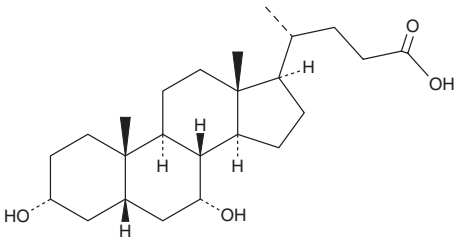
PRODUCT INFORMATION

Chenodeoxycholic Acid

Item No. 10011286

CAS Registry No.: 474-25-9
Formal Name: (3α,5β,7α)-3,7-dihydroxy-cholan-24-oic acid
Synonyms: Anthropodeoxycholic Acid, CDCA, Fluibil, Hekbilin, Kebilis, Ulmenide
MF: $C_{24}H_{40}O_4$
FW: 392.6
Purity: ≥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

Chenodeoxycholic acid (CDCA) is supplied as a crystalline solid. A stock solution may be made by dissolving the CDCA in an organic solvent purged with an inert gas. CDCA is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of CDCA in ethanol and DMSO is approximately 20 mg/ml and approximately 30 mg/ml in DMF.

CDCA is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, CDCA should first be dissolved in DMF and then diluted with the aqueous buffer of choice. CDCA has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMF:PBS (pH 7.2) using this method. 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(7048)**, 207-213 (2005).
3. Urizar, N.L., Liverman, A.B., Dodds, D.T., *et al*. A natural product that lowers cholesterol as an anatagonist 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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