Creative Enzymes®

acyl-lipid (n+3)-(Z)-desaturase (ferredoxin)

Cat. No. EXWM-0986

Lot. No. (See product label)

Introduction

Description

This plastidial enzyme is able to insert a cis double bond in monounsaturated fatty acids incorporated into glycerolipids. The enzyme introduces the new bond at a position 3 carbons away from the existing double bond, towards the methyl end of the fatty acid. The native substrates are oleoyl (18:1 Δ9) and (Z)-hexadec-7-enoyl (16:1 Δ7) groups attached to either position of the glycerol backbone in glycerolipids, resulting in the introduction of the second double bond at positions 12 and 10, respectively This prompted the suggestion that this is an ω6 desaturase. However, when acting on palmitoleoyl groups(16:1 Δ9), the enzyme introduces the second double bond at position 12 (ω4), indicating it is an (n+3) desaturase. cf. EC 1.14.19.34, acyl-lipid (9+3)-(E)-desaturase.

Synonyms

acyl-lipid ω6-desaturase (ferredoxin); oleate desaturase (ambiguous); linoleate synthase (ambiguous); oleoyl-CoA desaturase (ambiguous); oleoylphosphatidylcholine desaturase (ambiguous); phosphatidylcholine desaturase (ambiguous); FAD6 (gene name)

Product Information

Form

Liquid or lyophilized powder

EC Number

EC 1.14.19.23

Reaction

an oleoyl-[glycerolipid] + 2 reduced ferredoxin [iron-sulfur] cluster + O2 + 2 H+ = a linoleoyl-[glycerolipid] + 2 oxidized ferredoxin [iron-sulfur] cluster + 2 H2O

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 ℃.