

Native Microorganism P-hydroxybenzoate hydroxylase

Cat. No. DIA-203

Lot. No. (See product label)

Introduction

Description In enzymology, a 4-hydroxybenzoate 3-monooxygenase (EC 1.14.13.2) is an enzyme that catalyzes the chemical reaction: 4-hydroxybenzoate + NADPH + H⁺ + O₂ ⇌ protocatechuate + NADP⁺ + H₂O. The 4 substrates of this enzyme are 4-hydroxybenzoate, NADPH, H⁺, and O₂, whereas its 3 products are protocatechuate, NADP⁺, and H₂O. This enzyme belongs to the family of oxidoreductases, specifically those acting on paired donors, with O₂ as oxidant and incorporation or reduction of oxygen. The oxygen incorporated need not be derived from O₂ with NADH or NADPH as one donor, and incorporation of one atom of oxygen into the other donor. This enzyme participates in benzoate degradation via hydroxylation and 2,4-dichlorobenzoate degradation. It employs one cofactor, FAD.

Applications This enzyme is useful for enzymatic determination of choline esterase when coupled with protocatechuate 3, 4-dioxygenase.

Synonyms 4-hydroxybenzoate; NADPH: oxygen oxidoreductase (3-hydroxylating); p-hydroxybenzoate hydrolyase; p-hydroxybenzoate hydroxylase; 4-hydroxybenzoate 3-hydroxylase; 4-hydroxybenzoate monooxygenase; 4-hydroxybenzoic hydroxylase; p-hydroxybenzoate-3-hydroxylase; p-hydroxybenzoic acid hydrolase; p-hydroxybenzoic acid hydroxylase; p-hydroxybenzoic hydroxylase; EC 1.14.13.2

Product Information

Source	Microorganism
Appearance	Yellowish amorphous powder, lyophilized
EC Number	EC 1.14.13.2
CAS No.	9059-23-8
Molecular Weight	55 kDa~60 kDa
Activity	Grade III 20U/mg-solid or more (containing approx. 40% of stabilizers)
Contaminants	NADPH oxidase < 1.0×10 ⁻¹ %
pH Stability	pH 5.0-7.5 (25°C, 72hr)
Optimum pH	7.7-7.9
Thermal stability	below 40°C (pH 6.0, 15min)
Optimum temperature	35°C
Michaelis Constant	2.0×10 ⁻⁵ M (p-Hydroxybenzoate), 4.0×10 ⁻⁵ M (NADPH)
Structure	One mol of FAD per mol of enzyme
Inhibitors	Ag ⁺ , Hg ⁺⁺ , PCMB, SDS
Stabilizers	Sugars, FAD

Storage and Shipping Information

Stability Stable at -20°C for at least one year