Human AACS / Acetoacetyl-CoA Synthetase Protein (His Tag)

Catalog Number: **11117-H07B**

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General Information

Gene Name Synonym:

ACSF1; SUR-5; 2210408B16Rik; SUR5

Protein Construction:

A DNA sequence encoding the full length of human AACS isoform a (NP_076417.2) (Met 1-Phe 672) was expressed, with a polyhistidine tag at the N-terminus.

Source: Human

Expression Host: Baculovirus-Insect Cells

QC Testing

Purity: > 96 % as determined by SDS-PAGE

Endotoxin:

< 1.0 EU per μg of the protein as determined by the LAL method

Stability:

Samples are stable for up to twelve months from date of receipt at -70 ℃

Predicted N terminal: His

Molecular Mass:

The recombinant human AACS consists of 690 amino acids and predicts a molecular mass of 77 kDa. It migrates as an approximately 60 kDa band in SDS-PAGE under reducing conditions.

Formulation:

Lyophilized from sterile 20mM Tris, 500mM NaCl, pH 7.4

Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Specific concentrations are included in the hardcopy of COA. Please contact us for any concerns or special requirements.

Usage Guide

Storage:

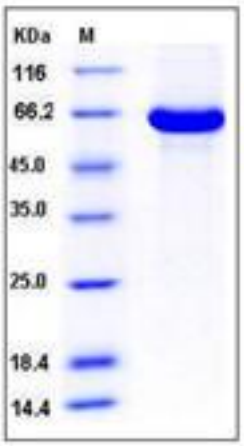
Store it under sterile conditions at -20℃ to -80℃ upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

Reconstitution:

Detailed reconstitution instructions are sent along with the products.

SDS-PAGE:



Protein Description

Acetoacetyl-CoA Synthetase (AACS) is a novel cytosolic ketone body (acetoacetate)-specific ligase. The AACS in adipose tissue plays an important role in utilizing ketone body for the fatty acid-synthesis during adipose tissue development. It had been improved that Acetoacetyl-CoA Synthetase is an essential enzyme for the synthesis of fatty acid and cholesterol from ketone bodies, was found to be highly expressed in mouse adipose tissue, and GC box and C/EBPs motif were crucial for AACS promoter activity in 3T3-L1 adipocytes. Moreover, AACS promoter activity was controlled mainly by C/EBPalpha during adipogenesis. AACS gene expression is particularly abundant in white adipose tissue, as it is induced during adipocyte differentiation. The human AACS promoter is a PPARgamma target gene and that this nuclear receptor is recruited to the AACS promoter by direct interaction with Sp1 (stimulating protein-1). The Acetoacetyl-CoA Synthetase has important roles in the regulation of ketone body utilization in rat liver and that these hypocholesterolemic agents have the ability to remedy the impaired utilization of ketone bodies under the diabetic condition.

References

1.Aguil F, *et al.* (2010) Transcriptional regulation of the human acetoacetyl-CoA synthetase gene by PPARgamma. Biochem J. 427(2): 255-64.
2.Hasegawa S, *et al.* (2008) Transcriptional regulation of ketone body-utilizing enzyme, acetoacetyl-CoA synthetase, by C/EBPalpha during adipocyte differentiation. Biochim Biophys Acta. 1779(6-7): 414-9.
3.Sato H, *et al.* (2002) Effects of streptozotocin-induced diabetes on acetoacetyl-CoA synthetase activity in rats. Biochem Pharmacol. 63(10): 1851-5.