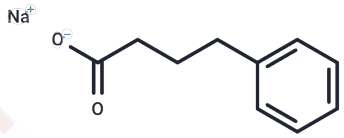
Data Sheet (Cat.No.T1535)

TargetMol

Sodium 4-phenylbutyrate

Chemical Properties



CAS No. : 1716-12-7

Formula: C10H11NaO2

Molecular Weight: 186.18

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Sodium 4-phenylbutyrate (TriButyrate), a transcriptional regulator, reversibly inhibits class I and II histone deacetylases (HDACs)resulting in a global increase in gene expression, decreased cellular proliferation, increased cell differentiation, and the induction of apoptosis in susceptible tumor cell populations.
Targets(IC50)	Apoptosis,HDAC,Autophagy
In vitro	In G93A transgenic ALS mice, Phenylbutyrate improves clinical symptoms and increases survival. It induces the expression of NF-κB p50 in G93A mice, while reducing the expression of cytochrome c and caspases. Additionally, in transgenic mouse models of Huntington's disease (HD), Phenylbutyrate elevates brain protein acetylation levels and reduces histone methylation levels.
In vivo	In prostate cancer cells, Phenylbutyrate induces apoptosis by diminishing the expression levels of the cell apoptosis antagonist Bcl-X(L), the double-strand break repair protein DNA-dependent protein kinase, the prostate progression marker Caveolin-1, and the angiogenesis promoter Vascular Endothelial Growth Factor, thereby weakening their activity.

Solubility Information

Solubility	H2O: 33.33 mg/mL (179.02 mM),Sonication is recommended. DMSO: 33.33 mg/mL (179.02 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+90% Saline: 3.33 mg/mL (17.89 mM),Solution. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	5.3711 mL	26.8557 mL	53.7115 mL
5 mM	1.0742 mL	5.3711 mL	10.7423 mL
10 mM	0.5371 mL	2.6856 mL	5.3711 mL
50 mM	0.1074 mL	0.5371 mL	1.0742 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Gardian G, et al. Neuromolecular Med,2004, 5(3), 235-241.
Bai G, Wang H, Cui N. mTOR pathway mediates endoplasmic reticulum stress-induced CD4+ T cell apoptosis in septic mice. Apoptosis. 2022: 1-11
Goh M, et al. Neoplasia,2001, 3(4), 331-338.
Ryu H, et al. J Neurochem,2005, 93(5), 1087-1098.
Gardian G, et al. J Biol Chem,2005, 280(1), 556-563.