Creative Enzymes®

[acyl-carrier-protein] S-malonyltransferase

Cat. No. EXWM-2217

Lot. No. (See product label)

Introduction

Description This enzyme, along with EC 2.3.1.38, [acyl-carrier-protein] S-acetyltransferase, is essential for the initiation of fatty-acid biosynthesis in bacteria. This enzyme also provides the malonyl groups for polyketide biosynthesis. The product of the reaction, malonyl-ACP, is an elongation substrate in fatty-acid biosynthesis. In Mycobacterium tuberculosis, holo-ACP (the product of EC 2.7.8.7, holo-[acyl-carrier-protein] synthase) is the preferred substrate. This enzyme also forms part of the multienzyme complexes EC 4.1.1.88 (biotin-independent malonate decarboxylase) and EC 4.1.1.89 (biotin-dependent malonate decarboxylase). Malonylation of ACP is immediately followed by decarboxylation within the malonate-decarboxylase complex to yield acetyl-ACP, the catalytically active species of the decarboxylase. In the enzyme from Klebsiella pneumoniae, methylmalonyl-CoA can also act as a substrate but acetyl-CoA cannot whereas the enzyme from Pseudomonas putida can use both as substrates. The ACP subunit found in fatty-acid biosynthesis contains a pantetheine-4'-phosphate prosthetic group; that from malonate decarboxylase also contains pantetheine-4'-phosphate but in the form of a 2'-(5-triphosphoribosyl)-3'-dephospho-CoA prosthetic group.

Synonyms [acyl carrier protein]malonyltransferase; FabD; malonyl coenzyme A-acyl carrier protein transacylase; malonyl transacylase; malonyl transferase; malonyl-CoA-acyl carrier protein transacylase; malonyl-CoA:[acyl-carrier-protein] S-malonyltransferase; malonyl-CoA:ACP transacylase; malonyl-CoA:ACP-SH transacylase; malonyl-CoA:AcpM transacylase; malonyl-CoA:acyl carrier protein transacylase; malonyl-CoA:acyl-carrier-protein transacylase; malonyl-CoA/dephospho-CoA acyltransferase; MAT; MCAT; MdcH

Product Information

Form Liquid or lyophilized powder

EC Number EC 2.3.1.39

CAS No. 37257-17-3

Reaction malonyl-CoA + an [acyl-carrier protein] = CoA + a malonyl-[acyl-carrier protein]

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 ℃.