Creative Enzymes®

Native Plant origin Diamine Oxidase

Cat. No. NATE-0188

Lot. No. (See product label)

Introduction

Description DAO is an enzyme (EC 1.4.3.22) composed of 642 amino acids. It is a homo-dimer of two identical subunits. Each subunit contains 2 disulfide bounds and a free cysteine with a theoretical molecular weight of 72,878 daltons per unit (a nominal molecular weight of 73 ±3 kDa is used for analytical purposes). DAO active site contains copper (II) and phenylalanine quinone: 2,4,5-trihydroxyphenylalanine quinone (TPQ). The products of the CuAO-catalysed oxidative deamination of amines such as histamine are various aldehydes, ammonia, and hydrogen peroxide. The copper is essential for activity and is believed to play a redox role in substrate turnover. Plant DAOs (histaminase) differs from the mammalian and prokaryotic enzymes in a number of peculiar features, mainly high turnover rate of catalysis, high binding affinity for histamine, and high chemical stability. The native Pisum sativum Diamine Oxidase (EC 1.4.3.22) can also be found in different organisms such as bacteria, yeasts, mushrooms, various plants, and animals. A review article by R. Medda, et al. in 1995 describes in detail research in this area.

Applications DAO catalyzes the oxidation of diamines (and some monoamines) to produce the aldehyde, ammonia, and H2O2.

Synonyms EC 1.4.3.6; 9001-53-0; Amine:oxygen oxidoreductase (deaminating) (pyridoxal-containing); Diamine Oxidase; Amine oxidase (copper-containing)

Product Information

Source Pisum sativum

Form Tan Liquid

EC Number EC 1.4.3.6

CAS No. 9001-53-0

Unit Definition One DAO unit will oxidase 1.0 µmol putrescine per hour at pH 7.2 at 37°C.