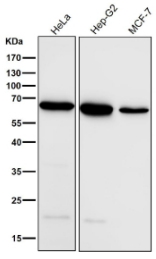
ACADVL Antibody / VLCAD [clone 32A31] (FY12324)

Catalog No.	Formulation	Size
FY12324	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

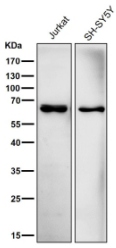
Recombinant RABBIT MONOCLONAL

Bulk quote request

Availability	2-3 weeks
Species Reactivity	Human
Format	Liquid
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG
Clone Name	32A31
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	P49748
Applications	Western Blot : 1:500-1:2000 Immunohistochemistry : 1:50-1:200 Immunoprecipitation : 1:50
Limitations	This ACADVL antibody is available for research use only.



All lanes use the ACADVL antibody at 1:5000 dilution for 1 hour at room temperature.
Predicted molecular weight ~68 kDa.



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Description

ACADVL antibody is designed to detect very long-chain specific acyl-CoA dehydrogenase (VLCAD), a mitochondrial enzyme encoded by the ACADVL gene. VLCAD is a key enzyme in the mitochondrial fatty acid beta-oxidation pathway, responsible for catalyzing the initial dehydrogenation of very long-chain acyl-CoA substrates. This activity is essential for energy production, especially during fasting or prolonged exercise when fatty acids serve as a major energy source. VLCAD is located on the inner mitochondrial membrane and plays a central role in maintaining metabolic balance and ATP generation.

ACADVL antibody is an important tool in metabolic and mitochondrial research. Deficiency of VLCAD due to mutations in the ACADVL gene leads to very long-chain acyl-CoA dehydrogenase deficiency, an inherited metabolic disorder characterized by hypoglycemia, cardiomyopathy, and muscle weakness. By detecting VLCAD expression and localization, researchers can investigate the molecular basis of fatty acid oxidation disorders and explore therapeutic approaches.

Applications of ACADVL antibody include western blotting, immunohistochemistry, immunofluorescence, and flow cytometry. In western blot assays, the antibody specifically detects VLCAD protein, enabling comparison of expression across tissues and experimental conditions. Immunohistochemistry provides mitochondrial localization patterns in tissue sections, while immunofluorescence highlights subcellular distribution in cultured cells. These applications make the antibody useful for both clinical research and basic studies of metabolism.

In addition to its clinical relevance, VLCAD has been linked to metabolic regulation in cancer and cardiovascular disease. Altered fatty acid oxidation is a hallmark of many cancers, and modulation of VLCAD activity influences tumor growth and metabolic reprogramming. In cardiology, VLCAD function is crucial for sustaining energy production in heart tissue, particularly under stress. Using ACADVL antibody, researchers can study how VLCAD expression correlates with disease progression and therapeutic outcomes.

Beyond disease-focused research, ACADVL antibody supports investigations into exercise physiology, fasting metabolism, and mitochondrial adaptation. By monitoring VLCAD activity, scientists gain insights into how energy metabolism adjusts under varying nutritional and physiological states. This makes the antibody valuable for a wide range of experimental designs.

ACADVL antibody offered by NSJ Bioreagents provides reliable detection of VLCAD across multiple assay platforms. With proven specificity, it enables researchers to explore the role of fatty acid metabolism in health, disease, and therapeutic interventions.

Application Notes

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

Immunogen

A synthesized peptide derived from human ACADVL/VLCAD was used as the immunogen for the ACADVL antibody.

Storage

Store the ACADVL antibody at -20oC.