Creative Enzymes®

cholesterol monooxygenase (side-chain-cleaving)

Cat. No. EXWM-0949

Lot. No. (See product label)

Introduction

Description	A heme-thiolate protein (cytochrome P-450). The reaction proceeds in three stages, with two hydroxylations at C-22 and C-20 preceding scission of the side-chain between carbons 20 and 22. The initial source of the electrons is NADPH, which transfers the electrons to the adrenodoxin via EC 1.18.1.6, adrenodoxin-NADP+ reductase.
Synonyms	cholesterol desmolase; cytochrome P-450scc; C27-side chain cleavage enzyme; cholesterol 20-22-desmolase; cholesterol C20-22 desmolase; cholesterol side-chain cleavage enzyme; cholesterol side-chain-cleaving enzyme; steroid 20-22 desmolase; steroid 20-22-lyase; CYP11A1 (gene name)

Product Information

Form	Liquid or lyophilized powder
EC Number	EC 1.14.15.6
CAS No.	37292-81-2, 440354-98-3
Reaction	cholesterol + 6 reduced adrenodoxin + 3 O2 + 6 H+ = pregnenolone + 4-methylpentanal + 6 oxidized adrenodoxin + 4 H2O (overall reaction); (1a) cholesterol + 2 reduced adrenodoxin + O2 + 2 H+ = (22R)-22-hydroxycholesterol + 2 oxidized adrenodoxin + H2O; (1b) (22R)-22-hydroxycholesterol + 2 reduced adrenodoxin + O2 + 2 H+ = (20R,22R)-20,22-dihydroxycholesterol + 2 oxidized adrenodoxin + H2O; (1c) (20R,22R)-20,22-dihydroxy-cholesterol + 2 reduced adrenodoxin + O2 + 2 H+ = pregnenolone + 4-methylpentanal + 2 oxidized adrenodoxin + 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 ℃.