

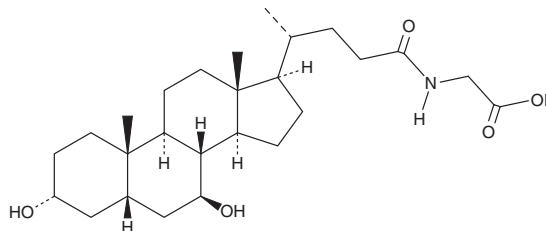
# PRODUCT INFORMATION



## Glycoursodeoxycholic Acid

Item No. 21698

**CAS Registry No.:** 64480-66-6  
**Formal Name:** N-[(3 $\alpha$ ,5 $\beta$ ,7 $\beta$ )-3,7-dihydroxy-24-oxocholan-24-yl]-glycine  
**Synonyms:** GUDCA, Ursodeoxycholyl Glycine  
**MF:** C<sub>26</sub>H<sub>43</sub>NO<sub>5</sub>  
**FW:** 449.6  
**Purity:**  $\geq$ 98%  
**UV/Vis.:**  $\lambda_{\text{max}}$ : 204 nm  
**Supplied as:** A crystalline solid  
**Storage:** -20°C  
**Stability:**  $\geq$ 4 years



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

### Laboratory Procedures

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

GUDCA is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, GUDCA should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. GUDCA 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

Glycoursodeoxycholic acid (GUDCA) is a glycine-conjugated form of the secondary bile acid ursodeoxycholic acid (UDCA; Item No. 15121).<sup>1,2</sup> It has antioxidant effects *in vitro* in Barrett's esophagus cells and primary cultured rat neurons.<sup>3,4</sup> GUDCA reduces the levels of inflammatory cytokines and prevents cell death induced by unconjugated bilirubin in an astroglial cell model of neonatal hyperbilirubinemia.<sup>5</sup> Oral administration of GUDCA (500 mg/kg per day) decreases the severity of symptoms and increases the amount of *A. muciniphila*, a bacterial species commonly decreased in patients with inflammatory bowel disease (IBD), in a mouse model of colitis.<sup>2</sup>

### 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. Van den Bossche, L., Hindryckx, P., Devisscher, L., *et al.* Ursodeoxycholic acid and its taurine- or glycine-conjugated species reduce colitogenic dysbiosis and equally suppress experimental colitis in mice. *Appl. Environ. Microbiol.* **83**(7), e02766-16 (2017).
3. Goldman, A., Condon, A., Adler, E., *et al.* Protective effects of glycoursodeoxycholic acid in Barrett's esophagus cells. *Dis. Esophagus* **23**(2), 83-93 (2010).
4. Brito, M.A., Lima, S., Fernandes, A., *et al.* Bilirubin injury to neurons: Contribution of oxidative stress and rescue by glycoursodeoxycholic acid. *Neurotoxicology* **29**(2), 259-269 (2008).
5. Fernandes, A., Vaz, A.R., Falcao, A.S., *et al.* Glycoursodeoxycholic acid and interleukin-10 modulate the reactivity of rat cortical astrocytes to unconjugated bilirubin. *J. Neuropathol. Exp. Neurol.* **66**(9), 789-798 (2007).

#### 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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