

## pheophorbide a oxygenase

Cat. No. EXWM-0942

Lot. No. (See product label)

### Introduction

#### Description

This enzyme catalyses a key reaction in chlorophyll degradation, which occurs during leaf senescence and fruit ripening in higher plants. The enzyme from *Arabidopsis* contains a Rieske-type iron-sulfur cluster and requires reduced ferredoxin, which is generated either by NADPH through the pentose-phosphate pathway or by the action of photosystem I. While still attached to this enzyme, the product is rapidly converted into primary fluorescent chlorophyll catabolite by the action of EC 1.3.7.12, red chlorophyll catabolite reductase. Pheophorbide b acts as an inhibitor. In <sup>18</sup>O<sub>2</sub> labelling experiments, only the aldehyde oxygen is labelled, suggesting that the other oxygen atom may originate from H<sub>2</sub>O.

#### Synonyms

pheide a monooxygenase; pheide a oxygenase; PaO; PAO

### Product Information

#### Form

Liquid or lyophilized powder

#### EC Number

EC 1.14.15.17

#### Reaction

pheophorbide a + 2 reduced ferredoxin [iron-sulfur] cluster + 2 H<sup>+</sup> + O<sub>2</sub> = red chlorophyll catabolite + 2 oxidized ferredoxin [iron-sulfur] cluster (overall reaction);  
(1a) pheophorbide a + 2 reduced ferredoxin [iron-sulfur] cluster + 2 H<sup>+</sup> + O<sub>2</sub> = epoxypheophorbide a + 2 oxidized ferredoxin [iron-sulfur] cluster + H<sub>2</sub>O; (1b) epoxypheophorbide a + H<sub>2</sub>O = red chlorophyll catabolite (spontaneous)

#### 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.