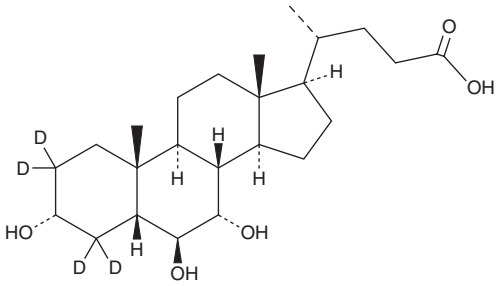
PRODUCT INFORMATION

α-Muricholic Acid-d_4

Item No. 27036

Formal Name:	(3α,5β,6β,7α)-3,6,7-trihydroxy-cholan-24-oic-2,2,4,4-d_4 acid
Synonyms:	5β-Cholanic Acid-3α,6β,7α-triol-d_4, α-MCA-d_4
MF:	$C_{24}H_{36}D_4O_5$
FW:	412.6
Chemical Purity:	≥95% (α-Muricholic Acid)
Deuterium Incorporation:	≥99% deuterated forms (d_1-d_4); ≤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

α-Muricholic acid-d_4 is intended for use as an internal standard for the quantification of α-muricholic acid (Item No. 20291) 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).

α-Muricholic acid-d_4 is supplied as a crystalline solid. A stock solution may be made by dissolving the α-muricholic acid-d_4 in the solvent of choice, which should be purged with an inert gas. α-Muricholic acid-d_4 is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of α-muricholic acid-d_4 in ethanol and DMSO is approximately 20 mg/ml and approximately 30 mg/ml in DMF.

Description

α-Muricholic acid is a murine-specific primary bile acid.[1,2] Dietary administration of soybean protein decreases fecal levels of α-muricholic acid in mice with high-fat diet-induced obesity, which correlates with increases in fecal *Clostridium* cluster XIVa, a major producer of secondary bile acids.[3] Plasma, liver, and muscle levels of α-muricholic acid are increased in mice switched from a high-fat to low-fat diet.[4]

References

1. Eyssen, H.J., Parmentier, G.G., and Mertens, J.A. Sulfate bile acids in germ-free and conventional mice. *Eur. J. Biochem.* **66(3)**, 507-514 (1976).
2. Uehara, T., Xi Peng, X., Bennett, B., *et al.* c-Jun N-terminal kinase mediates hepatic injury after rat liver transplantation. *Transplantation* **78(3)**, 324-332 (2004).
3. Watanabe, K., Igarashi, M., Li, X., *et al.* Dietary soybean protein ameliorates high-fat diet-induced obesity by modifying the gut microbiota-dependent biotransformation of bile acids. *PLoS One* **13(8)**, e0202083 (2018).
4. La Frano, M.R., Hernandez-Carretero, A., Weber, N., *et al.* Diet-induced obesity and weight loss alter bile acid concentrations and bile acid-sensitive gene expression in insulin target tissues of C57BL/6J mice. *Nutr. Res.* **46**, 11-21 (2017).

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