

## 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 O<sub>2</sub> = spheroiden-2-one + 2 oxidized ferredoxin [iron-sulfur] cluster + 3 H<sub>2</sub>O (overall reaction); (1a) spheroidene + reduced ferredoxin [iron-sulfur] cluster + O<sub>2</sub> + 2H<sup>+</sup> = 2-hydroxyspheroidene + oxidized ferredoxin [iron-sulfur] cluster + H<sub>2</sub>O; (1b) 2-hydroxyspheroidene + reduced ferredoxin [iron-sulfur] cluster + O<sub>2</sub> + 2H<sup>+</sup> = 2,2-dihydroxyspheroidene + oxidized ferredoxin [iron-sulfur] cluster + H<sub>2</sub>O; (1c) 2,2-dihydroxyspheroidene = spheroiden-2-one + H<sub>2</sub>O (spontaneous); (2) spirilloxanthin + 2 reduced ferredoxin [iron-sulfur] cluster + 2 O<sub>2</sub> = 2-oxospirilloxanthin + 2 oxidized ferredoxin [iron-sulfur] cluster + 3 H<sub>2</sub>O (overall reaction); (2a) spirilloxanthin + reduced ferredoxin [iron-sulfur] cluster + O<sub>2</sub> + 2H<sup>+</sup> = 2-hydroxyspirilloxanthin + oxidized ferredoxin [iron-sulfur] cluster + H<sub>2</sub>O; (2b) 2-hydroxyspirilloxanthin + reduced ferredoxin [iron-sulfur] cluster + O<sub>2</sub> + 2H<sup>+</sup> = 2,2-dihydroxyspirilloxanthin + oxidized ferredoxin [iron-sulfur] cluster + H<sub>2</sub>O; (2c) 2,2-dihydroxyspirilloxanthin = 2-oxospirilloxanthin + H<sub>2</sub>O (spontaneous); (3) 2-oxospirilloxanthin + 2 reduced ferredoxin [iron-sulfur] cluster + 2 O<sub>2</sub> = 2,2'-dioxospirilloxanthin + 2 oxidized ferredoxin [iron-sulfur] cluster + 3 H<sub>2</sub>O (overall reaction); (3a) 2-oxospirilloxanthin + reduced ferredoxin [iron-sulfur] cluster + O<sub>2</sub> + 2H<sup>+</sup> = 2'-hydroxy-2-oxospirilloxanthin + oxidized ferredoxin [iron-sulfur] cluster + H<sub>2</sub>O; (3b) 2'-hydroxy-2-oxospirilloxanthin + reduced ferredoxin [iron-sulfur] cluster + O<sub>2</sub> + 2H<sup>+</sup> = 2',2'-dihydroxy-2-oxospirilloxanthin + oxidized ferredoxin [iron-sulfur] cluster + H<sub>2</sub>O; (3c) 2',2'-dihydroxy-2-oxospirilloxanthin = 2,2'-dioxospirilloxanthin + H<sub>2</sub>O (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.