Web: www.taiclone.com
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Valproic acid

Catalog No: tcsc1765

Available Sizes

Size: 1g

Size: 5g

Specifications

CAS No:
99-66-1

Formula:
$C_8H_{16}O_2$

Pathway:
Autophagy;Epigenetics;Cell Cycle/DNA Damage;Autophagy

Target:
Autophagy;HDAC;HDAC;Mitophagy

Purity / Grade:
>98%

Solubility:
DMSO : ≥ 160 mg/mL (1109.49 mM); H2O : 1 mg/mL (6.93 mM; Need ultrasonic and warming)

Alternative Names:
VPA;2-Propylpentanoic Acid

Observed Molecular Weight:
144.21

Product Description

Valproic acid is an **HDAC** inhibitor, with **IC_{50}** in the range of 0.5 and 2 mM, also inhibits **HDAC1** (**IC_{50}**, 400 μM), and induces proteasomal degradation of **HDAC2**; Valproic acid sodium salt is used in the treatment of epilepsy, bipolar disorder and prevention

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of migraine headaches.

IC50 & Target: IC_{50}: 400 μM (HDAC1), 0.5-2 mM (HDAC)[5]

HDAC2[6]

In Vitro: Valproic acid inhibits the growth dose- and time-dependently with an IC_{50} of appr 10 and 4 mM at 24 and 72 h, respectively. Valproic acid significantly attenuates the activities of total, cytosol and nuclear HDACs. Valproic acid increases the form of acetylated histone 3 in HeLa cells. Valproic acid (1-3 mM) induces a G1 phase arrest, while 10 mM Valproic acid significantly induces a G2/M phase arrest of cell cycle in HeLa cells. In addition, Valproic acid increases the percentage of sub-G1 cells in HeLa cells in a dose-dependent manner at 24 h[1]. Valproic acid inhibits the mRNA and protein expression of VEGF, VEGFR2 and bFGF. Valproic acid inhibits the protein expression of HDAC1, increases histone H3 acetylation, and enhances the accumulation of hyperacetylated histone H3 on VEGF promoters[2]. Valproic acid treatment results in increased levels of phosphorylated AMPK/ACC in primary mouse hepatocytes. Phosphorylation of ACC following Valproic acid treatment is AMPK-dependent. Valproic acid inhibits the deacetylase activity of both mouse liver nuclear extracts and human recombinant HDAC1 while of the metabolites of Valproic acid, only 2-ene-Valproic acid and 4-ene-Valproic acid diminish deacetylase activity[4].

In Vivo: Valproic acid (500 mg/kg, i.p.) inhibits the tumor growth and angiogenesisin the mice transplanted with Kasumi-1 cells. The IR rate in the Valproic acid group is 57.25% at the end of the experiment[2]. Valproic acid (350 mg/kg, i.p.) demonstrates more social investigation and play fighting than control animals[3].