

# PRODUCT INFORMATION

## $\beta$ -Muricholic Acid- $d_4$

Item No. 27035

**Formal Name:** (5 $\beta$ )-3 $\alpha$ ,6 $\beta$ ,7 $\beta$ -trihydroxy-cholan-2,2,4,4- $d_4$ -24-oic acid

**Synonyms:** 5 $\beta$ -Cholanic Acid-3 $\alpha$ ,6 $\beta$ ,7 $\beta$ -triol- $d_4$ ,  $\beta$ -MCA- $d_4$

**MF:**  $C_{24}H_{36}D_4O_5$

**FW:** 412.6

**Chemical Purity:**  $\geq 98\%$  ( $\beta$ -Muricholic Acid)

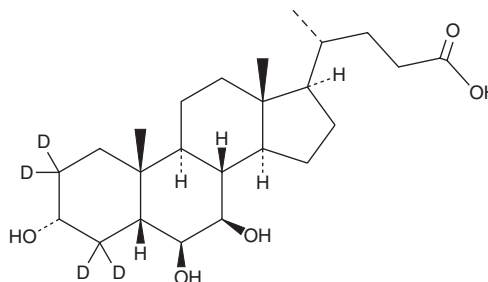
**Deuterium**

**Incorporation:**  $\geq 99\%$  deuterated forms ( $d_1$ - $d_4$ );  $\leq 1\%$   $d_0$

**Supplied as:** A crystalline solid

**Storage:**  $-20^\circ\text{C}$

**Stability:**  $\geq 2$  years



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

### Laboratory Procedures

$\beta$ -Muricholic acid- $d_4$  ( $\beta$ -MCA- $d_4$ ) is intended for use as an internal standard for the quantification of  $\beta$ -muricholic acid (Item No. 20287) 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).

$\beta$ -MCA- $d_4$  is supplied as a crystalline solid. A stock solution may be made by dissolving the  $\beta$ -MCA- $d_4$  in the solvent of choice, which should be purged with an inert gas.  $\beta$ -MCA- $d_4$  is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of  $\beta$ -MCA- $d_4$  in ethanol and DMSO is approximately 20 mg/ml and approximately 30 mg/ml in DMF.

### Description

$\beta$ -MCA is a murine-specific primary bile acid.<sup>1,2</sup> Dietary administration of  $\beta$ -MCA reduces HMG-CoA reductase activity in liver microsomes from mice fed a high cholesterol and cholic acid diet.<sup>3</sup> Dietary administration of  $\beta$ -MCA also dissolves 100% of gallstones in a gallstone-susceptible mouse model of diet-induced cholesterol gallstones.<sup>4</sup>

### References

1. Eyssen, H.J., Parmentier, G.G., and Mertens, J.A. Sulfate bile acids in germ-free and conventional mice. *Eur. J. Biochem.* **66**(3), 507-514 (1976).
2. Wahlström, A., Sayin, S.I., Marschall, H.-I., *et al.* Intestinal crosstalk between bile acids and microbiota and its impact on host metabolism. *Cell Metab.* **24**(1), 41-50 (2016).
3. Fujino, Y., Nakayama, K., Yoshimura, K., *et al.* Suppression of hepatic HMG-CoA reductase activity by  $\beta$ -muricholic acid in mice fed a diet containing cholesterol and cholic acid. *Jpn. J. Pharmacol.* **46**(4), 421-423 (1988).
4. Wang, D.Q.-H. and Tazuma, S. Effect of  $\beta$ -muricholic acid on the prevention and dissolution of cholesterol gallstones in C57L/J mice. *J. Lipid. Res.* **43**(11), 1960-1968 (2002).

#### 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

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 05/27/2021

#### 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