Creative Enzymes®

chlorophyllide a reductase

Cat. No. EXWM-1396

Lot. No. (See product label)

Introduction

Description	The enzyme, together with EC 1.1.1.396, bacteriochlorophyllide-a dehydrogenase, and EC 4.2.1.165, chlorophyllide-a 31-hydratase, is involved in the conversion of chlorophyllide a to bacteriochlorophyllide a. These enzymes can act in multiple orders, resulting in the formation of different intermediates, but the final product of the cumulative action of the three enzymes is always bacteriochlorophyllide a. This enzyme catalyses a trans-reduction of the B-ring; the product has the (7R,8R)-configuration. In addition, the enzyme has a latent activity of EC 1.3.7.13, 3,8-divinyl protochlorophyllide a 8-vinyl-reductase (ferredoxin). The enzyme contains a [4Fe-4S] cluster, and structurally resembles the Fe protein/MoFe protein complex of nitrogenase (EC 1.18.6.1), which catalyses an ATP-driven reduction.
Synonyms	bchX (gene name); bchY (gene name); bchZ (gene name); COR

Product Information

Form	Liquid or lyophilized powder
EC Number	EC 1.3.7.15
Reaction	(1) 3-deacetyl-3-vinylbacteriochlorophyllide a + 2 oxidized ferredoxin [iron-sulfur] cluster + ADP + phosphate = chlorophyllide a + 2 reduced ferredoxin [iron-sulfur] cluster + ATP + H2O + 2 H+; (2) bacteriochlorophyllide a + 2 oxidized ferredoxin [iron-sulfur] cluster + ADP + phosphate = 3-acetyl-3-devinylchlorophyllide a + 2 reduced ferredoxin [iron-sulfur] cluster + ATP + H2O + 2 H+; (3) 3-deacetyl-3-(1-hydroxyethyl)bacteriochlorophyllide a + 2 oxidized ferredoxin [iron-sulfur] cluster + ADP + phosphate = 3-devinyl-3-(1-hydroxyethyl)chlorophyllide a + 2 reduced ferredoxin [iron-sulfur] cluster + ATP + H2O + 2 H+
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 ℃ for short term. For long term storage, store it at -20 ℃~-80 ℃.