Creative Enzymes®

# choline monooxygenase

*Cat. No. EXWM-0950*

*Lot. No.* (See product label)

## Introduction

***Description*** The spinach enzyme, which is located in the chloroplast, contains a Rieske-type [2Fe-2S] cluster, and probably also a mononuclear Fe centre. Requires Mg2+. Catalyses the first step of glycine betaine synthesis. In many bacteria, plants and animals, betaine is synthesized in two steps: (1) choline to betaine aldehyde and (2) betaine aldehyde to betaine. Different enzymes are involved in the first reaction. In plants, the reaction is catalysed by this enzyme whereas in animals and many bacteria it is catalysed by either membrane-bound EC 1.1.99.1 (choline dehydrogenase) or soluble EC 1.1.3.17 (choline oxidase). The enzyme involved in the second step, EC 1.2.1.8 (betaine-aldehyde dehydrogenase), appears to be the same in plants, animals and bacteria. In some bacteria, betaine is synthesized from glycine through the actions of EC 2.1.1.156 (glycine/sarcosine N-methyltransferase) and EC 2.1.1.157 (sarcosine/dimethylglycine N-methyltransferase).

## Product Information

***Form*** Liquid or lyophilized powder

***EC Number*** EC 1.14.15.7

***CAS No.*** 118390-76-4

***Reaction*** choline + O2 + 2 reduced ferredoxin + 2 H+ = betaine aldehyde hydrate + H2O + 2 oxidized ferredoxin

***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 ℃.