Creative Enzymes®

# acyl-lipid (11-3)-desaturase

*Cat. No. EXWM-1004*

*Lot. No.* (See product label)

## Introduction

***Description***

The enzyme, characterized from the protist Euglena gracilis and the microalga Rebecca salina, introduces a cis double bond at the 8-position in 20-carbon fatty acids that are incorporated into a glycerolipid and have an existing Δ11 desaturation. The enzyme is a front-end desaturase, introducing the new double bond between the pre-existing double bond and the carboxyl-end of the fatty acid. It contains a cytochrome b5 domain that acts as the direct electron donor to the active site of the desaturase, and does not require an external cytochrome. Involved in alternative pathways for the biosynthesis of the polyunsaturated fatty acids arachidonate and icosapentaenoate.

***Synonyms***

acyl-lipid 8-desaturase; Δ8 fatty acid desaturase; Δ8-desaturase; Δ8-fatty-acid desaturase; efd1 (gene name); D8Des (gene name); phytosphinganine,hydrogen donor:oxygen Δ8-oxidoreductase (incorrect); SLD

## Product Information

***Form***

Liquid or lyophilized powder

***EC Number***

EC 1.14.19.4

***Reaction***

(1) an (11Z,14Z)-icosa-11,14-dienoyl-[glycerolipid] + 2 ferrocytochrome b5 + O2 + 2 H+ = an (8Z,11Z,14Z)-icosa-8,11,14-trienoyl-[glycerolipid] + 2 ferricytochrome b5 + 2 H2O; (2) an (11Z,14Z,17Z)-icosa-11,14,17-trienoyl-[glycerolipid] + 2 ferrocytochrome b5 + O2 + 2 H+ = an (8Z,11Z,14Z,17Z)-icosa-8,11,14,17-tetraenoyl-[glycerolipid] + 2 ferricytochrome b5 + 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 ℃.