

## β-ketoacyl-[acyl-carrier-protein] synthase III

Cat. No. EXWM-2122

Lot. No. (See product label)

### Introduction

**Description** Involved in the dissociated (or type II) fatty-acid biosynthesis system that occurs in plants and bacteria. In contrast to EC 2.3.1.41 (β-ketoacyl-ACP synthase I) and EC 2.3.1.179 (β-ketoacyl-ACP synthase II), this enzyme specifically uses CoA thioesters rather than acyl-ACP as the primer. In addition to the above reaction, the enzyme can also catalyse the reaction of EC 2.3.1.38, [acyl-carrier-protein] S-acetyltransferase, but to a much lesser extent. The enzyme is responsible for initiating both straight- and branched-chain fatty-acid biosynthesis, with the substrate specificity in an organism reflecting the fatty-acid composition found in that organism. For example, *Streptococcus pneumoniae*, a Gram-positive bacterium, is able to use both straight- and branched-chain (C4-C6) acyl-CoA primers whereas *Escherichia coli*, a Gram-negative organism, uses primarily short straight-chain acyl CoAs, with a preference for acetyl-CoA.

**Synonyms** 3-oxoacyl:ACP synthase III; 3-ketoacyl-acyl carrier protein synthase III; KASIII; KAS III; FabH; β-ketoacyl-acyl carrier protein synthase III; β-ketoacyl-ACP synthase III; β-ketoacyl (acyl carrier protein) synthase III; acetyl-CoA:malonyl-[acyl-carrier-protein] C-acyltransferase

### Product Information

**Form** Liquid or lyophilized powder

**EC Number** EC 2.3.1.180

**CAS No.** 1048646-78-1

**Reaction** acetyl-CoA + a malonyl-[acyl-carrier protein] = an acetoacetyl-[acyl-carrier protein] + CoA + CO<sub>2</sub>

**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.