

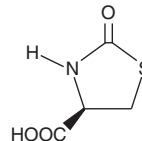
PRODUCT INFORMATION



Procysteine

Item No. 10006326

CAS Registry No.: 19771-63-2
Formal Name: 2-oxo-(4R)-4-thiazolidinecarboxylic acid
Synonyms: L-2-oxothiazolidine-4-Carboxylic Acid,
L-2-oxothiazolidine-4-Carboxylate, OTC
MF: C₄H₅NO₃S
FW: 147.2
Purity: ≥98%
Supplied as: A crystalline 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

Procysteine is supplied as a crystalline solid. A stock solution may be made by dissolving the procysteine in the solvent of choice, which should be purged with an inert gas. Procysteine is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of procysteine in these solvents is approximately 30 mg/ml.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of procysteine can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of procysteine in PBS, pH 7.2, is approximately 5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Procysteine is a prodrug form of cysteine that is metabolized to cysteine intracellularly and has antioxidant activity.^{1,2} It reduces TNF- α -induced increases in the expression of IL-6 and chemokine (C-C motif) ligand 2 (CCL2) in ARPE-19 human retinal pigment epithelial cells when used at a concentration of 0.5 mM.³ Procysteine (6.5 mmol/kg) also increases liver glutathione (GSH) levels in fasted, but not fed, mice.¹ It reduces the production of reactive oxygen species (ROS) in bronchoalveolar lavage fluid (BALF) and decreases plasma extravasation in the lungs, as well as reverses decreases in the levels of hypoxia-inducible factor (HIF-1 α) in a mouse model of allergic asthma when administered at doses of 80 and 160 mg/kg.²

References

- Williamson, J.M. and Meister, A. Stimulation of hepatic glutathione formation by administration of L-2-oxothiazolidine-4-carboxylate, a 5-oxo-L-prolinase substrate. *Proc. Natl. Acad. Sci. USA*. **78(2)**, 936-939 (1981).
- Lee, K.S., Park, H.S., Park, S.J., *et al.* A prodrug of cysteine, L-2-oxothiazolidine-4-carboxylic acid, regulates vascular permeability by reducing vascular endothelial growth factor expression in asthma. *Mol. Pharmacol.* **68(5)**, 1281-1290 (2005).
- Promsote, W., Veeranan-Karmegam, R., Ananth, S., *et al.* L-2-oxothiazolidine-4-carboxylic acid attenuates oxidative stress and inflammation in retinal pigment epithelium. *Mol. Vis.* **20**, 73-88 (2014).

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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