

spheroidene monooxygenase

Cat. No. EXWM-0952

Lot. No. (See product label)

Introduction

Description

The enzyme is involved in spheroidenone biosynthesis and in 2,2'-dioxospirilloxanthin biosynthesis. The enzyme from *Rhodobacter sphaeroides* contains heme at its active site.

Synonyms

CrtA; acyclic carotenoid 2-ketolase; spirilloxanthin monooxygenase; 2-oxo-spirilloxanthin monooxygenase

Product Information

Form

Liquid or lyophilized powder

EC Number

EC 1.14.15.9

Reaction

(1) spheroidene + 2 reduced ferredoxin [iron-sulfur] cluster + 2 O₂ = spheroiden-2-one + 2 oxidized ferredoxin [iron-sulfur] cluster + 3 H₂O (overall reaction); (1a) spheroidene + reduced ferredoxin [iron-sulfur] cluster + O₂ + 2H⁺ = 2-hydroxyspheroidene + oxidized ferredoxin [iron-sulfur] cluster + H₂O; (1b) 2-hydroxyspheroidene + reduced ferredoxin [iron-sulfur] cluster + O₂ + 2H⁺ = 2,2-dihydroxyspheroidene + oxidized ferredoxin [iron-sulfur] cluster + H₂O; (1c) 2,2-dihydroxyspheroidene = spheroiden-2-one + H₂O (spontaneous); (2) spirilloxanthin + 2 reduced ferredoxin [iron-sulfur] cluster + 2 O₂ = 2-oxospirilloxanthin + 2 oxidized ferredoxin [iron-sulfur] cluster + 3 H₂O (overall reaction); (2a) spirilloxanthin + reduced ferredoxin [iron-sulfur] cluster + O₂ + 2H⁺ = 2-hydroxyspirilloxanthin + oxidized ferredoxin [iron-sulfur] cluster + H₂O; (2b) 2-hydroxyspirilloxanthin + reduced ferredoxin [iron-sulfur] cluster + O₂ + 2H⁺ = 2,2-dihydroxyspirilloxanthin + oxidized ferredoxin [iron-sulfur] cluster + H₂O; (2c) 2,2-dihydroxyspirilloxanthin = 2-oxospirilloxanthin + H₂O (spontaneous); (3) 2-oxospirilloxanthin + 2 reduced ferredoxin [iron-sulfur] cluster + 2 O₂ = 2,2'-dioxospirilloxanthin + 2 oxidized ferredoxin [iron-sulfur] cluster + 3 H₂O (overall reaction); (3a) 2-oxospirilloxanthin + reduced ferredoxin [iron-sulfur] cluster + O₂ + 2H⁺ = 2'-hydroxy-2-oxospirilloxanthin + oxidized ferredoxin [iron-sulfur] cluster + H₂O; (3b) 2'-hydroxy-2-oxospirilloxanthin + reduced ferredoxin [iron-sulfur] cluster + O₂ + 2H⁺ = 2',2'-dihydroxy-2-oxospirilloxanthin + oxidized ferredoxin [iron-sulfur] cluster + H₂O; (3c) 2',2'-dihydroxy-2-oxospirilloxanthin = 2,2'-dioxospirilloxanthin + H₂O (spontaneous);

Notes

This item requires custom production and lead time is between 5-9 weeks. We can custom produce according to your specifications.

Storage and Shipping Information

Storage

Store it at +4 °C for short term. For long term storage, store it at -20 °C~-80 °C.