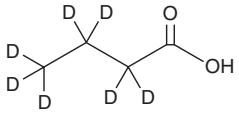
PRODUCT INFORMATION

Butyric Acid-d_7

Item No. 29408

CAS Registry No.: 73607-83-7
MF: $C_4HD_7O_2$
FW: 95.1
Chemical Purity: ≥98% (Butyric Acid)
Deuterium Incorporation: ≥98% deuterated forms (d_1-d_7); ≤2% d_0
Supplied as: A liquid
Storage: -20°C
Stability: ≥2 years



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

Laboratory Procedures

Butyric acid-d_7 is intended for use as an internal standard for the quantification of sodium butyrate (Item No. 13121) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated *versus* unlabeled).

Butyric acid-d_7 is supplied as a liquid. A stock solution may be made by dissolving the butyric acid-d_7 in the solvent of choice, which should be purged with an inert gas. Butyric acid-d_7 is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of butyric acid-d_7 in these solvents is approximately 30 mg/ml.

Description

Butyric acid is a short-chain fatty acid.[1] It is produced predominately by bacterial fermentation of dietary fiber in the colon but has also been identified in mammalian milk.[1,2] Butyric acid is an inhibitor of histone deacetylase (HDAC; IC_{50} = 90 µM in a cell-free assay).[3] It induces differentiation, cell cycle arrest at the G_0 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.[1,4-6] Butyric acid 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.[5] It reduces tumor growth in a CaSki mouse xenograft model when administered at doses of 200 and 800 mg/kg per day.[4] Butyric acid also reduces increases in colonic *Tnfa* and *Il6* expression and decreases colonic goblet cell depletion, tissue damage, muscle thickening, and cellular infiltration in a wild-type, but not *Hcar2*$^{-/-}$, mouse model of TNBS-induced colitis.[7]

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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