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Anti-ACADVL Picoband Antibody

Catalog # ABO11641

Product Information

Application	WB
Primary Accession	P49748
Host	Rabbit
Reactivity	Human, Rat
Clonality	Polyclonal
Format	Lyophilized
Description	Rabbit IgG polyclonal antibody for Very long-chain specific acyl-CoA dehydrogenase, mitochondrial(ACADVL) detection. Tested with WB in Human;Rat.
Reconstitution	Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

Additional Information

Gene ID	37
Other Names	Very long-chain specific acyl-CoA dehydrogenase, mitochondrial, VLCAD, 1.3.8.9, ACADVL, VLCAD
Calculated MW	70390
Application Details	Western blot, 0.1-0.5 □g/ml, Human, Rat
Subcellular Localization	Mitochondrion inner membrane.
Source	Eukaryota
Protein Name	Very long-chain specific acyl-CoA dehydrogenase, mitochondrial
Contents	Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na2HPO4, 0.05mg NaN3.
Immunogen	A synthetic peptide corresponding to a sequence at the C-terminus of human ACADVL (538-576aa RALEQFATVVEAKLIKHKKGIVNEQFLLQRLADGAIDLY), different from the related mouse sequence by three amino acids, and from the related rat sequence by two amino acids.
Purification	Immunogen affinity purified.
Cross Reactivity	No cross reactivity with other proteins.
Storage	At -20˚C for one year. After r˚Constitution, at 4˚C for one month. It˚Can also be aliquotted and stored frozen at -20˚C for a longer time.Avoid repeated freezing and thawing.

Protein Information

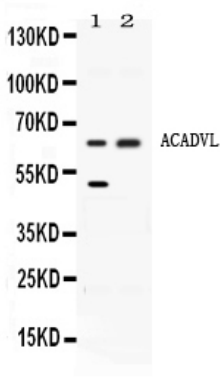
Name	ACADVL (HGNC:92)
Function	Catalyzes the first of the four reactions of the mitochondrial fatty acid beta-oxidation (FAO) pathway, which consists in the proR-proR stereospecific alpha, beta-dehydrogenation of fatty acyl-CoA thioesters using the electron transfer flavoprotein (ETF) as their physiologic electron acceptor, resulting in the formation of trans-2-enoyl-CoA ((2E)-enoyl-CoA) (PubMed:17564966, PubMed:18227065, PubMed:26474213, PubMed:7668252, PubMed:9461620, PubMed:9599005, PubMed:9839948). The mitochondrial FAO pathway is the major energy- producing process in tissues and is performed through cycles of four consecutive reactions (PubMed:26474213, PubMed:7668252). Each FAO cycle shortens the fatty acyl-CoA by two carbons, yielding one acetyl-CoA (for the citric acid cycle), one FADH(2), and one NADH (which donate electrons to the respiratory chain for ATP production) (PubMed:26474213, PubMed:7668252). Among the different mitochondrial acyl-CoA dehydrogenases, very long-chain specific acyl-CoA dehydrogenase acts specifically on fatty acyl-CoAs with saturated 12 to 24 carbons long primary chains (PubMed:17564966, PubMed:21237683, PubMed:9839948), but can also catalyze monounsaturated fatty acids such as oleate ((9Z)-octadecenoate), (9Z)-hexadecenoate, and others (PubMed:17564966). Can use (4Z,7Z,10Z,13Z,16Z,19Z)-docosahexaenoate as substrate in vitro (which is not primarily used for energy but mainly beta-oxidized in the peroxisomes) (PubMed:17564966, PubMed:26474213). In addition, based on its established catalytic mechanism, and combined genetic interaction or mutant phenotype evidence, it is predicted to act also on substrates that have not been tested experimentally but are metabolized by mitochondrial FAO, including long-chain unsaturated fatty acids such as linoleate (9Z,12Z-octadecadienoate), linolenate (9Z,12Z,15Z-octadecatrienoate), and others (PubMed:26474213). Among the different mitochondrial acyl-CoA dehydrogenases, its FAO activity overlaps with that of ACAD9 and ACADL, but plays a primary role in tissues where it is the main long-chain ACAD expressed, such as the heart and skeletal muscle (PubMed:17564966).
Cellular Location	Mitochondrion inner membrane; Peripheral membrane protein
Tissue Location	Predominantly expressed in heart and skeletal muscle (at both mRNA and protein levels) (PubMed:17564966, PubMed:8845838). Also detected in kidney and liver (at protein level) (PubMed:8845838).

Background

Very long-chain specific acyl-CoA dehydrogenase, mitochondrial (VLCAD) is an enzyme that in humans is encoded by the ACADVL gene. The protein encoded by this gene is targeted to the inner mitochondrial membrane, where it catalyzes the first step of the mitochondrial fatty acid beta-oxidation pathway. This acyl-Coenzyme A dehydrogenaseis specific to long-chain and very-long-chain fatty acids. A deficiency in this gene product reduces myocardial fatty acid beta-oxidation and is associated with cardiomyopathy. Alternative splicing results in multiple transcript variants encoding different isoforms.

Images

Western blot analysis of ACADVL expression in rat liver extract (lane 1) and HELA whole cell lysates (lane 2). ACADVL at 66KD was detected using rabbit anti- ACADVL



Antigen Affinity purified polyclonal antibody (Catalog # ABO11641) at 0.5 ??g/mL. The blot was developed using chemiluminescence (ECL) method .

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