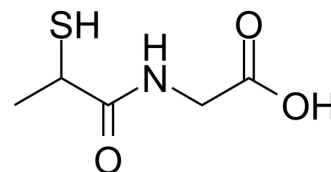


Tiopronin

Cat. No.:	HY-B0373
CAS No.:	1953-02-2
Molecular Formula:	C ₅ H ₉ NO ₃ S
Molecular Weight:	163.19
Target:	Others
Pathway:	Others
Storage:	<div> <div>Powder</div> <div>-20°C 3 years</div> <div>4°C 2 years</div> </div> <div> <div>In solvent</div> <div>-80°C 2 years</div> <div>-20°C 1 year</div> </div>



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 100 mg/mL (612.78 mM)
H₂O : 100 mg/mL (612.78 mM; Need ultrasonic)
* "≥" means soluble, but saturation unknown.

	Solvent Concentration	Mass	1 mg	5 mg	10 mg
Preparing Stock Solutions	1 mM		6.1278 mL	30.6391 mL	61.2783 mL
	5 mM		1.2256 mL	6.1278 mL	12.2557 mL
	10 mM		0.6128 mL	3.0639 mL	6.1278 mL

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

In Vivo

- Add each solvent one by one: PBS
Solubility: 130 mg/mL (796.62 mM); Clear solution; Need ultrasonic
- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
Solubility: ≥ 2.5 mg/mL (15.32 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
Solubility: ≥ 2.5 mg/mL (15.32 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil
Solubility: ≥ 2.5 mg/mL (15.32 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Tiopronin is a diffusible antioxidant, an antidote to heavy metal poisoning and a radioprotective agent. Tiopronin can control the rate of cystine precipitation and excretion and has the potential for cystinuria, rheumatoid arthritis and hepatic disorders^{[1][2]}.

In Vitro	<p>In in vitro Von Hippel-Lindau protein binding assay, the inhibitory effect of Tiopronin (NMPG) on HPH-2 was attenuated by escalating dose of ascorbate but not 2-ketoglutarate, cofactors of the enzyme^[2].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>
In Vivo	<p>Tiopronin (NMPG) alleviates colonic injury and effectively lowered myeloperoxidase activity. Moreover, NMPG substantially attenuates expression of pro-inflammatory mediators in the inflamed colon. NMPG induces hypoxia-inducible factor-1α (HIF-1α) in human colon carcinoma cells, leading to elevated secretion of vascular endothelial growth factor (VEGF), a target gene product of HIF-1 involved in ulcer healing of gastrointestinal mucosa. NMPG induces HIF-1α occurred by inhibiting HIF prolyl hydroxylase-2 (HPH-2), an enzyme that plays a major role in negatively regulating HIF-1α protein stability^[2].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>

REFERENCES

[1]. Pu Zhang, et al. Detection of tiopronin in body fluids and pharmaceutical products using red-emissive DNA-stabilized silver nanoclusters as a fluorescent probe. *Mikrochim Acta*. 2019 Aug 8;186(9):609.

[2]. Soohwan Yum, et al. N-(2-Mercaptopropionyl)-glycine, a diffusible antioxidant, activates HIF-1 by inhibiting HIF prolyl hydroxylase-2: implication in amelioration of rat colitis by the antioxidant. *Biochem Biophys Res Commun*. 2014 Jan 17;443(3):1008-13.

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA