L-AMINO ACID OXIDASE
from Crotalus adamanteus

Product Number **A9253 AND A9378**

ProductInformation

CAS #: 9000-89-9
E.C. NO. 1.4.3.2

Product Description

A9253 (crude venom) yellow powder, minimum 0.3 U/mg solid
A9378 (more purified) yellow to amber suspension (prepared according to Wellner & Meister to the point just prior to crystallization)[2]; minimum, 4 U/mg protein

Structure: Molecular Weight is 130,000 d; this is a glycoprotein containing about 2-5% carbohydrate, including sialic acid. It consists of two different subunits of approximately 70,000. There are two FAD molecules per molecule of holoenzyme. Electrophoresis indicated the presence of at least three isozymes, and perhaps as many as 20.[3,6]

Optimum pH: approximately 7.5[2]; Sigma assays the enzyme at pH 6.5, based on literature references.[6,7,8] (The protocol is available on request from Technical Service.)

"LAAO" is a flavoprotein that catalyzes the oxidative deamination of L-amino acids to the corresponding α-keto acids. It is found in microorganisms and in animal tissue, especially in kidney and liver. It occurs also in many snake venoms.[1]

Preparation Instructions

These products will dissolve at 1 mg protein/mL in water to give clear solutions. The enzyme is stable in solution for months when refrigerated (0-4 °C). Substrate and absence of oxygen protect activity at elevated temperatures. The enzyme may be reversibly inactivated by incubation in phosphate buffer pH 7.5 at 38 °C[4]. Freezing the aqueous solution results in loss of activity, which may be reversible.[5,6] One assay method uses Tris-HCl buffer, pH 7.5 at 37° C, with L-phenylalanine as substrate, catalase to prevent the α-keto acid from being destroyed by hydrogen peroxide.[6]

Storage/Stability

A9253 should be stored dry and frozen and has a shelf-life of three years. The suspension A9378 should NOT be frozen, but stored at 2-8 °C and has a shelf-life of two years.

References

1. *Merck Index*, 12th ed., #435 (1996).
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4. Wellner, D. *Biochemistry*, 5 1585 (1966).
5. Curti, B. et al., *J. Biol. Chem*., 243, 2306 (1968).
6. Wellner, D., *Methods In Enzymology*, XVIIB, 593-600 (1971).
7. Knox, W.E. and Pitt, B.M., *J Biol. Chem.*, 225, 675-688 (1957).
8. La Du and Michael, The Virginian. *A Journal of the VA State Soc. of the American Med. Techs*, Vol. 3 (2), pp. 4-65.

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