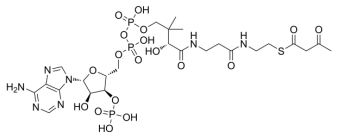
Acetoacetyl-CoA

Cat. No.:	HY-N7392
CAS No.:	1420-36-6
Molecular Formula:	$C_{25}H_{40}N_7O_{18}P_3S$
Molecular Weight:	851.61
Target:	Biochemical Assay Reagents
Pathway:	Others
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Acetoacetyl CoA is the precursor of HMG-CoA in the mevalonate pathway. Acetoacetyl-CoA thiolase catalyzes the reaction to form acetoacetyl-CoA from two acetyl-CoA molecules. Acetoacetyl CoA is essential for cholesterol biosynthesis. Acetoacetyl-CoA is also a intermediate in the biological breakdown and synthesis of fatty acids[1][2][3].
IC_{50} & Target	Human Endogenous Metabolite
In Vitro	The purified recombinant Msed_0389 and Msed_1423 catalyze the NAD-dependent oxidation of (S)-3-hydroxybutyryl-CoA to Acetoacetyl-CoA and are highly specific for their substrate (K_m of 2.6 μM and 5 μM, respectively)[2]. The homologous bifunctional protein is the only enzyme capable to covert crotonyl-CoA into Acetoacetyl-CoA in autotrophic Desulfurococcales (Ignicoccus hospitalis) and Thermoproteales (Pyrobaculum neutrophilus) that use the dicarboxylate/4-hydroxybutyrate cycle for CO2 fixation[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Miziorko HM. Enzymes of the mevalonate pathway of isoprenoid biosynthesis. Arch Biochem Biophys. 2011 Jan 15;505(2):131-43.

[2]. Liu L, et al. Enzymes Catalyzing Crotonyl-CoA Conversion to Acetoacetyl-CoA During the Autotrophic CO2 Fixation in Metallosphaera sedula. Front Microbiol. 2020 Mar 11;11:354.

[3]. Feodor Lynen, et al. Enzymes of fatty acid metabolism. Biochimica et Biophysica Acta. Volume 12, Issues 1-2, October 1953, Pages 299-314.

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