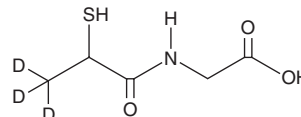


PRODUCT INFORMATION



Tiopronin-d₃ Item No. 33376

CAS Registry No.: 1189700-74-0
Formal Name: N-(2-mercapto-1-oxopropyl-3,3,3-d₃)-glycine
Synonym: (±)-Tiopronin-d₃
MF: C₅H₆D₃NO₃S
FW: 166.2
Chemical Purity: ≥98% (Tiopronin)
Deuterium Incorporation: ≥99% deuterated forms (d₁-d₃); ≤1% d₀
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

Tiopronin-d₃ is intended for use as an internal standard for the quantification of tiopronin (Item No. 23720) 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).

Tiopronin-d₃ is supplied as a solid. A stock solution may be made by dissolving the tiopronin-d₃ in the solvent of choice, which should be purged with an inert gas. Tiopronin-d₃ is soluble in organic solvents such as DMSO and methanol. It is also soluble in water. We do not recommend storing the aqueous solution for more than one day.

Description

Tiopronin is an antioxidant.¹⁻⁵ It reduces free radical production by murine macrophages and granulocytes *in vitro*.¹ Tiopronin increases hypoxia-inducible factor-1α (HIF-1α) and VEGF levels in HCT116 cells and reduces myeloperoxidase (MPO) activity and colon pro-inflammatory cytokine production in a rat model of colitis.² Tiopronin also reduces the incidence of cleft palate in fetuses born to female mice exposed to teratogenic methylmercury chloride.³ Tiopronin (100 mg/kg) decreases lipid peroxidation and transverse aortic constriction in a mouse model of cardiac hypertrophy.⁴ Tiopronin is hepatoprotective in a rat model of non-alcoholic steatohepatitis (NASH) via increasing superoxide dismutase (SOD) and glutathione peroxidase (GPX) activities and reversing hepatocyte degeneration.⁵ It has been associated with membranous nephropathy.⁶ Formulations containing tiopronin have been used in the treatment of cystinuria, an inborn error of metabolism characterized by kidney stones and excessive urinary excretion of cysteine, arginine, ornithine, and lysine.

References

1. Rommain, M., Delecoeuillerie, G., Paul, J.L., et al. *Rev. Rhum. Mal. Osteoartic.* **56(5 Pt 2)**, 34-37 (1989).
2. Yum, S., Park, H., Hong, S., et al. *Biochem. Biophys. Res. Commun.* **443(3)**, 1008-1013 (2014).
3. Fujimoto, T., Fuyuta, M., Kiyofuji, E., et al. *Teratology* **20(2)**, 297-301 (1979).
4. Date, M.O., Morita, T., Yamashita, N., et al. *J. Am. Coll. Cardiol.* **39(5)**, 907-912 (2002).
5. Wang, J.Q., Zou, Y.H., Huang, C., et al. *Acta. Pharmacol. Sin.* **33(6)**, 791-797 (2012).
6. Micallef, S., Delicata, L., Agius, J.F., et al. *Br. J. Hosp. Med. (Lond)*. **83(8)**, 1-4 (2022).

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.

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