Product Data Sheet

Chemical Properties

Product Name: 3-Methyladenine

Cas No.: 5142-23-4

M.Wt: 149.15

Formula: C6H7N5

Synonyms: 3-MA

Chemical Name: 3-methylpurin-6-amine

Canonical SMILES: CN1C=NC(=C2C1=NC=N2)N

Solubility: >7.5mg/mL in DMSO, 5mg/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: Autophagy

Pathways: Ubiquitination/Proteasome >> Autophagy

Description:

3-Methyladenine is an inhibitor of class III phosphoinositide 3-kinase (PI3K) [1]. 3-Methyladenine is widely used as an autophagy inhibitor through inhibiting class III PI3K without significantly affecting protein synthesis or ATP levels. 3-Methyladenine also inhibits class I PI3K. It is found that 3-Methyladenine has different effects on class I and class III PI3K. It blocks class I PI3K persistently while inhibits class III PI3K transiently. As an inhibitor of autophagy, 3-Methyladenine is usually used to study the role of autophagy. In addition, 3-Methyladenine is also found to have anti-cancer efficacy. It induces cell death of tumor under nutrient-starved conditions. In HT1080 cells, 3-Methyladenine significantly inhibits cell migration through reducing...
membrane ruffle and lamellipodia formation in normal culture condition. It also inhibits the invasion of HT1080 cells [1, 2].

**Reference:**


**Product Citations**


**Product Validation**

In Western blot assay, we test whether Wortmannin and 3-Me could inhibit the effect of autophagy in 3T3 cells. The 1mM of inhibitors can suppress the cell survival of 3T3 cells. Due to the death of cell at the high concentration of Wortmannin and 3-Me, they are not fit to test in Western blot assay. The result has been shown that the low concentration of Wortmannin and 3-Me (1μM) significantly enhanced the P62 and inhibited the level of autophagy in 3T3 cells.

Method: Western blot; Cell Lines: 3T3 cell lines; Concentrations: 1 μM ~ 1mM; Incubation Time: 24 h.

Hypoxia induces autophagy activation and upregulates IL6 in human glioma cells. Western blot analysis showing that 3-methyladenine (3-MA) inhibited autophagy in U251 cells and treatment of normoxic and hypoxic cells with bafilomycin (BAF) blocked autophagic flux. Autophagy, 10 May 2016.

**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.