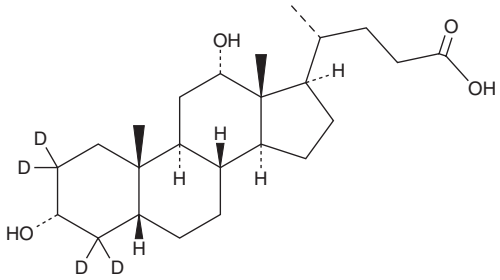
PRODUCT INFORMATION

Deoxycholic Acid-d_4

Item No. 20851

CAS Registry No.: 112076-61-6
Formal Name: (3α,5β,12α)-3,12-dihydroxy-cholan-24-oic-2,2,4,4-d_4 acid
Synonyms: Cholanoic acid-d_4, DCA-d_4
MF: $C_{24}H_{36}D_4O_4$
FW: 396.6
Chemical Purity: ≥95% (Deoxycholic acid)
Deuterium Incorporation: ≥99% deuterated forms (d_1-d_4); ≤1% d_0
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years



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

Laboratory Procedures

Deoxycholic acid-d_4 (DCA-d_4) is intended for use as an internal standard for the quantification of DCA (Item Nos. 20756 | 18231) 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).

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

Description

DCA is a secondary bile acid that is formed via microbial transformation of cholic acid (Item No. 20250) in the colon.[1] It can be conjugated to glycine or taurine (Item No. 27031) to produce glycodeoxycholic acid (GDCA; Item No. 20274) or taurodeoxycholic acid (TDCA; Item No. 15935), respectively, in hepatocytes.[1-3] DCA (0.2% v/v) inhibits spore germination induced by taurocholic acid (TCA; Item No. 16215) in seven *C. difficile* strains, as well as inhibits growth and decreases the cytotoxicity of *C. difficile* culture supernatants to Vero cells when used at a concentration of 0.02% v/v.[1] It inhibits ionizing radiation-induced p53-dependent transcription in a reporter assay using HCT116 cells when used at a concentration of 200 µM.[4] Fecal and intestinal tissue levels of DCA are increased in a rat model of high-fat diet-induced obesity compared with rats fed a normal diet.[5] Increased serum DCA levels have been found in patients with colorectal cancer.[6]

References

1. Thanissery, R., Winston, J.A., and Theriot, C.M. *Anaerobe* **45**, 86-100 (2017).
2. Schmid, A., Neumann, H., Karrasch, T., *et al. PLoS One* **11(2)**, e0148869 (2016).
3. Šarenac, T.M. and Mikov, M. *Front. Pharmacol.* **9**, 939 (2018).
4. Qiao, D., Gaitonde, S.V., Qi, W., *et al. Carcinogenesis* **22(6)**, 957-964 (2001).
5. Lin, H., An, Y., Tang, H., *et al. J. Agric. Food Chem.* **67(13)**, 3624-3632 (2019).
6. Bayerdörffer, E., Mannes, G.A., Richter, W.O., *et al. Gastroenterology* **104(1)**, 145-151 (1993).

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