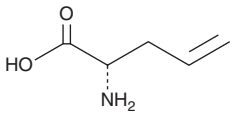
PRODUCT INFORMATION

L-Allylglycine

Item No. 23348

CAS Registry No.: 16338-48-0
Formal Name: 2S-amino-4-pentenoic acid
MF: $C_5H_9NO_2$
FW: 115.1
Purity: ≥95%
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

L-Allylglycine is supplied as a crystalline solid. Aqueous solutions of L-allylglycine can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of L-allylglycine 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-Allylglycine is an amino acid derivative that reduces glutamate decarboxylase (GAD) activity by 60% when administered at a dose of 39.8 µmol/g per hour *ex vivo* in mouse brain preparations.[1] L-Allylglycine (1.2 mmol/kg, i.p.) induces convulsions and decreases GABA concentration throughout the cerebellum, pons, medulla, striatum, cortex, and hippocampus in mice.[2] Chronic administration (3.2 µg/0.5 µl per hour for 13 days) of L-allylglycine in rats increases locomotor activity in an open field test and impairs attention in the 5-choice serial reaction time task (5CSRTT).[3] *In vitro*, L-allylglycine inhibits GAD only when used at high concentrations (1-80 mM). The more potent *in vivo* activity can be attributed to metabolic conversion of L-allylglycine to 2-keto-4-pentanoic acid, a more potent convulsant and GAD inhibitor.

References

1. Orlowski, M. Reingold, D.F., and Stanley, M.E. D-and L-stereoisomers of allylglycine: Convulsive action and inhibition of brain L-glutamate decarboxylase. *J. Neurochem.* **28(2)**, 349-353 (1977).
2. Horton, R.W., Chapman, A.G., and Meldrum, B.S. Regional changes in cerebral GABA concentration and convulsions produced by D and by L-allylglycine. *J. Neurochem.* **30(6)**, 1501-1504 (1978).
3. Paine, T.A., Cooke, E.K., and Lowes, D.C. Effects of chronic inhibition of GABA synthesis on attention and impulse control. *Pharmacol. Biochem. Behav.* **135**, 97-104 (2015).

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