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Goat Anti-ABAD / HADH2 Antibody
Peptide-affinity purified goat antibody
Catalog # AF1005a

Specification

Goat Anti-ABAD / HADH2 Antibody - Product Information

Application	**WB**
Primary Accession	Q99714
Other Accession	NP_001032900, 3028
Reactivity	**Human**
Predicted	**Mouse, Rat, Dog**
Host	**Goat**
Clonality	**Polyclonal**
Concentration	**100ug/200ul**
Isotype	**IgG**
Calculated MW	**26923**

Goat Anti-ABAD / HADH2 Antibody - Additional Information

Gene ID 3028

Other Names
3-hydroxyacyl-CoA dehydrogenase type-2, 1.1.1.35, 17-beta-hydroxysteroid dehydrogenase 10, 17-beta-HSD 10, 1.1.1.51, 3-hydroxy-2-methylbutyryl-CoA dehydrogenase, 1.1.1.178, 3-hydroxyacyl-CoA dehydrogenase type II, Endoplasmic reticulum-associated amyloid beta-peptide-binding protein, Mitochondrial ribonuclease P protein 2, Mitochondrial RNase P protein 2, Short-chain type dehydrogenase/reductase XH98G2, Type II HADH, HSD17B10, ERAB, HADH2, MRPP2, SCHAD, XH98G2

Format
0.5 mg IgG/ml in Tris saline (20mM Tris pH7.3, 150mM NaCl), 0.02% sodium azide, with 0.5% bovine serum albumin

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

Precautions
Goat Anti-ABAD / HADH2 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Goat Anti-ABAD / HADH2 Antibody - Protein Information

Name HSD17B10

Synonyms ERAB, HADH2, MRPP2, SCHAD, SDR5C1, XH98G

Function
Mitochondrial dehydrogenase involved in pathways of fatty acid, branched-chain amino acid and steroid metabolism (PubMed:10600649, PubMed:12917011, PubMed:18996107, PubMed:19706438, PubMed:20077426, PubMed:25925575, PubMed:26950678, PubMed:28888424, PubMed:9553139). Acts as (S)-3-hydroxyacyl-CoA dehydrogenase in mitochondrial fatty acid beta-oxidation, a major degradation pathway of fatty acids. Catalyzes the third step in the beta-oxidation cycle, namely the reversible conversion of (S)-3-hydroxyacyl-CoA to 3-ketoacyl-CoA. Preferentially accepts straight medium- and short-chain acyl-CoA substrates with highest efficiency for (3S)-hydroxybutanoyl- CoA (PubMed:10600649, PubMed:12917011, PubMed:25925575, PubMed:26950678, PubMed:9553139). Acts as 3-hydroxy-2-methylbutyryl-CoA dehydrogenase in branched-chain amino acid catabolic pathway. Catalyzes the oxidation of 3-hydroxy-2-methylbutanoyl-CoA into 2-methyl-3- oxobutanoyl-CoA, a step in isoleucine degradation pathway (PubMed:18996107, PubMed:19706438, PubMed:20077426). Has hydroxysteroid dehydrogenase activity toward steroid hormones and bile acids. Catalyzes the oxidation of 3alpha-, 17beta-, 20beta- and 21- hydroxysteroids and 7alpha- and 7beta-hydroxy bile acids (PubMed:10600649, PubMed:12917011). Oxidizes allopregnanolone/brexanolone at the 3alpha-hydroxyl group, which is known to be critical for the activation of gamma-aminobutyric acid receptors (GABAARs) chloride channel (PubMed:19706438, PubMed:28888424). Has phospholipase C-like activity toward cardiolipin and its oxidized species. Likely oxidizes the 2'-hydroxyl in the head group of cardiolipin to form a ketone intermediate that undergoes nucleophilic attack by water and fragments into diacylglycerol, dihydroxyacetone and orthophosphate. Has higher affinity for cardiolipin with oxidized fatty acids and may degrade these species during the oxidative stress response to protect cells from apoptosis (PubMed:26338420). By interacting with intracellular amyloid-beta, it may contribute to the neuronal dysfunction associated with Alzheimer disease (AD) (PubMed:9338779). Essential for structural and functional integrity of mitochondria (PubMed:20077426).

Cellular Location
Mitochondrion. Mitochondrion matrix, mitochondrion nucleoid

Tissue Location
Ubiquitously expressed in normal tissues but is overexpressed in neurons affected in AD.

Goat Anti-ABAD / HADH2 Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

Goat Anti-ABAD / HADH2 Antibody - Images

AF1005a staining (0.3 µg/ml) of Human Brain lysate (RIPA buffer, 30 µg total protein per lane). Primary incubated for 1 hour. Detected by western blot using chemiluminescence.

Goat Anti-ABAD / HADH2 Antibody - Background

This gene encodes 3-hydroxyacyl-CoA dehydrogenase type II, a member of the short-chain dehydrogenase/reductase superfamily. The gene product is a mitochondrial protein that catalyzes the oxidation of a wide variety of fatty acids, alcohols, and steroids. The protein has been implicated in the development of Alzheimer's disease, and mutations in the gene are the cause of 2-methyl-3-hydroxybutyryl-CoA dehydrogenase deficiency (MHBD). Several alternatively spliced transcript variants have been identified, but the full-length nature of only two transcript variants has been determined.

Goat Anti-ABAD / HADH2 Antibody - References

A non-enzymatic function of 17beta-hydroxysteroid dehydrogenase type 10 is required for mitochondrial integrity and cell survival. Rauschenberger K, et al. EMBO Mol Med, 2010 Feb. PMID 20077426.
Enhanced levels of mitochondrial enzyme 17beta-hydroxysteroid dehydrogenase type 10 in patients with Alzheimer disease and multiple sclerosis. Kristofikov Z, et al. Mol Biosyst, 2009 Oct. PMID 19756307.
Single nucleotide polymorphisms of 17beta-hydroxysteroid dehydrogenase type 7 gene: mechanism of estramustine-related adverse reactions? Ozeki T, et al. Int J Urol, 2009 Oct. PMID 19735314.
Mental retardation linked to mutations in the HSD17B10 gene interfering with neurosteroid and isoleucine metabolism. Yang SY, et al. Proc Natl Acad Sci U S A, 2009 Sep 1. PMID 19706438.
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