Tauro-β-muricholic acid sodium

Cat. No.: HY-135103

CAS No.: 145022-92-0

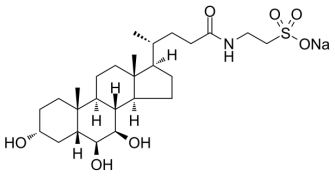
Molecular Formula: $C_{26}H_{44}NNaO_7S$

Molecular Weight: 537.68

Target: FXR

Pathway: Metabolic Enzyme/Protease

Storage: -20°C, stored under nitrogen, away from moisture
* In solvent : -80°C, 6 months; -20°C, 1 month (stored under nitrogen, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 10 mg/mL (18.60 mM; Need ultrasonic and warming)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	1.8598 mL	9.2992 mL	18.5984 mL
	5 mM	0.3720 mL	1.8598 mL	3.7197 mL
	10 mM	0.1860 mL	0.9299 mL	1.8598 mL

Please refer to the solubility information to select the appropriate solvent.

BIOLOGICAL ACTIVITY

Description

Tauro-β-muricholic Acid sodium (T-βMCA sodium), a endogenous metabolite, is a competitive and reversible farnesoid X receptor (FXR) antagonist, with an IC_{50} of 40 μM[1][2][3].

IC_{50} & Target

IC50: 40 μM (FXR)[1]

In Vitro

T-βMCA sodium inhibits FXR reporter activity in the CRC cell line HT29 (EC_{50} ~10 μM)[3].
T-βMCA sodium dose-dependently increases WNT signaling in HT29 and HCT116 cells[3].
T-βMCA sodium induces proliferation and DNA damage in $Lgr5^+$ cells[3].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo

T-βMCA sodium (400 mg/kg; i.g.; twice a week; for 6 weeks) can effectively recapitulate the ability of HFD to promote CRC progression[3].
T-βMCA sodium treatment also significantly increases levels of serum cytokines, including IFN-γ, IL-6, and IL-17[3].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	APCmin/+ mice[3]
Dosage:	400 mg/kg
Administration:	Oral gavage; twice a week; for 6 weeks
Result:	Markedly decreased intestinal integrity and accelerated tumor growth in the intestine and colon.

REFERENCES

[1]. Sayin SI, et al. Gut microbiota regulates bile acid metabolism by reducing the levels of tauro-beta-muricholic acid, a naturally occurring FXR antagonist. Cell Metab. 2013 Feb 5;17(2):225-35.

[2]. Wahlström A, et al. Induction of farnesoid X receptor signaling in germ-free mice colonized with a human microbiota. J Lipid Res. 2017 Feb;58(2):412-419.

[3]. Fu T, et al. FXR Regulates Intestinal Cancer Stem Cell Proliferation. Cell. 2019 Feb 21;176(5):1098-1112.e18.

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