Creative Enzymes®

Native Streptomyces sp. Cholesterol Oxidase

Cat. No. NATE-0128

Lot. No. (See product label)

Introduction

Description	Cholesterol oxidase (CHOD) is a monomeric flavoprotein containing FAD that catalyzes the first step in cholesterol catabolism. This bifunctional enzyme oxidizes cholesterol to cholest-5-en-3-one in an FAD-requiring step, which is then isomerized to cholest-4-en-3-one with the release of H2O2.
Applications	Cholesterol oxidase from Streptomyces has been used in a study to assess the relationship between the micellar structure of model bile and the activity of esterase. Cholesterol oxidase from Streptomyces has also been used in a study to investigate the effects of sphingomyelin degradation on cell cholesterol oxidizability and steady-state distribution between the cell surface and the cell interior. Cholesterol oxidase is used to determine serum cholesterol. The enzyme also finds application in the microanalysis of steroids in food samples and in distinguishing 3-ketosteroids from 3β-hydroxysteroids. Transgenic plants expressing cholesterol oxidase are being investigated in the fight against the cotton boll weevil. CHOD has also been used as a molecular probe to elucidate cellular membrane structures.
Synonyms	EC 1.1.3.6, cholesterol-O2 oxidoreductase; 3β-hydroxy steroid oxidoreductase; 3β-hydroxysteroid:oxygen oxidoreductase; 9028-76-6

Product Information

Source	Streptomyces sp.
Form	Lyophilized powder containing bovine serum albumin and sugars as stabilizers
EC Number	EC 1.1.3.6
CAS No.	9028-76-6
Molecular Weight	mol wt ~34 kDa
Activity	> 20 units/mg protein
Isoelectric point	5.1 ± 0.1 and 5.4 ± 0.1
pH Stability	pH 5.0 – 10.0 (25°C, 20hr)
Optimum pH	6.5 − 7.0
Thermal stability	Below 45°C (pH 7.0, 15min)
Optimum temperature	45 – 50°C
Michaelis Constant	4.3 x 10^{-5}M (Cholesterol)
Inhibitors	Ionic detergents, Hg++, Ag+
Buffer	50 mM potassium phosphate buffer, pH 7.0: soluble (Cold)
Unit Definition	One unit will convert 1.0 µmole of cholesterol to 4-cholesten-3-one per min at pH 7.5 at 25°C. Note: 4-cholesten-3-one may undergo isomerization.

Storage and Shipping Information

Storage	−20°C