

phenylalanine N-monooxygenase

Cat. No. EXWM-0725

Lot. No. (See product label)

Introduction

Description

A heme-thiolate protein (P-450). This enzyme catalyses two successive N-hydroxylations of L-phenylalanine, the first committed steps in the biosynthesis of benzylglucosinolate. The product of the two hydroxylations, N,N-dihydroxy-L-phenylalanine, is extremely labile and dehydrates spontaneously. The dehydrated product is then subject to a decarboxylation that produces the oxime. It is still not known whether the decarboxylation is spontaneous or catalysed by the enzyme. The product, (E)-phenylacetaldoxime, undergoes a spontaneous isomerization to the (Z) form.

Synonyms

phenylalanine N-hydroxylase; CYP79A2

Product Information

Form

Liquid or lyophilized powder

EC Number

EC 1.14.13.124

Reaction

$\text{L-phenylalanine} + 2 \text{ O}_2 + 2 \text{ NADPH} + 2 \text{ H}^+ = (\text{E})\text{-phenylacetaldoxime} + 2 \text{ NADP}^+ + \text{CO}_2 + 3 \text{ H}_2\text{O}$ (overall reaction); (1a) $\text{L-phenylalanine} + \text{O}_2 + \text{NADPH} + \text{H}^+ = \text{N-hydroxy-L-phenylalanine} + \text{NADP}^+ + \text{H}_2\text{O}$; (1b) $\text{N-hydroxy-L-phenylalanine} + \text{O}_2 + \text{NADPH} + \text{H}^+ = \text{N,N-dihydroxy-L-phenylalanine} + \text{NADP}^+ + \text{H}_2\text{O}$; (1c) $\text{N,N-dihydroxy-L-phenylalanine} = (\text{E})\text{-phenylacetaldoxime} + \text{CO}_2 + \text{H}_2\text{O}$

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.