

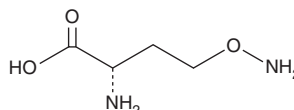
PRODUCT INFORMATION



L-Canaline

Item No. 9002357

CAS Registry No.: 496-93-5
Formal Name: O-amino-L-homoserine
MF: $C_4H_{10}N_2O_3$
FW: 134.1
Purity: $\geq 95\%$
Stability: ≥ 2 years at -20°C
Supplied as: A crystalline solid



Laboratory Procedures

For long term storage, we suggest that L-canaline be stored as supplied at -20°C . It should be stable for at least two years.

L-Canaline is supplied as a crystalline solid. A stock solution may be made by dissolving the L-canaline in the solvent of choice. L-Canaline is soluble in organic solvents such as DMSO which should be purged with an inert gas. The solubility of L-canaline in this solvent is approximately 1 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-canaline can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of L-canaline 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-Canaline is an aminooxy analog of ornithine that irreversibly inhibits aminotransferases (transaminases), including ornithine aminotransferase ($K_i = 2 \mu\text{M}$).¹⁻³ It forms oximes with α -keto acids and aldehydes, most notably with pyridoxal phosphate, an essential cofactor of aminotransferases.³ L-Canaline is naturally found in plants, including legumes, and is involved in the metabolism of L-canavanine, an aminooxy analog of arginine.⁴ It is cytotoxic to a range of organisms, including bacteria, insects, and parasites.^{2,4,5}

References

1. Bolkenius, F.N., Knödgen, B., and Seiler, N. DL-Canaline and 5-fluoromethylornithine. Comparison of two inactivators of ornithine aminotransferase. *Biochem. J.* **268**, 409-414 (1990).
2. Heilbronn, J., Wilson, J., and Berger, B.J. Tyrosine aminotransferase catalyzes the final step of methionine recycling in *Klebsiella pneumoniae*. *J. Bacteriol.* **181**(6), 1739-1747 (1999).
3. Worthen, D.R., Ratliff, D.K., Rosenthal, G.A., et al. Structure-activity studies of L-canaline-mediated inhibition of porcine alanine aminotransferase. *Chem. Res. Toxicol.* **9**(8), 1293-1297 (1996).
4. Rosenthal, G.A. L-Canavanine Transport and Utilization in Developing Jack Bean, *Canavalia ensiformis* (L.) DC. [Leguminosae]. *Plant Physiol.* **69**, 1066-1069 (1982).
5. Berger, B.J. Antimalarial activities of aminooxy compounds. *Antimicrob. Agents Chemother.* **44**(9), 2540-2542 (2000).

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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