

Native *Pediococcus* sp. L- α -glycerophosphate oxidase

Cat. No. DIA-199

Lot. No. (See product label)

Introduction

Description

In enzymology, a glycerol-3-phosphate oxidase (EC 1.1.3.21) is an enzyme that catalyzes the chemical reaction: sn-glycerol 3-phosphate + O₂ \leftrightarrow glycerone phosphate + H₂O₂. Thus, the two substrates of this enzyme are sn-glycerol 3-phosphate and O₂, whereas its two products are glycerone phosphate and H₂O₂. This enzyme belongs to the family of oxidoreductases, specifically those acting on the CH-OH group of donor with oxygen as acceptor. This enzyme participates in glycerophospholipid metabolism. It employs one cofactor, FAD.

Applications

This enzyme is useful for enzymatic determination of triglyceride when coupled with lipoprotein lipase and glycerokinase in clinical analysis.

Synonyms

L- α -glycerophosphate oxidase; sn-glycerol-3-phosphate: oxygen 2-oxidoreductase; glycerol phosphate oxidase; glycerol-1-phosphate oxidase; glycerol phosphate oxidase; L-alpha-glycerophosphate oxidase; alpha-glycerophosphate oxidase; L-alpha-glycerol-3-phosphate oxidase; EC 1.1.3.21

Product Information

Source

Pediococcus sp.

Appearance

Yellowish amorphous powder, lyophilized

EC Number

EC 1.1.3.21

CAS No.

9046-28-0

Molecular Weight

approx. 76 kDa (by gel filtration)

Activity

Grade III 40 U/mg-solid or more (containing approx. 40% of stabilizers)

Contaminants

Lactate oxidase < 1.0 \times 10⁻³%

Isoelectric point

4.1 \pm 0.1

pH Stability

pH 6.5-8.5 (25°C, 20hr)

Optimum pH

8.0-8.5

Thermal stability

below 40°C (pH 7.0, 15min)

Optimum temperature

35-40°C

Michaelis Constant

3.2 \times 10⁻³M (L- α -Glycerophosphate), 6.8 \times 10⁻³M (D, L-form)

Specificity

The enzyme has the highest specificity for L-form of α -glycerophosphate.

Inhibitors

Ionic detergents (SDS, LBS, etc.), Hg⁺⁺, Ag⁺

Stabilizers

Sucrose, FAD

Storage and Shipping Information

Stability

Stable at -20°C for at least one year (A decrease in activity of ca. 10% may occur at

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Stable at 20 °C for at least one year (A decrease in activity of ca. 10% may occur at 5°C within 6 months.)