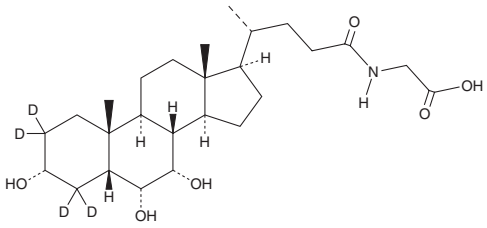
PRODUCT INFORMATION

Glycohyocholic Acid-d_4

Item No. 27034

Formal Name: N-[(3α,5β,6α,7α)-3,6,7-trihydroxy-24-oxocholan-24-yl-2,2,4,4-d_4]-glycine
Synonyms: GHCA-d_4, Glycine Hyocholate-d_4, Glycohyocholate-d_4
MF: $C_{26}H_{39}D_4NO_6$
FW: 469.7
Chemical Purity: ≥98% (Glycohyocholic 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

Glycohyocholic acid-d_4 (GHCA-d_4) is intended for use as an internal standard for the quantification of GHCA (Item No. 22670) 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).

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

GHCA-d_4 is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, GHCA-d_4 should first be dissolved in DMF and then diluted with the aqueous buffer of choice. GHCA-d_4 has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

GHCA is a glycine-conjugated form of the primary bile acid hyocholic acid (Item No. 20293).[1] GHCA is upregulated 6.6-fold in the serum of patients with cirrhosis induced by hepatitis C virus (HCV) compared to healthy controls.[2] Plasma levels of GHCA increase in patients who are no longer diabetic following gastric bypass surgery.[3]

References

1. Guo, L., Milburn, M.V., Ryals, J.A., *et al.* Plasma metabolomic profiles enhance precision medicine for volunteers of normal health. *Proc. Nat. Acad. Sci. USA* **112(35)**, E4901-E4910 (2015).
2. Fitian, A.I., Nelson, D.R., Liu, C., *et al.* Integrated metabolomic profiling of hepatocellular carcinoma in hepatitis C cirrhosis through GC/MS and UPLC/MS-MS. *Liver Int.* **34(9)**, 1428-1444 (2014).
3. Yu, H., Ni, Y., Bao, Y., *et al.* Chenodeoxycholic acid as a potential prognostic marker for Roux-en-Y gastric bypass in Chinese obese patients. *J. Clin. Endocrinol. Metab.* **100(11)**, 4222-4230 (2015).

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