Creative Enzymes®

cobyrinate a,c-diamide synthase

Cat. No. EXWM-5804

Lot. No. (See product label)

Introduction

Description	This enzyme is the first glutamine amidotransferase that participates in the anaerobic (early cobalt insertion) biosynthetic pathway of adenosylcobalamin, and catalyses the ATP-dependent synthesis of cobyrinate a,c-diamide from cobyrinate using either L-glutamine or ammonia as the nitrogen source. It is proposed that the enzyme first catalyses the amidation of the c-carboxylate, and then the intermediate is released into solution and binds to the same catalytic site for the amidation of the a-carboxylate. The Km for ammonia is substantially higher than that for L-glutamine.
Synonyms	cobyrinic acid a,c-diamide synthetase; CbiA

Product Information

Form	Liquid or lyophilized powder
EC Number	EC 6.3.5.11
Reaction	2 ATP + cobyrinate + 2 L-glutamine + 2 H2O = 2 ADP + 2 phosphate + cobyrinate a,c-diamide + 2 L-glutamate (overall reaction); (1a) ATP + cobyrinate + L-glutamine + H2O = ADP + phosphate + cobyrinate c-monamide + L-glutamate; (1b) ATP + cobyrinate c-monamide + L-glutamine + H2O = ADP + phosphate + cobyrinate a,c-diamide + L-glutamate
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 ℃.