Data Sheet (Cat.No.T1393)

TargetMol

Sodium butanoate

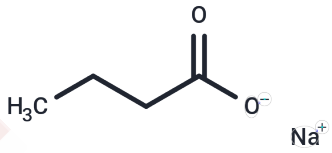
Chemical Properties

CAS No. : 156-54-7

Formula: C4H7NaO2

Molecular Weight: 110.09

Storage: Keep away from moisture
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 butanoate (Sodium Butyrate) is the sodium salt of butyrate with potential antineoplastic activity. Butyrate, a short chain fatty acid, competitively binds to the zinc sites of class I and II histone deacetylases (HDACs).
Targets(IC50)	Apoptosis,Endogenous Metabolite,HDAC,Autophagy,Histamine Receptor
In vitro	Sodium butyrate enhances the acetylation of histones and specific protein-1 while concurrently inhibiting the neurotoxicity induced by 3-nitropropionic acid. In the R6/2 transgenic mouse model of Huntington's disease, sodium butyrate effectively delays the onset of symptoms and prolongs the survival period.
In vivo	Sodium butyrate exhibits anti-inflammatory and anticancer effects in the colonic mucosa, reducing oxidative stress and thus inhibiting the growth of colon cancer cells. It also induces apoptosis in the RG/C2 and AA/Cl adenoma cell lines.
Cell Research	Cells are seeded at a density of 2,000 cells/well in 96-well plates with 200 μL culture medium containing Sodium Butyrate at different concentrations. Then, the cells are consecutively cultured for 72 h. Every 24 h, 20 μL 5 mg/mL MTT solution is added into the corresponding well, and the cells are cultured for another 4 h. Then, the solution is replaced with 150 μL dimethylsulfoxide, followed by gentle agitation of the plates for 15 min at room temperature. Finally, the absorbance at 492 nm is measured to represent the cell viability.

Solubility Information

Solubility	DMSO: 1.11 mg/mL (10.08 mM),Sonication is recommended. H2O: 250 mg/mL (2270.87 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	9.0835 mL	45.4174 mL	90.8348 mL
5 mM	1.8167 mL	9.0835 mL	18.167 mL
10 mM	0.9083 mL	4.5417 mL	9.0835 mL
50 mM	0.1817 mL	0.9083 mL	1.8167 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

Huang W, et al. Inhibition of store-operated Ca2+ entry counteracts the apoptosis of nasopharyngeal carcinoma cells induced by sodium butyrate. Oncol Lett. 2017 Feb;13(2):921-929.
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Ferrante RJ, et al. Histone deacetylase inhibition by sodium butyrate chemotherapy ameliorates the neurodegenerative phenotype in Huntington's disease mice. J Neurosci. 2003 Oct 15;23(28):9418-27.
Davie JR, et al. J Nutr, 2003, 133(7 Suppl), 2485S-2493S.
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Jung HY, et al. Sirtuin-2 inhibition affects hippocampal functions and sodium butyrate ameliorates the reduction in novel object memory, cell proliferation, and neuroblast differentiation. Lab Anim Res. 2016 Dec;32(4):224-230
Huang W, et al. Inhibition of store-operated Ca2+ entry counteracts the apoptosis of nasopharyngeal carcinoma cells induced by sodium butyrate. Oncol Lett. 2017 Feb;13(2):921-929
Wang P, et al. Sodium butyrate triggers a functional elongation of microglial process via Akt-small RhoGTPase activation and HDACs inhibition. Neurobiol Dis. 2017 Dec 14;111:12-25.
Jaworska J, et al. The potential neuroprotective role of a histone deacetylase inhibitor, sodium butyrate, after neonatal hypoxia-ischemia. J Neuroinflammation. 2017 Feb 10;14(1):34