cob(I)yrinic acid a,c-diamide adenosyltransferase

Cat. No. EXWM-2753

Lot. No. (See product label)

Introduction

Description	The corrinoid adenosylation pathway comprises three steps: (i) reduction of Co(III) to Co(II) by a one-electron transfer. This can be carried out by EC 1.16.1.3, aquacobalamin reductase or non-enzymically in the presence of dihydroflavin nucleotides. (ii) Co(II) is reduced to Co(I) in a second single-electron transfer by EC 1.16.1.4, cob(II)alamin reductase and (iii) the Co(I) conducts a nucleophilic attack on the adenosyl moiety of ATP to leave the cobalt atom in a Co(III) state (EC 2.5.1.17). The enzyme responsible for the adenosylation reaction is the product of the gene cobO in the aerobic bacterium Pseudomonas denitrificans and of the gene cobA in the anaerobic bacterium Salmonella typhimurium. In P. denitrificans, the enzyme shows specificity for cobyrinic acid a,c-diamide and the corrinoids that occur later in the biosynthetic pathway whereas CobA seems to have broader specificity. While CobA has a preference for ATP and Mn2+, it is able to transfer a variety of nucleosides to the cobalt, including CTP, UTP and GTP, in decreasing order of preference and to use Mg2+ instead of Mn2+.
Synonyms	CobA; CobO; ATP:corrinoid adenosyltransferase; cob(I)alamin adenosyltransferase; aquacob(I)alamin adenosyltransferase; aquocob(I)alamin vitamin B12s adenosyltransferase; ATP:cob(I)alamin Coβ-adenosyltransferase

Product Information

Form	Liquid or lyophilized powder
EC Number	EC 2.5.1.17
CAS No.	37277-84-2
Reaction	(1) ATP + cob(I)yrinic acid a,c-diamide = triphosphate + adenosylcob(III)yrinic acid a,c-diamide; (2) ATP + cobinamide = triphosphate + adenosylcobinamide
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 ℃.