

Apo D-Amino Acid Oxidase, Enzyme Activity

Catalog	Unit
TBP0056-100U	100 U
TBP0056-500U	500 U

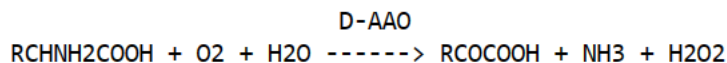
Product Details

Form: Freeze-dried powder

Solubility: Distilled water or dilute buffer

Stability: Store at -20° C (-4° F)

Activity: 25-30 U/mg protein



Protein: 90%

Contaminants: Free of FAD and Alkaline Phosphatase

Unit Definition

The amount of enzyme that will deaminate by oxidation one micromole of D-alanine to pyruvate per minute at pH 8.3, at 37°C in the presence of catalase.

Assay Method

The assay is based on the method described by Bergmeyer. The decrease in the absorbance at 340 nm, due to the oxidation of NADH, is a measure of D-amino acid oxidase activity.

Applications

The D isomers of alanine, methionine, valine, isoleucine, phenylalanine and proline serve as good substrates while the L isomers do not react at all. The enzyme is a flavoprotein. D-amino acid oxidase from porcine kidney has been extensively studied. It has a monomeric molecular weight of 38,000-39,000.

D-Amino acid oxidase (EC 1.4.3.3) has several possible applications such as the determination of D-amino acids, the separation of natural L- amino acid isomers from a racemic mixture and in the preparation of keto acids. The usefulness and application of D-amino acid oxidase can be significantly increased if it is available in an immobilized form.

Reagents

- 0.2 M Tris-HCl buffer, pH 8.3.
- 0.02 M D-Alanine (17.8 mg/ml) in buffer.
- 0.008 M NADH disodium salt (5 mg/ml) in buffer.
- Catalase (200 U/ml) in buffer. Prepare fresh.
- Lactate dehydrogenase (LDH) (200 U/ml) in buffer. Prepare fresh.
- FAD (Prepare 1 mg/ml solution)
- D-Amino acid oxidase solution. Dilute in buffer to give a concentration of 0.1-0.5 U/ml. Must be prepared fresh prior to assay.

Calculation

$$\text{Activity (U/mg)} = \frac{(\Delta E_{340\text{nm}}/\text{min})(\text{Total Vol.})(\text{Enz. Diln.})}{(6.22)(\text{Enz. Vol.})(\text{mg Enz./ml})}$$

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