Creative Enzymes®

cholest-4-en-3-one 26-monooxygenase [(25S)-3-oxocholest-4-en-26-oate forming]

Cat. No. EXWM-0741

Lot. No. (See product label)

Introduction

Description This enzyme, found in several bacterial pathogens, is involved in degradation of the host's cholesterol. It catalyses the hydroxylation of the C-26 carbon, followed by oxidation of the alcohol to the carboxylic acid via the aldehyde intermediate, initiating the degradation of the alkyl side-chain of cholesterol. The products are exclusively in the (25S) configuration. It is a two-component system consisting of a P-450 (heme thiolate) oxygenase (Cyp125) and a ferredoxin reductase (most likely KshB, which is also a part of EC 1.14.13.142, 3-ketosteroid 9α-monooxygenase). The enzyme also accepts cholesterol as a substrate. cf. EC 1.14.13.221, cholest-4-en-3-one 27-monooxygenase.

Synonyms CYP125; CYP125A1; cholest-4-en-3-one 27-monooxygenase (misleading); cholest-4-en-3-one,NADH:oxygen oxidoreductase (26-hydroxylating); cholest-4-en-3-one 26-monooxygenase (ambiguous)

Product Information

Form Liquid or lyophilized powder

EC Number EC 1.14.13.141

Reaction cholest-4-en-3-one + 3 NADH + 3 H+ + 3 O2 = (25S)-3-oxocholest-4-en-26-oate + 3 NAD+ + 4 H2O (overall reaction); (1a) cholest-4-en-3-one + NADH + H+ + O2 = (25S)-26-hydroxycholest-4-en-3-one + NAD+ + H2O; (1b) (25S)-26-hydroxycholest-4-en-3-one + NADH + H+ + O2 = (25S)-26-oxocholest-4-en-3-one + NAD+ + 2 H2O; (1c) (25S)-26-oxocholest-4-en-3-one + NADH + H+ + O2 = (25S)-3-oxocholest-4-en-26-oate + NAD+ + 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 ℃.