Creative Enzymes®

(S)-mandelate dehydrogenase

Cat. No. EXWM-0460

Lot. No. (See product label)

Introduction

Description	This enzyme is a member of the FMN-dependent α-hydroxy-acid oxidase/dehydrogenase family. While all enzymes of this family oxidize the (S)-enantiomer of an α-hydroxy acid to an α-oxo acid, the ultimate oxidant (oxygen, intramolecular heme or some other acceptor) depends on the particular enzyme. This enzyme transfers the electron pair from FMNH2 to a component of the electron transport chain, most probably ubiquinone. It is part of a metabolic pathway in Pseudomonads that allows these organisms to utilize mandelic acid, derivatized from the common soil metabolite amygdalin, as the sole source of carbon and energy. The enzyme has a large active-site pocket and preferentially binds substrates with longer sidechains, e.g. 2-hydroxyoctanoate rather than 2-hydroxybutyrate. It also prefers substrates that, like (S)-mandelate, have β unsaturation, e.g. (indol-3-yl)glycolate compared with (indol-3-yl)lactate. Esters of mandelate, such as methyl (S)-mandelate, are also substrates.
Synonyms	MDH

Product Information

Form	Liquid or lyophilized powder
EC Number	EC 1.1.99.31
CAS No.	9067-95-2
Reaction	(S)-mandelate + acceptor = phenylglyoxylate + reduced acceptor
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 ℃.