

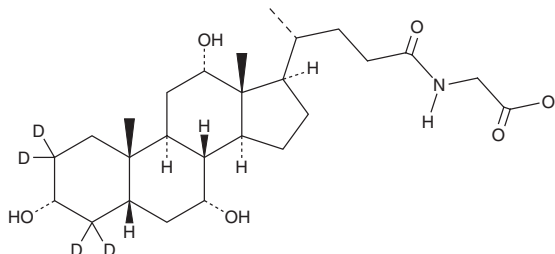
PRODUCT INFORMATION



Glycocholic Acid-d₄

Item No. 21889

CAS Registry No.: 1201918-15-1
Formal Name: N-[(3 α ,5 β ,7 α ,12 α)-3,7,12-trihydroxy-24-oxocholan-24-yl]-2,2,4,4-d₄-glycine
Synonyms: Cholylglycine-d₄, GCA-d₄
MF: C₂₆H₃₉D₄NO₆
FW: 469.7
Chemical Purity: $\geq 98\%$ (Glycocholic Acid)
Deuterium Incorporation: $\geq 99\%$ deuterated forms (d₁-d₄); $\leq 1\%$ d₀
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

Glycocholic acid-d₄ is intended for use as an internal standard for the quantification of glycocholic acid (Item No. 20276) 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).

Glycocholic acid-d₄ is supplied as a crystalline solid. A stock solution may be made by dissolving the glycocholic acid-d₄ in the solvent of choice. Glycocholic acid-d₄ is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of glycocholic acid-d₄ in ethanol is approximately 1 mg/ml and approximately 10 mg/ml in DMSO and DMF.

Description

Glycocholic acid is a glycine-conjugated form of the primary bile acid cholic acid (Item No. 20250) and has roles in the emulsification of fats.^{1,2} It reduces expression of the gene encoding the farnesoid X receptor (FXR) and increases expression of the genes encoding the bile acid receptors TGR5 and S1PR2 in SNU-245 cells when used at a concentration of 1.6 $\mu\text{mol/ml}$.³ Glycocholic acid (250 μM) increases the intracellular accumulation and cytotoxicity of epirubicin (Item No. 12091) in Caco-2 cells, as well as decreases expression of the genes encoding multidrug resistance protein 1 (MDR1), MDR-associated protein 1 (MRP1), and MRP2 when used alone or in combination with epirubicin.⁴ It increases absorption of epirubicin into everted sacs of rat ileum and jejunum when used at a concentration of 250 μM . The bile acid composition ratio of glycocholic acid is elevated in bile of patients with cholangiocarcinoma compared with patients with pancreatic cancer or benign biliary diseases.³ Serum levels of glycocholic acid are elevated in patients with hepatocellular carcinoma compared with healthy individuals.²

References

1. Lefebvre, P., Cariou, B., Lien, F., *et al.* *Physiol. Rev.* **89**(1), 147-191 (2009).
2. Guo, C., Xie, C., Ding, P., *et al.* *J. Chromatogr. B. Analyt. Technol. Biomed. Life Sci.* **1072**, 315-319 (2018).
3. Song, W.-S., Park, H.-M., Ha, J.M., *et al.* *Sci. Rep.* **8**(1), 11088 (2018).
4. Lo, Y.L., Ho, C.T., and Tsai, F.L. *Eur. J. Pharm. Sci.* **35**(1-2), 52-67 (2008).

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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