

PRODUCT INFORMATION



Tauro- β -muricholic Acid- d_4 (sodium salt)

Item No. 27040

Formal Name: 2-[[[(3 α ,5 β ,6 β ,7 β)-3,6,7-trihydroxy-24-oxocholan-24-yl]-2,2,4,4- d_4]amino]ethanesulfonic acid, monosodium salt

Synonyms: Tauro- β -muricholate- d_4 , T β MCA- d_4

MF: $C_{26}H_{40}D_4NO_7S \cdot Na$

FW: 541.7

Chemical Purity: $\geq 95\%$ (Tauro- β -muricholic Acid)

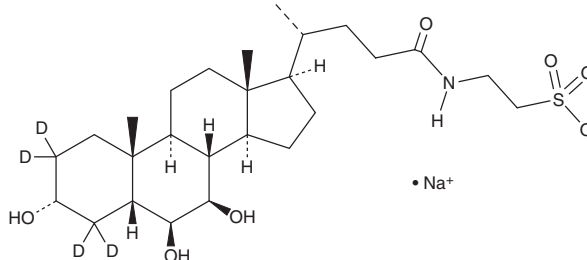
Deuterium

Incorporation: $\geq 99\%$ deuterated forms (d_1 - d_4); $\leq 1\%$ d_0

Supplied as: A crystalline solid

Storage: -20°C

Stability: ≥ 2 years



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

Laboratory Procedures

Tauro- β -muricholic acid- d_4 (T β MCA- d_4) (sodium salt) is intended for use as an internal standard for the quantification of T β MCA (Item No. 20289) 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).

T β MCA- d_4 (sodium salt) is supplied as a crystalline solid. A stock solution may be made by dissolving the T β MCA- d_4 (sodium salt) in the solvent of choice, which should be purged with an inert gas. T β MCA- d_4 (sodium salt) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of T β MCA- d_4 (sodium salt) in ethanol is approximately 1 mg/ml and approximately 10 mg/ml in DMSO and DMF.

Description

T β MCA is a competitive and reversible antagonist of the farnesoid X receptor (FXR; $IC_{50} = 40 \mu\text{M}$) and a taurine-conjugated form of the murine-specific primary bile acid β -muricholic acid (Item No. 20287).¹ T β MCA accumulates in germ-free mice under normal conditions but is reduced after colonization with feces from a human donor.^{1,2} T β MCA is increased in the intestines of mice resistant to high-fat diet-induced obesity, fatty liver, and diabetes.³

References

1. Sayin, S.I., Wahlström, A., Felin, J., *et al.* Gut microbiota regulates bile acid metabolism by reducing the levels of tauro-beta-muricholic acid, a naturally occurring FXR antagonist. *Cell Metab.* **17**(2), 225-235 (2013).
2. Wahlström, A., Kovatcheva-Datchary, P., Ståhlman, M., *et al.* Induction of farnesoid X receptor signaling in germ-free mice colonized with a human microbiota. *J. Lipid. Res.* **58**(2), 412-419 (2017).
3. Qi, Y., Jiang, C., Cheng, J., *et al.* Bile acid signaling in lipid metabolism: Metabolomic and lipidomic analysis of lipid and bile acid markers linked to anti-obesity and anti-diabetes in mice. *Biochim. Biophys. Acta.* **1851**(1), 19-29 (2015).

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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