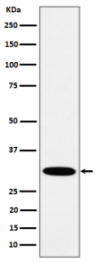
HMGCL Antibody / Hydroxymethylglutaryl CoA lyase [clone 30H50] (FY13344)

Catalog No.	Formulation	Size
FY13344	Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol, 0.4-0.5mg/ml BSA	100 ul

Recombinant RABBIT MONOCLONAL

Bulk quote request

Availability	2-3 weeks
Species Reactivity	Human
Format	Liquid
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG
Clone Name	30H50
Purity	Affinity chromatography
Buffer	Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol, 0.4-0.5mg/ml BSA.
UniProt	P35914
Applications	Western blot: 1:500-1:2000 Immunohistochemistry: 1:50-1:200
Limitations	This HMGCL antibody is available for research use only.



Western blot analysis of HMGCL expression in human A431 cell lysate using HMGCL antibody. Predicted molecular weight ~34 kDa.

Description

HMGCL antibody detects Hydroxymethylglutaryl CoA lyase, encoded by the HMGCL gene. Hydroxymethylglutaryl CoA

lyase is a mitochondrial enzyme involved in ketogenesis and leucine catabolism. HMGCL antibody provides researchers with a critical reagent to study energy metabolism, amino acid degradation, and inherited metabolic disorders.

Hydroxymethylglutaryl CoA lyase catalyzes the cleavage of HMG CoA into acetyl CoA and acetoacetate, a key step in ketone body production. Research using HMGCL antibody has shown that this enzyme provides alternative energy substrates during fasting, exercise, and carbohydrate restriction. By producing ketone bodies, Hydroxymethylglutaryl CoA lyase ensures energy supply for the brain, heart, and skeletal muscle when glucose availability is limited.

Studies with HMGCL antibody have demonstrated that the enzyme is also essential for leucine degradation. Defects in HMGCL impair leucine catabolism and ketone body production, resulting in HMG CoA lyase deficiency, a rare autosomal recessive metabolic disorder. Patients present with recurrent metabolic crises, hypoglycemia, metabolic acidosis, and lethargy. These findings underscore the importance of Hydroxymethylglutaryl CoA lyase in both amino acid metabolism and energy balance.

In addition to inherited disease, HMGCL function is relevant in cancer and diabetes. Research using HMGCL antibody has shown that alterations in ketone body metabolism influence tumor growth and metabolic adaptation. Some cancers reprogram ketone metabolism to support proliferation, while others are inhibited by high ketone levels. In diabetes, dysregulation of ketogenesis contributes to ketoacidosis, making HMGCL a critical enzyme for clinical monitoring and research.

Hydroxymethylglutaryl CoA lyase is localized to the mitochondrial matrix. Studies with HMGCL antibody have confirmed mitochondrial enrichment, with expression highest in liver and kidney, the major ketogenic organs. Tissue distribution reflects its role in systemic energy metabolism and adaptation to nutrient availability.

HMGCL antibody is widely applied in western blotting, immunohistochemistry, and enzymatic activity studies. Western blotting quantifies protein expression, immunohistochemistry identifies tissue distribution, and activity assays measure enzymatic function. These applications make HMGCL antibody indispensable for metabolic biology research.

By providing validated HMGCL antibody reagents, NSJ Bioreagents supports studies into ketogenesis, amino acid metabolism, and disease. Detection of Hydroxymethylglutaryl CoA lyase provides insights into how cells adapt to energy stress and how metabolic defects lead to disease.

Application Notes

Optimal dilution of the HMGCL antibody should be determined by the researcher.

Immunogen

A synthesized peptide derived from human HMGCL was used as the immunogen for the HMGCL antibody.

Storage

Store the HMGCL antibody at -20oC.

Copyright © NSJ Bioreagents. All rights reserved.