

Human ACY1 / Aminoacylase-1 Protein (His Tag)

Catalog Number: 10549-H08B



Sino Biological Inc.
Biological Solution Specialist

General Information

Gene Name Synonym:

ACY1D, ACYLASE, ACY1

Protein Construction:

A DNA sequence encoding the full length of human ACY1 (NP_000657.1) (Met 1-Ser 408) was expressed with a polyhistidine tag at the C-terminus.

Source: Human

Expression Host: Baculovirus-Insect Cells

QC Testing

Purity: > 95 % as determined by SDS-PAGE

Bio-Activity

Measured by its ability to cleave N-acetyl-L-Methionine (Ac-Met). The specific activity is >4,000 pmoles/min/μg.

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 °C

Predicted N terminal: Met

Molecular Mass:

The recombinant human ACY1 consists of 419 amino acids and predicts a molecular mass of 47.3 kDa. It migrates as an approximately 44 kDa protein in SDS-PAGE under reducing conditions.

Formulation:

Lyophilized from sterile 50mM Tris, 100mM NaCl, pH 8.0, 10% glycerol

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

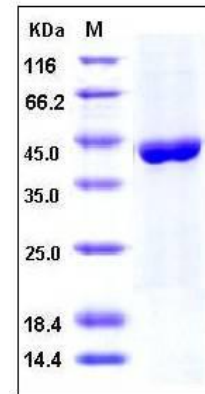
Usage Guide

Storage:

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

Avoid repeated freeze-thaw cycles.

SDS-PAGE:



Reconstitution:

Detailed reconstitution instructions are sent along with the products.

Protein Description

Aminoacylase 1, also known as ACY1, is a cytosolic, homodimeric, zinc-binding enzyme that catalyzes the hydrolysis of acylated L-amino acids to L-amino acids and acyl group, and plays a general role in the cytosolic breakdown of acetylated amino acids generated during protein degradation. As the first member of the zinc-binding enzyme family, ACY1 is expressed in a wide range of tissue with the highest level in the kidney tubular epithelium, and functions in the catabolism and salvage of acylated amino acids. ACY1 is capable of interacting with sphingosine kinase type 1 (SPHK1), which is involved in promoting cell growth and inhibiting apoptosis of tumor cells. ACY1 has been reported to exhibit reduced or absent expression in SCLC cell lines tumors and RCCs. This enzyme is evolutionarily conserved in fish, frog, mouse, and human, and the amino acid sequence of human ACY1 is 93% identical to that of mouse. Defects in ACY1 are the cause of aminoacylase-1 deficiency (ACY1D), an inborn metabolic disorder exhibiting markedly increased urinary excretion of several N-acetylated amino acids.

References

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2. Cook, R.M. et al., 1993, J. Biol. Chem. 268: 17010-17017.
3. Maceyka, M. et al., 2004, FEBS Lett. 568: 30-34.
4. Lindner, H.A. et al., 2008, Biochimie. 90: 773-580.
5. Van Coster R.N. et al., 2005, Biochem. Biophys. Res. Commun. 338: 1322-1326.

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