

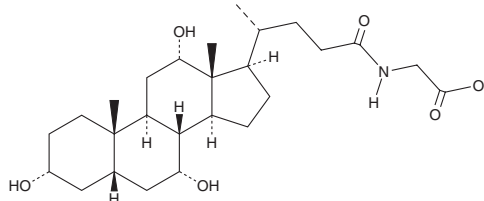
PRODUCT INFORMATION



Glycocholic Acid

Item No. 20276

CAS Registry No.: 475-31-0
Formal Name: N-[(3 α ,5 β ,7 α ,12 α)-3,7,12-trihydroxy-24-oxocholan-24-yl]-glycine
Synonyms: Cholylglycine, GCA
MF: C₂₆H₄₃NO₆
FW: 465.6
Purity: $\geq 95\%$
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 is supplied as a crystalline solid. A stock solution may be made by dissolving the glycocholic acid in the solvent of choice, which should be purged with an inert gas. Glycocholic acid is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of glycocholic acid in ethanol is approximately 1 mg/ml, and approximately 10 mg/ml in DMSO and DMF.

Glycocholic acid is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, Glycocholic acid should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. Glycocholic acid has a solubility of approximately 0.2 mg/ml in a 1:4 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

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.* Role of bile acids and bile acid receptors in metabolic regulation. *Physiol. Rev.* **89**(1), 147-191 (2009).
2. Guo, C., Xie, C., Ding, P., *et al.* Quantification of glycocholic acid in human serum by stable isotope dilution ultra performance liquid chromatography electrospray ionization tandem mass spectrometry. *J. Chromatogr. B. Analyt. Technol. Biomed. Life Sci.* **1072**, 315-319 (2018).
3. Song, W.-S., Park, H.-M., Ha, J.M., *et al.* Discovery of glycocholic acid and taurochenodeoxycholic acid as phenotypic biomarkers in cholangiocarcinoma. *Sci. Rep.* **8**(1), 11088 (2018).
4. Lo, Y.L., Ho, C.T., and Tsai, F.L. Inhibit multidrug resistance and induce apoptosis by using glycocholic acid and epirubicin. *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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CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897

[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM

WWW.CAYMANCHEM.COM