

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 3 β -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; 3 β -hydroxy steroid oxidoreductase; 3 β -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 \pm 0.1 and 5.4 \pm 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 10⁻⁵M (Cholesterol)

Inhibitors Ionic detergents, Hg⁺⁺, Ag⁺

Buffer 50 mM potassium phosphate buffer, pH 7.0: soluble (Cold)

Unit One unit will convert 1.0 μ mole of cholesterol to 4-cholesten-3-one per min at pH 7.5 at 25°C. Note: 4-

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Definition**Storage and Shipping Information**

Storage -20°C