

biotin-independent malonate decarboxylase

Cat. No. EXWM-4837

Lot. No. (See product label)

Introduction

Description Two types of malonate decarboxylase are currently known, both of which form multienzyme complexes. This enzyme is a cytosolic protein that is biotin-independent. The other type is a biotin-dependent, Na⁺-translocating enzyme that includes both soluble and membrane-bound components (cf. EC 4.1.1.89, biotin-dependent malonate decarboxylase). As free malonate is chemically rather inert, it has to be activated prior to decarboxylation. In both enzymes, this is achieved by exchanging malonate with an acetyl group bound to an acyl-carrier protein (ACP), to form malonyl-ACP and acetate, with subsequent decarboxylation regenerating the acetyl-ACP. The ACP subunit of both enzymes differs from that found in fatty-acid biosynthesis by having phosphopantetheine attached to a serine side-chain as 2-(5-triphosphoribosyl)-3-dephospho-CoA rather than as phosphopantetheine 4'-phosphate. The individual enzymes involved in carrying out the reaction of this enzyme complex are EC 2.3.1.187 (acetyl-S-ACP:malonate ACP transferase), EC 2.3.1.39 ([acyl-carrier-protein] S-malonyltransferase) and EC 4.1.1.87 (malonyl-S-ACP decarboxylase). The carboxy group is lost with retention of configuration.

Synonyms malonate decarboxylase (without biotin); malonate decarboxylase (ambiguous); MDC

Product Information

Form Liquid or lyophilized powder

EC Number EC 4.1.1.88

Reaction malonate + H⁺ = acetate + CO₂

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