

## 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;<br>aquacob(I)alamin adenosyltransferase; aquocob(I)alamin vitamin B12s<br>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                          | <ul> <li>(1) ATP + cob(I)yrinic acid a,c-diamide = triphosphate + adenosylcob(III)yrinic acid</li> <li>a,c-diamide;</li> <li>(2) ATP + cobinamide = triphosphate + adenosylcobinamide</li> </ul>  |
| Notes                             | This item requires custom production and lead time is between 5-9 weeks. We can custom produce according to your specifications.  |
| Champion and Chinging Information |   |

## Storage and Shipping Information

Storage

Store it at +4 °C for short term. For long term storage, store it at -20 °C~-80 °C.