



Product Information

Sodium butyrate

Product Number **B5887**

Store at Room Temperature

Product Description

Molecular Formula: $C_4H_7NaO_2$

Molecular Weight: 110.1

CAS Number: 156-54-7

pK_a : 4.82¹

Synonyms: butanoic acid sodium salt, butyric acid sodium salt, sodium n-butyrate

Sodium butyrate is the sodium salt of the short-chain fatty acid butyric acid. Butyrate is a metabolite of intestinal bacteria and a major energy source for gut epithelial cells, and is known to play a key role in the homeostasis of the gastrointestinal tract.² A review of the effects of sodium butyrate on cell volume regulation and chloride transport in the rat distal colon has been published.³ Sodium butyrate is a known inhibitor of histone deacetylases.⁴

A study of the enhancement and suppression of various cytokines in stimulated human monocytes using sodium butyrate has been reported.² In cultured mouse and human cells, sodium butyrate has been shown to inhibit both the mRNA and protein content of cyclin D1.⁵

The use of sodium butyrate to increase the production of recombinant proteins in Chinese hamster ovary (CHO) cells has been described.⁶ Sodium butyrate has been shown to enhance the expression of recombinant monoclonal antibody fragments from human embryonic kidney (HEK-293) cells.⁷

Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions

This product is soluble in water (100 mg/ml), with sonication as needed, yielding a clear to slightly hazy, colorless solution.

References

1. Quantitative Chemical Analysis, 4th ed., Kolthoff, I. M., et al., MacMillan Pub. (New York, NY: 1969).
2. Saemann, M. D., et al., Anti-inflammatory effects of sodium butyrate on human monocytes: potent inhibition of IL-12 and up-regulation of IL-10 production. *FASEB J.*, **14(15)**, 2380-2382 (2000).
3. Diener, M., and Scharrer, E., Effects of short-chain fatty acids on cell volume regulation and chloride transport in the rat distal colon. *Comp. Biochem. Physiol. A Physiol.*, **118(2)**, 375-379 (1997).
4. Kruh, J., Effects of sodium butyrate, a new pharmacological agent, on cells in culture. *Mol. Cell. Biochem.*, **42(2)**, 65-82 (1982).
5. Lallemand, F., et al., Direct inhibition of the expression of cyclin D1 gene by sodium butyrate. *Biochem. Biophys. Res. Commun.*, **229(1)**, 163-169 (1996).
6. Palermo, D. P., et al., Production of analytical quantities of recombinant proteins in Chinese hamster ovary cells using sodium butyrate to elevate gene expression. *J. Biotechnol.*, **19(1)**, 35-47 (1991).
7. Grunberg, J., et al., High-yield production of recombinant antibody fragments in HEK-293 cells using sodium butyrate. *Biotechniques*, **34(5)**, 968-972 (2003).

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