Small Molecules

Tauroursodeoxycholic Acid (Sodium Salt)

PI3K/AKT pathway inhibitor; Inhibits apoptosis

Catalog #100-0884

1 g

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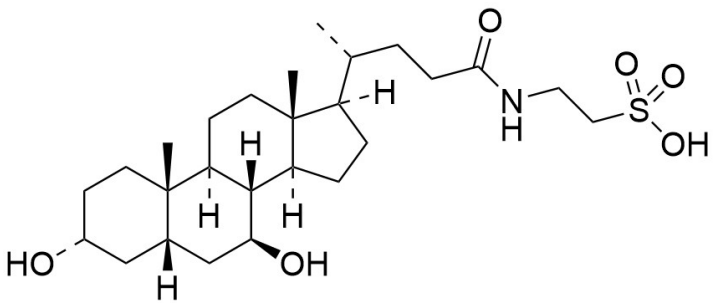
Product Description

Tauroursodeoxycholic acid is an endogenous hydrophilic bile and exhibits both anti-apoptotic and neuroprotective properties (Keene et al.; Yoon et al.). It protects against cell death by attenuating endoplasmic reticulum stress, inhibiting caspase activation and the production of oxygen radicals, and modulating the unfolded protein response (Vang et al.; Yoon et al.).

Alternative Names:	Sodium tauroursodeoxycholate
CAS Number:	14605-22-2
Chemical Formula:	$C_{26}H_{44}NO_6SNa$
Molecular Weight:	521.7 g/mol
Purity:	≥ 98%
Chemical Name:	3α,7β-dihydroxy-5β-cholan-24-oic acid N-(2-sulfoethyl)amide
Structure:	



Properties

Physical Appearance:	A crystalline solid
Storage:	Product stable at -20°C as supplied. Protect product from prolonged exposure to light. For long-term storage, store with a desiccant. Stable as supplied for 12 months from date of receipt.
Solubility:	· DMSO ≤ 55 mM · Absolute ethanol (warm) ≤ 35 mM For example, to prepare a 10 mM stock solution in DMSO, resuspend 1 g in 192 mL of DMSO. Prepare stock solution fresh before use. Information regarding stability of small molecules in solution has rarely been reported, however, as a general guide we recommend storage in DMSO at -20°C. Aliquot into working volumes to avoid repeated freeze-thaw cycles. The effect of storage of stock solution on compound performance should be tested for each application. Compound has low solubility in aqueous media. For use as a cell culture supplement, stock solution should be diluted into culture medium immediately before use. Avoid final DMSO concentration above 0.1% due to potential cell toxicity.

Published Applications

DISEASE MODELING
· Decreases both striatal atrophy and apoptosis in a mouse model of Huntington's disease (Keene et al.).
· Blocks apoptotic events such as Bax translocation to mitochondrial membrane, cytochrome c release, caspase activation, and nuclear fragmentation (Vang et al.).

References

Keene CD et al. (2002) Tauroursodeoxycholic acid, a bile acid, is neuroprotective in a transgenic animal model of Huntington's disease. Proc Natl Acad Sci USA 99(16): 10671–6.

Vang S et al. (2014) The unexpected uses of urso- and tauroursodeoxycholic acid in the treatment of non-liver diseases. Glob Adv Heal Med 3(3): 58–69.

Yoon YM et al. (2016) Tauroursodeoxycholic acid reduces ER stress by regulating of Akt-dependent cellular prion protein. Sci Rep 6: 39838.

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