Creative Enzymes®

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 18O2 labelling experiments, only the aldehyde oxygen is labelled, suggesting that the other oxygen atom may originate from H2O.
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+ + O2 = red chlorophyll catabolite + 2 oxidized ferredoxin [iron-sulfur] cluster (overall reaction); (1a) pheophorbide a + 2 reduced ferredoxin [iron-sulfur] cluster + 2 H+ + O2 = epoxypheophorbide a + 2 oxidized ferredoxin [iron-sulfur] cluster + H2O; (1b) epoxypheophorbide a + H2O = 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 ℃ for short term. For long term storage, store it at -20 ℃~-80 ℃.