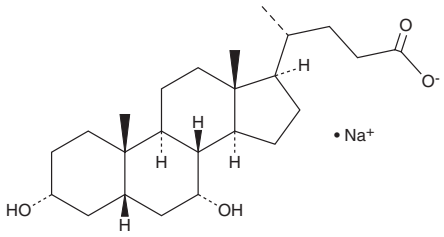
PRODUCT INFORMATION

Chenodeoxycholic Acid (sodium salt)

Item No. 35346

CAS Registry No.:	2646-38-0
Formal Name:	(5β)-3α,7α-dihydroxy-cholan-24-oic acid, monosodium salt
Synonyms:	CDCA, NSC 681066
MF:	$C_{24}H_{39}O_4$ • Na
FW:	414.6
Purity:	≥95%
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

Chenodeoxycholic acid (CDCA) (sodium salt) is supplied as a solid. A stock solution may be made by dissolving the CDCA (sodium salt) in the solvent of choice, which should be purged with an inert gas. CDCA (sodium salt) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of CDCA (sodium salt) in these solvents is approximately 1, 10, and 3 mg/ml, respectively.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of CDCA (sodium salt) can be prepared by directly dissolving the solid in aqueous buffers. The solubility of CDCA (sodium salt) in PBS (pH 7.2) is approximately 0.5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

CDCA is a hydrophobic primary bile acid.[1] It is formed from cholesterol in the liver *via* a multistep process catalyzed by the cytochrome P450 (CYP) isoforms CYP7A1, CYP8B1, and CYP27A1. CDCA is a farnesoid X receptor (FXR) agonist that binds to FXRs in a TR-FRET assay (EC_{50} = 13 µM) and induces FXR transactivation in a reporter assay.[2,3] It induces transcription of the gene encoding the Nrf2 target glutamate cysteine ligase (GCL) in primary hepatocytes and HepG2 cells when used at concentrations ranging from 25 to 100 µM.[4]

References

1. Fiorucci, S. and Distrutti, E. Chenodeoxycholic acid: An update on its therapeutic applications. *Bile acids and their receptors. Handbook of experimental pharmacology*. Fiorucci, S. and Distrutti, E., editors, 1st edition, *Springer* (2019).
2. Ohinata, Y., Payer, B., O'Carroll, D., *et al.* Blimp1 is a critical determinant of the germ cell lineage in mice. *Nature* **436**, 207-213 (2005).
3. Urizar, N.L., Liverman, A.B., Dodds, D.T., *et al.* A natural product that lowers cholesterol as an antagonist ligand for FXR. *Science* **296(5573)**, 1703-1706 (2002).
4. Tan, K.P., Yang, M., and Ito, S. Activation of nuclear factor (erythroid-2 like) factor 2 by toxic bile acids provokes adaptive defense responses to enhance cell survival at the emergence of oxidative stress. *Mol. Pharmacol.* **72(5)**, 1380-1390 (2007).

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