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# ProductInformation

**Taurocholic acid sodium salt hydrate**
**SigmaUltra**

Product Number **T 9034**
Store at Room Temperature

## Product Description

Molecular Formula: $C_{26}H_{44}NO_7SNa\ xH_2O$
Molecular Weight: 537.7
CAS Number: 345909-26-4
Specific Rotation: +24° (30 mg/ml, 20 °C)[1]
$pK_a$: 1.4[1]
Critical Micelle Concentration (CMC): 3-11 mM
Synonyms: taurocholic acid sodium salt, 3α,7α,12α-trihydroxy-5β-cholan-24-oic acid N-(2-sulfoethyl)amide, 2-[(3α,7α,12α-trihydroxy-24-oxo-5β-cholan-24-yl)amino]ethanesulfonic acid, cholaic acid sodium salt[1]

Trace elemental analyses have been performed on the SigmaUltra sodium taurocholate. The Certificate of Analysis provides lot-specific results. SigmaUltra sodium taurocholate is for applications which require tight control of elemental content.

Sodium taurocholate, the sodium salt of taurocholic acid, is the conjugation product of cholic acid with taurine and the principal constituent of the bile of carnivorous animals.[1] *In vivo*, cholesterol is converted to trihydroxycoprostanote and subsequently to cholyl CoA, which is then conjugated to the amino group of taurine to form taurocholate.[2] Sodium taurocholate is a known activator of cholesterol esterase.[3,4] Studies of various lipases incorporate sodium taurocholate as an activator.[5,6]

Cell culture studies that use taurocholate have included the colonization by *Neisseria meningitidis* in cultured human nasopharyngeal mucosae, permeation of bile salt and bile salt:fatty acid mixed micellar systems in CaCo2 cells, and the infection of MDBK and HCT-8 cells by the parasite *Cryptosporidium* parvum.[7,8,9] A capillary electrophoresis study of the interactions between aminopenicillanic acid and its derivatives with bile salt micelles has been reported.[10]

## Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

## Preparation Instructions

This product is soluble in water (268 mg/ml), yielding a clear, faint yellow solution.

## References

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5. Liang, Y., et al., Importance of arginines 63 and 423 in modulating the bile salt-dependent and bile salt-independent hydrolytic activities of rat carboxyl ester lipase. J. Biol. Chem., **275(31)**, 24040-24046 (2000).
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8. Meaney, C. M., and O'Driscoll, C. M., A comparison of the permeation enhancement potential of simple bile salt and mixed bile salt:fatty acid micellar systems using the CaCo2 cell culture model. Int. J. Pharm., **207(1-2)**, 21-30 (2000).

9. Gold, D., et al., The utilization of sodium taurocholate in excystation of *Cryptosporidium parvum* and infection of tissue culture. J. Parasitol., **87(5)**, 997-1000 (2001).

10. Mrestani, Y., et al., The effect of a functional group in penicillin derivatives on the interaction with bile salt micelles studied by micellar electrokinetic chromatography. Electrophoresis, **22(16)**, 3573-3577 (2001).

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