Creative Enzymes®

lipoyl synthase

Cat. No. EXWM-3366

Lot. No. (See product label)

Introduction

Description This enzyme is a member of the 'AdoMet radical' (radical SAM) family, all members of which produce the 5'-deoxyadenosin-5'-yl radical and methionine from AdoMet [i.e. S-adenosylmethionine, or S-(5'-deoxyadenosin-5'-yl)methionine], by the addition of an electron from an iron-sulfur centre. The radical is converted into 5'-deoxyadenosine when it abstracts a hydrogen atom from C-6 and C-8, leaving reactive radicals at these positions so that they can add sulfur, with inversion of configuration. This enzyme catalyses the final step in the de-novo biosynthesis of the lipoyl cofactor, with the other enzyme involved being EC 2.3.1.181, lipoyl(octanoyl) transferase. Lipoylation is essential for the function of several key enzymes involved in oxidative metabolism, as it converts apoprotein into the biologically active holoprotein. Examples of such lipoylated proteins include pyruvate dehydrogenase (E2 domain), 2-oxoglutarate dehydrogenase (E2 domain), the branched-chain 2-oxoacid dehydrogenases and the glycine cleavage system (H protein). An alternative lipoylation pathway involves EC 2.7.7.63, lipoate-protein ligase, which can lipoylate apoproteins using exogenous lipoic acid (or its analogues).

Synonyms LS; LipA; lipoate synthase; protein 6-N-(octanoyl)lysine:sulfur sulfurtransferase; protein N6-(octanoyl)lysine:sulfur sulfurtransferase

Product Information

Form Liquid or lyophilized powder

EC Number EC 2.8.1.8

CAS No. 189398-80-9

Reaction protein N6-(octanoyl)lysine + 2 sulfur-(sulfur carrier) + 2 S-adenosyl-L-methionine + 2 reduced [2Fe-2S] ferredoxin = protein N6-(lipoyl)lysine + 2 (sulfur carrier) + 2 L-methionine + 2 5'-deoxyadenosine + 2 oxidized [2Fe-2S] ferredoxin

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 ℃.