
**Cas No.:** 675576-98-4  
**M.Wt:** 581.49  
**Formula:** C30H30Cl2N4O4  
**Synonyms:** Nutlin-3a; Nutlin 3a  
**Chemical Name:** 4-[(4S,5R)-4,5-bis(4-chlorophenyl)-2-(4-methoxy-2-propan-2-yloxyphenyl)-4,5-dihydroimidazole-1-carbonyl]piperazin-2-one  
**Canonical SMILES:** CC(C)OC1=C(C=CC(=C1)OC)C2=NC(N2C(=O)N3CCNC(=O)C3)C4=CC=C(C=C4)Cl)C5=CC=C(C=C5)Cl  
**Solubility:** ≥29.0745mg/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:** Apoptosis  
**Pathways:** p53  
**Description:** Nutlin-3 is a small-molecule inhibitor of MDM2 (mouse double minute 2) with IC50 value of 0.09μM [1]. Nutlin-3 binds MDM2 in the TP53-binding pocket, thereby interfering with MDM2-directed TP53 degradation. This has been shown to cause cell cycle arrest, growth inhibition and apoptosis in both solid tumors and lymphoid neoplasms. In mantle cell lymphoma (MCL), it is reported that...
Nutlin-3 can inhibit cell growth and activate apoptosis in both wt-TP53 (IC50 of 1 to 10μM) and mt-TP53 (IC50 of 22.5μM) cells [2]. Nutlin-3 can also effect cell cycle in gastric cancer cell lines. It induces G1 arrest in MKN-45 and SNU-1 cell lines. In vitro assay shows Nutlin-3 can enhance the antitumoreffects of conventional chemotherapeutic agents in several gastric cancer cell lines. And in in vivo assay, Nutlin-3 significantly inhibits the growth of xenograft tumors [3].

Reference:

Protocol

Cell experiment:

Cell lines HCT116 and SW480 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 1, 2, 4, 8 and 16 μM; 8 hrs

Applications Nutlin-3a increased the cellular levels of p53, MDM2 and p21Waf1/Cip1 in HCT116 cells whilst SW480 cells exposed to the same conditions showed high basal levels of p53 but no detectable MDM2 or p21.

Animal experiment [3]:

Animal models Nude mice bearing subcutaneous human cancer xenografts (SJSA-1)

Dosage form 200 mg/kg; p.o.; b.i.d., for 20 days

Applications Nutlin-3a inhibited tumor growth by 90%. The mice did not lose significant weight and did not show any gross abnormalities upon necropsy at the end of the treatment.
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. Shortterm 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.