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 ℃.