

## sn-2 acyl-lipid $\omega$ -3 desaturase (ferredoxin)

Cat. No. EXWM-0999

Lot. No. (See product label)

### Introduction

#### Description

This plastidial enzyme desaturates 16:2 fatty acids attached to the sn-2 position of glycerolipids to 16:3 fatty acids, and converts 18:2 to 18:3 in both the sn-1 and sn-2 positions. It acts on all 16:2- or 18:2-containing chloroplast membrane lipids, including phosphatidylglycerol, monogalactosyldiacylglycerol, digalactosyldiacylglycerol, and sulfoquinovosyldiacylglycerol. The enzyme introduces a cis double bond at a location 3 carbons away from the methyl end of the fatty acid. The distance from the carboxylic acid end of the molecule does not affect the location of the new double bond. cf. EC 1.14.19.25, acyl-lipid  $\omega$ -3 desaturase (cytochrome b5) and EC 1.14.19.36, sn-1 acyl-lipid  $\omega$ -3 desaturase (ferredoxin).

#### Synonyms

FAD7; FAD8

### Product Information

#### Form

Liquid or lyophilized powder

#### EC Number

EC 1.14.19.35

#### Reaction

(1) a (7Z,10Z)-hexadeca-7,10-dienoyl-[glycerolipid] + 2 reduced ferredoxin [iron-sulfur] cluster + O<sub>2</sub> + 2 H<sup>+</sup> = a (7Z,10Z,13Z)-hexadeca-7,10,13-trienoyl-[glycerolipid] + 2 oxidized ferredoxin [iron-sulfur] cluster + 2 H<sub>2</sub>O; (2) a linoleoyl-[glycerolipid] + 2 reduced ferredoxin [iron-sulfur] cluster + O<sub>2</sub> + 2 H<sup>+</sup> = an  $\alpha$ -linolenoyl-[glycerolipid] + 2 oxidized ferredoxin [iron-sulfur] cluster + 2 H<sub>2</sub>O

#### 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.