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ProductInformation

L-Cysteine, from non-animal source
Cell Culture Tested

Product Number **C7352**
Store at Room Temperature

Product Description

Molecular Formula: $C_3H_7NO_2S$
Molecular Weigh: 121.2
CAS Number: 52-90-4
Synonym: (R)-2-amino-3-mercaptopropionic acid

This product is cell culture tested and is tested for endotoxin levels.

Cysteine is a major biological source of sulfur and is one of the two common sulfur-containing amino acids. The biosynthesis of cysteine occurs through the initial condensation of homocysteine and serine via cystathionine synthase to form cystathionine, which in turn undergoes cleavage by cystathionase to give cysteine and α-ketobutyrate. Cysteine can readily dimerize to form cystine via the oxidation of the thiol side chain residues to give a disulfide covalent bond. The formation of such cystine links between cysteine residues in proteins is an important part of the stabilization of the three-dimensional structure of proteins.[1]

An investigation into cysteine and cystine levels in normal and malignant cells with a relationship to γ-cystathionase levels and tumor sensitivity to L-cysteine and cystine depletion has been reported.[2] The toxicity of human neuronal cell lines to cysteine and its metabolites has been investigated.[3,4] Cysteine can inhibit the activity of enzymes such as lecithin-cholesterol acyltransferase.[5]

A protocol for the use of cysteine in pulse-chase experiments to study protein expression from an inducible promoter has been reported.[6]

Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions

This product is soluble in water (25 mg/ml), yielding a clear, colorless solution.

Storage/Stability

Stock solutions of cysteine are relatively stable at acidic pH, especially in degassed solutions. Aqueous solutions of cysteine oxidize readily in air to give cystine at neutral or basic pH.[7]

References

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4. Parsons, R. B., et al., In vitro effect of the cysteine metabolites homocysteic acid, homocysteine and cysteic acid upon human neuronal cell lines. Neurotoxicology, **19(4-5)**, 599-603 (1998).
5. Albers, J. J., et al., Isolation, characterization, and assay of lecithin-cholesterol acyltransferase. Methods Enzymol., **129**, 763-783 (1986).
6. Molecular Cloning: A Laboratory Manual, 3rd ed., Sambrook, J. and Russell, D. W., CSHL Press (Cold Spring Harbor, NY: 2001), pp. 15.18-15.19.
7. Data for Biochemical Research, 3rd ed., Dawson, R. M. C., et al., Oxford University Press (New York, NY: 1986), pp. 12-13.

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