

Sodium butyrate is a compound with formula  $\text{Na}(\text{C}_3\text{H}_7\text{COO})$ . It is the sodium salt of butyric acid. It has various effects on cultured mammalian cells including inhibition of proliferation, induction of differentiation and induction or repression of gene expression.

As such, it can be used in lab to bring about any of these effects. Specifically, butyrate treatment of cells results in histone hyperacetylation, and butyrate itself inhibits [histone deacetylase](#) (HDAC) activity.

Butyrate has been an essential vehicle for determining the role of histone acetylation in chromatin structure and function. Inhibition of HDAC activity is estimated to affect the expression of only 2% of mammalian genes.

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