Creative Enzymes®

adenosylcobinamide-phosphate guanylyltransferase

Cat. No. EXWM-3274

Lot. No. (See product label)

Introduction

Description In Salmonella typhimurium LT2, under anaerobic conditions, CobU (EC 2.7.7.62 and EC 2.7.1.156), CobT (EC 2.4.2.21), CobC (EC 3.1.3.73) and CobS (EC 2.7.8.26) catalyse reactions in the nucleotide loop assembly pathway, which convert adenosylcobinamide (AdoCbi) into adenosylcobalamin (AdoCbl). CobT and CobC are involved in 5,6-dimethylbenzimidazole activation whereby 5,6-dimethylbenzimidazole is converted to its riboside, α-ribazole. The second branch of the nuclotide loop assembly pathway is the cobinamide (Cbi) activation branch where AdoCbi or adenosylcobinamide-phosphate is converted to the activated intermediate AdoCbi-GDP by the bifunctional enzyme Cob U. The final step in adenosylcobalamin biosynthesis is the condensation of AdoCbi-GDP with α-ribazole, which is catalysed by EC 2.7.8.26, cobalamin synthase (CobS), to yield adenosylcobalamin. CobU is a bifunctional enzyme that has both kinase (EC 2.7.1.156) and guanylyltransferase (EC 2.7.7.62) activities. However, both activities are not required at all times.The kinase activity has been proposed to function only when S. typhimurium is assimilating cobinamide whereas the guanylyltransferase activity is required for both assimilation of exogenous cobinamide and for de novo synthesis of adenosylcobalamin. The guanylyltransferase reaction is a two-stage reaction with formation of a CobU-GMP intermediate. Guanylylation takes place at histidine-46.

Synonyms CobU; adenosylcobinamide kinase/adenosylcobinamide-phosphate guanylyltransferase; AdoCbi kinase/AdoCbi-phosphate guanylyltransferase

Product Information

Form Liquid or lyophilized powder

EC Number EC 2.7.7.62

CAS No. 169592-55-6

Reaction GTP + adenosylcobinamide phosphate = diphosphate + adenosylcobinamide-GDP

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 ℃.