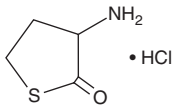
PRODUCT INFORMATION

DL-Homocysteine thiolactone (hydrochloride)

Item No. 31466

CAS Registry No.:	6038-19-3
Formal Name:	3-aminodihydro-2(3H)-thiophenone, monohydrochloride
Synonyms:	DL-Hcy thiolactone, DL-Hcy TLHC, NSC 22879
MF:	$C_4H_7NOS \bullet HCl$
FW:	153.6
Purity:	≥95%
UV/Vis.:	λ_{max}: 237 nm
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

DL-Homocysteine thiolactone (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the DL-homocysteine thiolactone (hydrochloride) in the solvent of choice, which should be purged with an inert gas. DL-Homocysteine thiolactone (hydrochloride) is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of DL-homocysteine thiolactone (hydrochloride) in these solvents is approximately 30 and 15 mg/ml, respectively.

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 DL-homocysteine thiolactone (hydrochloride) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of DL-homocysteine thiolactone (hydrochloride) in PBS (pH 7.2) is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

DL-Homocysteine thiolactone is a derivative of DL-homocysteine (Item No. 30285).[1] It inhibits the growth of *B. campestris*, *L. sativa*, and *E. utilis* roots when used at a concentration of 50 µM.[2] DL-Homocysteine thiolactone (10 µM) decreases the maximum rate of left ventricular developed pressure, systolic left ventricular pressure, and coronary flow in isolated rat hearts.[3] It induces arteriosclerotic plaque formation in rabbits when administered at a dose of 30 mg/kg for eight weeks.[1] DL-Homocysteine thiolactone has also been used as a precursor in the synthesis of thiolactone-containing monomers for use in polymer-based formaldehyde-scavenging coatings.[4]

References

1. McCully, K.S. and Wilson, R.B. Homocysteine theory of arteriosclerosis. *Atherosclerosis* **22(2)**, 215-227 (1975).
2. Inamori, Y., Muro, C., Toyoda, M., *et al.* Root-growth inhibition by DL-homocysteine thiolactone and its related compounds. *Biosci. Biotech. Biochem.* **59(3)**, 523-525 (1995).
3. Zivkovic, V., Jakovljevic, V., Pechanova, O., *et al.* Effects of DL-homocysteine thiolactone on cardiac contractility, coronary flow, and oxidative stress markers in the isolated rat heart: The role of different gasotransmitters. *Biomed. Res. Int.* 318471 (2013).
4. Resetco, C., Frank, D., Dikić, T., *et al.* Thiolactone-based polymers for formaldehyde scavenging coatings. *Eur. Polym. J.* **82**, 166-174 (2016).

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