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- Trockeneiszuschlag
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- Expressversand

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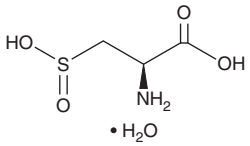
PRODUCT INFORMATION

L-Cysteinesulfinic Acid (hydrate)

Item No. 29597

CAS Registry No.: 207121-48-0
Formal Name: 3-sulfino-L-alanine, monohydrate
Synonym: L-CSA
MF: $C_3H_7NO_4S \bullet H_2O$
FW: 171.2
Purity: ≥95%
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥2 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

L-Cysteinesulfinic acid (hydrate) is supplied as a solid. A stock solution may be made by dissolving the L-cysteinesulfinic acid (hydrate) in the solvent of choice, which should be purged with an inert gas. L-Cysteinesulfinic acid (hydrate) is soluble in the organic solvent DMSO at a concentration of approximately 10 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 L-cysteinesulfinic acid (hydrate) can be prepared by directly dissolving the solid in aqueous buffers. The solubility of L-cysteinesulfinic acid (hydrate) in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

L-Cysteinesulfinic acid is an excitatory amino acid and agonist of metabotropic glutamate receptors (mGluRs).[1,2] It increases intracellular inositol phosphate levels in CHO cells expressing mGluR1, mGluR5, or mGluR8 (EC_{50}s = 120, 30, and 110 µM, respectively) and inhibits forskolin-induced cAMP production in CHO cells expressing mGluR2 or mGluR6 and hamster kidney cells expressing mGluR4 (EC_{50}s = 100, 100, and 2,000 µM, respectively).[2] It selectively binds to mGluR1α (K_i = 3,510 nM) over adrenergic, dopamine, histamine, muscarinic, nicotinic, or serotonin receptors (K_is = >10,000 nM for all). L-Cysteinesulfinic acid (1 mM) decreases mean arterial blood pressure and heart rate in rats when microinjected into the nucleus tractus solitarius (NTS).[1] L-Cysteinesulfinic acid can be formed *via* oxidation of L-cysteine by reactive oxygen species (ROS), and conversion of cysteine to L-cysteinesulfinic acid in cysteine-containing peptide probes has been used to measure oxidative stress.[3]

References

1. Takemoto, Y. Cardiovascular actions of L-cysteine and L-cysteine sulfinic acid in the nucleus tractus solitarius of the rat. *Amino Acids* **46(7)**, 1707-1713 (2014).
2. Shi, Q., Savage, J.E., Hufeisen, S.J., *et al*. L-homocysteine sulfinic acid and other acidic homocysteine derivatives are potent and selective metabotropic glutamate receptor agonists. *J. Pharmacol. Exp. Ther.* **305(1)**, 131-142 (2003).
3. Keng, C.-L., Lin, Y.-C., Tseng, W.-L., *et al*. Design of peptide-based probes for the microscale detection of reactive oxygen species. *Anal. Chem.* **89(20)**, 10883-10888 (2017).

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