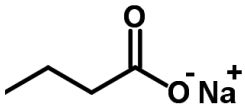
Product Specification Sheet

Product Name	Stemolecule™ Sodium Butyrate
Description	Sodium Butyrate is the sodium salt of the short-chain fatty acid butyric acid. It is a metabolite of intestinal bacteria, a major energy source for gut epithelial cells, and is known to play a key role in the homeostasis of the gastrointestinal tract[1]. Sodium butyrate is also a known inhibitor of histone deacetylases (HDACs)[2]. HDAC inhibitors are promising anti-tumour agents that work by inhibiting cell proliferation and survival[3]. Along with the cytokines Activin A and acidic fibroblast growth factor (aFGF), sodium butyrate has been shown to direct the differentiation of mouse embryonic stem (ES) cells into hepatycytes[4]. Sodium Butyrate has also been reported to increase the efficiency of transfection and expression for both transient and stable transfections[5].
Catalog Number	04-0005
Size	500 mg
Alternate Name	Butyric acid sodium salt
Chemical Formula	$C_4H_7NaO_2$
Structure	
Molecular Weight	111.1
CAS Number	156-54-7
Purity	Greater than 98% by acid base titration
Formulation	White solid
Solubility	For a 100 mM concentrated stock solution of Sodium Butyrate, add 9 ml of water to 100 mg of the compound. If precipitate is observed, warm the solution to 37°C for 2 to 5 minutes. For cell culture, the medium should be prewarmed prior to supplementing with the reconstituted compound. This molecule is soluble in water at 900 mM.
Storage and Stability	Store powder at 4°C protected from light. Following reconstitution, store aliquots at -20°C. Stock solutions are stable for 6 months when stored as directed.
Quality Control	The purity of Sodium Butyrate was determined by acid base titration. The accurate mass was determined by mass spectrometry. Cellular toxicity of Sodium Butyrate was tested on HeLa and HEK293 cells.

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References

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2. Kruh, J. (1982) Effecs of sodium butyrate, a new pharmacological agent, on cells in culture. Mol Cell Biochem 42: 65-82.
3. Mühlethaler-Mottet, A., Meier, R., Flahaut, M., KBourloud, K.B., Nardou, K., Joseph, J.M., and Gross, N. (2008) Complex molecular mechanisms cooperate to mediate histone deacetylase inhibitors anti-tumour activity in neuroblastoma cells. Mol Cancer 7: 55.
4. Zhou, M., Li, P., Tan, L., Qu, S., Ying, Q.L., Song, H. (2010) Differentiation of mouse embryonic stem cells into hepatocytes induced by a combination of cytokines and sodium butyrate. J Cell Biochem 109: 606-614.
5. Goding, C.R., and Russell, W.C. (1983) S1 sensitive sites in adenovirus DNA. Nucleic Acids Res. 11: 21-36.