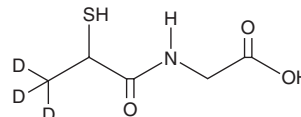


# PRODUCT INFORMATION



## Tiopronin-d<sub>3</sub> Item No. 33376

**CAS Registry No.:** 1189700-74-0  
**Formal Name:** N-(2-mercapto-1-oxopropyl-3,3,3-d<sub>3</sub>)-glycine  
**Synonym:** (±)-Tiopronin-d<sub>3</sub>  
**MF:** C<sub>5</sub>H<sub>6</sub>D<sub>3</sub>NO<sub>3</sub>S  
**FW:** 166.2  
**Chemical Purity:** ≥98% (Tiopronin)  
**Deuterium Incorporation:** ≥99% deuterated forms (d<sub>1</sub>-d<sub>3</sub>); ≤1% d<sub>0</sub>  
**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-d<sub>3</sub> 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-d<sub>3</sub> is supplied as a solid. A stock solution may be made by dissolving the tiopronin-d<sub>3</sub> in the solvent of choice, which should be purged with an inert gas. Tiopronin-d<sub>3</sub> 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 that has diverse biological activities.<sup>1-5</sup> It reduces free radical production by murine macrophages and granulocytes *in vitro* in a dose-dependent manner.<sup>1</sup> Tiopronin induces expression of hypoxia-inducible factor 1α (HIF-1α) and increases VEGF secretion in human colon carcinoma cells.<sup>2</sup> Rectal administration (500 μl of a 10 mM solution) reduces myeloperoxidase activity and reduces pro-inflammatory cytokine production in the colon in a rat model of colitis. Tiopronin (80-320 mg/kg per day) reduces the incidence of cleft palate in fetuses born to female mice orally exposed to teratogenic methylmercury chloride.<sup>3</sup> Tiopronin (100 mg/kg) reduces heme oxygenase 1 mRNA expression, lipid peroxidation, and transverse aortic constriction in a mouse model of cardiac hypertrophy.<sup>4</sup> Tiopronin (20 mg/kg) is hepatoprotective, increasing activity of the antioxidant enzymes superoxide dismutase and glutathione peroxidase and reversing hepatocyte degeneration in a rat model of high-fat diet-induced non-alcoholic steatohepatitis.<sup>5</sup>

### 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).

#### 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

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