

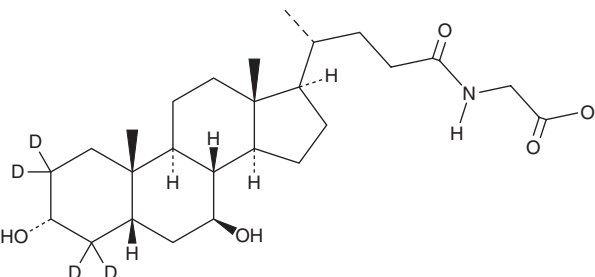
# PRODUCT INFORMATION



## Glycoursodeoxycholic Acid-d<sub>4</sub>

Item No. 31309

**CAS Registry No.:** 2044276-17-5  
**Formal Name:** N-[(3 $\alpha$ ,5 $\beta$ ,7 $\beta$ )-3,7-dihydroxy-24-oxocholan-24-yl-2,2,4,4-d<sub>4</sub>]-glycine  
**Synonyms:** GUDCA-d<sub>4</sub>, Ursodeoxycholyl Glycine-d<sub>4</sub>  
**MF:** C<sub>26</sub>H<sub>39</sub>D<sub>4</sub>NO<sub>5</sub>  
**FW:** 453.7  
**Chemical Purity:** ≥98% (Glycoursodeoxycholic Acid)  
**Deuterium Incorporation:** ≥99% deuterated forms (d<sub>1</sub>-d<sub>4</sub>); ≤1% d<sub>0</sub>  
**Supplied as:** A 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

Glycoursodeoxycholic acid-d<sub>4</sub> (GUDCA-d<sub>4</sub>) is intended for use as an internal standard for the quantification of GUDCA (Item No. 21698) 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).

GUDCA-d<sub>4</sub> is supplied as a solid. A stock solution may be made by dissolving the GUDCA-d<sub>4</sub> in the solvent of choice, which should be purged with an inert gas. GUDCA-d<sub>4</sub> is slightly soluble in DMSO and methanol.

### Description

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 (Item No. 17161) 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 commensal 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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