Creative Enzymes®

4-hydroxy-3-methylbut-2-en-1-yl diphosphate reductase

Cat. No. EXWM-1099

Lot. No. (See product label)

Introduction

Description An iron-sulfur protein that contains either a [3Fe-4S] or a [4Fe-4S] cluster. This enzyme forms a system with a ferredoxin or a flavodoxin and an NAD(P)H-dependent reductase. This is the last enzyme in the non-mevalonate pathway for isoprenoid biosynthesis. This pathway, also known as the 1-deoxy-D-xylulose 5-phosphate (DOXP) or as the 2-C-methyl-D-erythritol-4-phosphate (MEP) pathway, is found in most bacteria and in plant chloroplasts. The enzyme acts in the reverse direction, producing a 5:1 mixture of isopentenyl diphosphate and dimethylallyl diphosphate.

Synonyms isopentenyl-diphosphate:NADP+ oxidoreductase; LytB; (E)-4-hydroxy-3-methylbut-2-en-1-yl diphosphate reductase; HMBPP reductase; IspH; LytB/IspH

Product Information

Form Liquid or lyophilized powder

EC Number EC 1.17.7.4

CAS No. 512789-14-9

Reaction (1) isopentenyl diphosphate + 2 oxidized ferredoxin [iron-sulfur] cluster + H2O = (E)-4-hydroxy-3-methylbut-2-en-1-yl diphosphate + 2 reduced ferredoxin [iron-sulfur] cluster + 2 H+; (2) dimethylallyl diphosphate + 2 oxidized ferredoxin [iron-sulfur] cluster + H2O = (E)-4-hydroxy-3-methylbut-2-en-1-yl diphosphate + 2 reduced ferredoxin [iron-sulfur] cluster + 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 ℃.