上海源叶生物科技有限公司
Shanghai yuanye Bio-Technology Co., Ltd
电话：021-61312973　　传真：021-55068248
网址：www.shyuanye.com
邮箱：shyysw@sina.com

产品名称：L-高胱氨酸硫内酯盐酸盐
产品别名：L-Homocysteine thiolactone hydrochloride

生物活性：

Description	L-Homocysteine thiolactone hydrochloride is an intramolecular thioester of homocysteine; prevents translational incorporation of homocysteine into proteins.
In Vitro	In all cell types, from bacterial to human, homocysteine is metabolized to homocysteine thiolactone by methionyl-tRNA synthetase. Elevated levels of homocysteine are an independent risk factor for cardiovascular disease in humans. Homocysteine can be harmful to human cells because of its metabolic conversion to homocysteine thiolactone, a reactive thioester. This conversion occurs in all human cell types, including endothelial cells[1]. Homocysteine thiolactone induces cell death and features of apoptosis including increased phosphotidylserine exposure on the membrane surface, increased apoptotic cells with hypoploid DNA contents, and internucleosomal DNA fragmentation in HL-60 cells[2]. Homocysteine thiolactone is cytotoxic and capable of promoting cell death, as measured by caspase-3 activation and DNA fragmentation. HcyT strongly activates IL-8 release[3].
In Vivo	Homocysteine thiolactone is toxic, induces epileptic seizures in rodents, and has been implicated in Alzheimer's disease[4]. Homocysteine thiolactone induces two types of seizures, the coexistence of convulsive and nonconvulsive epilepsy. The grade of seizures is dose dependent[5].
Solvent&Solubility	***In Vitro:*** **H_2O : ≥ 23 mg/mL (149.71 mM)** * "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	6.5091 mL	32.5457 mL	65.0915 mL
	5 mM	1.3018 mL	6.5091 mL	13.0183 mL
	10 mM	0.6509 mL	3.2546 mL	6.5091 mL

*请根据产品在不同溶剂中的溶解度选择合适的溶剂配制储备液；一旦配成溶液，请分装保存，避免反复冻融造成的产品失效。

储备液的保存方式和期限：-80°C, 6 months; -20°C, 1 month。-80°C 储存时，请在 6 个月内使用，-20°C 储存时，请在 1 个月内使用。

References

[1]. Jakubowski H, et al. Homocysteine thiolactone: metabolic origin and protein homocysteinylation in humans. J Nutr. 2000 Feb;130(2S Suppl):377S-381S.

[2]. Huang RF, et al. Homocysteine thiolactone induces apoptotic DNA damage mediated by increased intracellularhydrogen peroxide and caspase 3 activation in HL-60 cells. Life Sci. 2001 May 11;68(25):2799-811.

[3]. Kerkeni M, et al. Comparative study on in vitro effects of homocysteine thiolactone and homocysteine on HUVECcells: evidence for a stronger proapoptotic and proinflammative homocysteine thiolactone. Mol Cell Biochem. 2006 Oct;291(1-2):119-26.

[4]. Borowczyk K, et al. Metabolism and neurotoxicity of homocysteine thiolactone in mice: evidence for a protective role of paraoxonase 1. J Alzheimers Dis. 2012;30(2):225-31.

	[5]. Stanojlović O, et al. Two types of seizures in homocysteine thiolactone-treated adult rats, behavioral and electroencephalographic study. Cell Mol Neurobiol. 2009 May;29(3):329-39.

实验参考：

Cell Assay	HUVEC are treated with homocysteine (1, 5, 10 mM) or homocysteine thiolactone (0.25, 0.5, 1 mM) for 3, 6, 12 and 24 h. Cell survival is determined by the MTT method. The optical density is measured at 570 nm with 630 nm as a reference[3].
Animal Administration	Rats: Homocysteine thiolactone is freshly prepared in saline and administered in a volume of 1.0 mL/100 g body weight. Rats are divided into control (saline-injected) group and homocysteine thiolactone-treated group. The latter group receives different doses 5.5 mM/kg, 8.0 mM/kg, and 11.0 mM/kg, respectively. Each rat is used only once[5].
References	[1]. Jakubowski H, et al. Homocysteine thiolactone: metabolic origin and protein homocysteinylation in humans. J Nutr. 2000 Feb;130(2S Suppl):377S-381S. [2]. Huang RF, et al. Homocysteine thiolactone induces apoptotic DNA damage mediated by increased intracellularhydrogen peroxide and caspase 3 activation in HL-60 cells. Life Sci. 2001 May 11;68(25):2799-811. [3]. Kerkeni M, et al. Comparative study on in vitro effects of homocysteine thiolactone and homocysteine on HUVECcells: evidence for a stronger proapoptotic and proinflammative homocysteine thiolactone. Mol Cell Biochem. 2006 Oct;291(1-2):119-26. [4]. Borowczyk K, et al. Metabolism and neurotoxicity of homocysteine thiolactone in mice: evidence for a protective role of paraoxonase 1. J Alzheimers Dis. 2012;30(2):225-31. [5]. Stanojlović O, et al. Two types of seizures in homocysteine thiolactone-treated adult rats, behavioral and electroencephalographic study. Cell Mol Neurobiol. 2009 May;29(3):329-39.