

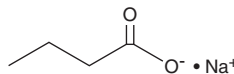
# PRODUCT INFORMATION



## Sodium Butyrate

Item No. 13121

**CAS Registry No.:** 156-54-7  
**Formal Name:** butanoic acid, sodium salt  
**Synonyms:** Butyric Acid, FA 4:0  
**MF:** C<sub>4</sub>H<sub>7</sub>O<sub>2</sub> • Na  
**FW:** 110.1  
**Purity:** ≥95%  
**Supplied as:** A crystalline solid  
**Storage:** Room temperature  
**Stability:** ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

Sodium butyrate is supplied as a crystalline solid. A stock solution may be made by dissolving the sodium butyrate in an organic solvent purged with an inert gas. Sodium butyrate is soluble in the organic solvent ethanol at a concentration of approximately 5 mg/ml.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of sodium butyrate can be prepared by directly dissolving the crystalline compound in aqueous buffers. The solubility of sodium butyrate in PBS (pH 7.2) is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

Sodium butyrate is a short-chain fatty acid.<sup>1</sup> It is produced predominately by bacterial fermentation of dietary fiber in the colon but has also been identified in mammalian milk.<sup>1,2</sup> Sodium butyrate is an inhibitor of histone deacetylase (HDAC; IC<sub>50</sub> = 90 μM in a cell-free assay).<sup>3</sup> It induces differentiation, cell cycle arrest at the G<sub>0</sub> phase, and apoptosis, as well as inhibits proliferation, in a variety of cancer cells when used at concentrations ranging from 0.6 to 100 mM.<sup>2,4-6</sup> Sodium butyrate decreases the expression of IFN-γ-related signaling genes and metastatic genes in H460 human lung cancer cells when used at a concentration of 2 mM.<sup>6</sup> It reduces tumor growth in a CaSki mouse xenograft model when administered at doses of 200 and 800 mg/kg per day.<sup>4</sup> Sodium butyrate also reduces increases in colonic *TNFα* and *Il6* expression and decreases colonic goblet cell depletion, tissue damage, muscle thickening, and cellular infiltration in a wild-type, but not *Hcar2*<sup>-/-</sup>, mouse model of TNBS-induced colitis.<sup>7</sup>

### References

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4. Decrion-Barthod, A.-Z., Bosset, M., Plissonnier, M.-L., et al. *Anticancer Res.* **30(10)**, 4049-4061 (2010).
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7. Chen, G., Ran, X., Li, B., et al. *EBioMedicine* **30(1)**, 317-325 (2018).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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