Creative Enzymes®

tyrosinase

Cat. No. EXWM-0963

Lot. No. (See product label)

Introduction

Description	A type III copper protein found in a broad variety of bacteria, fungi, plants, insects, crustaceans, and mammals, which is involved in the synthesis of betalains and melanin. The enzyme, which is activated upon binding molecular oxygen, can catalyse both a monophenolase reaction cycle (reaction 1) or a diphenolase reaction cycle (reaction 2). During the monophenolase cycle, one of the bound oxygen atoms is transferred to a monophenol (such as L-tyrosine), generating an o-diphenol intermediate, which is subsequently oxidized to an o-quinone and released, along with a water molecule. The enzyme remains in an inactive deoxy state, and is restored to the active oxy state by the binding of a new oxygen molecule. During the diphenolase cycle the enzyme binds an external diphenol molecule (such as L-dopa) and oxidizes it to an o-quinone that is released along with a water molecule, leaving the enzyme in the intermediate met state. The enzyme then binds a second diphenol molecule and repeats the process, ending in a deoxy state.The second reaction is identical to that catalysed by the related enzyme catechol oxidase (EC 1.10.3.1). However, the latter can not catalyse the hydroxylation or monooxygenation of monophenols.
Synonyms	monophenol monooxygenase; phenolase; monophenol oxidase; cresolase; monophenolase; tyrosine-dopa oxidase; monophenol monooxidase; monophenol dihydroxyphenylalanine:oxygen oxidoreductase; N-acetyl-6-hydroxytryptophan oxidase; monophenol, dihydroxy-L-phenylalanine oxygen oxidoreductase; o-diphenol:O2 oxidoreductase; phenol oxidase

Product Information

Form	Liquid or lyophilized powder
EC Number	EC 1.14.18.1
CAS No.	9002-10-2
Reaction	(1) L-tyrosine + O2 = dopaquinone + H2O (overall reaction); (1a) L-tyrosine + ½ O2 = L-dopa; (1b) L-dopa + ½ O2 = dopaquinone + H2O; (2) 2 L-dopa + O2 = 2 dopaquinone + 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 ℃.