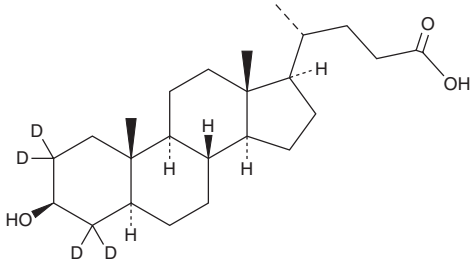
PRODUCT INFORMATION

Alloisolithocholic Acid-d_4

Item No. 41155

CAS Registry No.:	2410277-60-8
Formal Name:	(5α)-3β-hydroxy-d_4-cholan-24-oic acid
Synonyms:	AILCA-d_4, AlloisoLCA-d_4, β-hydroxy-5-Cholenoic Acid-d_4, IsoalloLCA-d_4, Isoallolithocholic Acid-d_4
MF:	$C_{24}H_{36}D_4O_3$
FW:	380.6
Chemical Purity:	≥98% (Alloisolithocholic Acid)
Deuterium Incorporation:	≥99% deuterated forms (d_1-d_4); ≤1% d_0
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

Alloisolithocholic acid-d_4 is intended for use as an internal standard for the quantification of alloisolithocholic acid (Item No. 29542) 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).

Alloisolithocholic acid-d_4 is supplied as a solid. A stock solution may be made by dissolving the alloisolithocholic acid-d_4 in the solvent of choice, which should be purged with an inert gas. Alloisolithocholic acid-d_4 is slightly soluble (0.1-1 mg/ml) in DMSO.

Description

Alloisolithocholic acid is a metabolite of the secondary bile acid metabolite 3-oxo lithocholic acid (dehydrolithocholic acid; Item No. 29544).[1] It is formed from 3-oxo lithocholic acid by gut microbiota.[1] Alloisolithocholic acid (20 µM) increases the association of the nuclear hormone receptor nerve growth factor IB (Nr4a1) to the gene encoding forkhead box protein P3 (*Foxp3*) in isolated mouse $CD4^+$ T cells. It induces the differentiation of isolated mouse T cells into regulatory T cells (Tregs) and the production of mitochondrial reactive oxygen species (ROS) in isolated mouse $CD4^+$ T cells when used at a concentration of 20 µM.[2] Alloisolithocholic acid (6 mg/kg) reduces hepatic bile flow and bile salt, cholesterol, and phospholipid secretion, as well as induces loss of microvilli and dilation of canaliculi in hepatocytes, markers of cholestasis, in rats.[3] Fecal levels of alloisolithocholic acid are reduced in patients with Crohn's disease or ulcerative colitis.[1]

References

1. Matos, R.R., Martucci, M.E.P., de Anselmo, C.S., *et al.* Pharmacokinetic study of xylazine in a zebrafsh water tank, a human-like surrogate, by liquid chromatography Q-Orbitrap mass spectrometry. *Forensic Toxicol.* **38**, 108-121 (2020).
2. Hang, S., Paik, D., Yao, L., *et al.* Bile acid metabolites control TH17 and Treg cell differentiation. *Nature* **576(7785)**, 143-148 (2019).
3. Vonk, R.J., Tuchweber, B., Massé, D., *et al.* Intrahepatic cholestasis induced by allo monohydroxy bile acid in rats. *Gastroenterology* **80(2)**, 242-249 (1981).

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.

WARRANTY AND LIMITATION OF REMEDY
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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