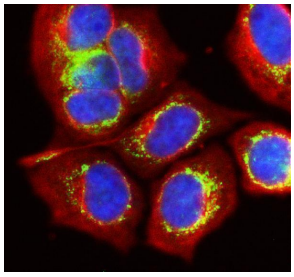
ECH1 Antibody / Enoyl-CoA hydratase 1 Antibody (FY13600)

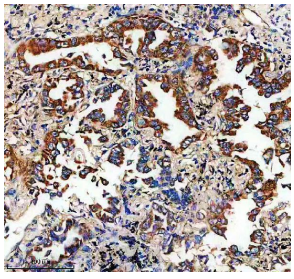
Catalog No.	Formulation	Size
FY13600	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

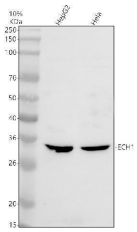
Species Reactivity	Human, Mouse, Rat
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit Ig
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	Q13011
Applications	Western blot: 0.5-1ug/ml Immunohistochemistry (FFPE): 2-5ug/ml Immunofluorescence: 5ug/ml ELISA: 0.1-0.5 ug/ml
Limitations	This ECH1 Antibody / Enoyl-CoA hydratase 1 Antibody is intended for research use only.



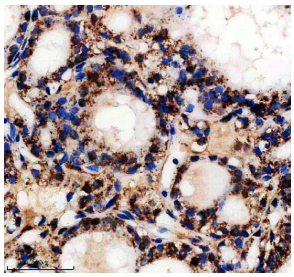
ECH1 Antibody by IF in SiHa cells. Immunofluorescence using Enoyl-CoA hydratase 1 Antibody shows punctate green cytoplasmic staining concentrated around the nuclei of SiHa cells. Red alpha-tubulin labeling delineates the cytoskeleton, and DAPI stains the nuclei blue. The green distribution is compatible with intracellular organellar staining, but no peroxisomal or mitochondrial marker was included to establish colocalization. After enzyme-mediated antigen retrieval and serum blocking, cells were incubated with both primary antibodies overnight at 4oC, followed by Fluoro488 and Cy3 secondary antibodies at 1:500.



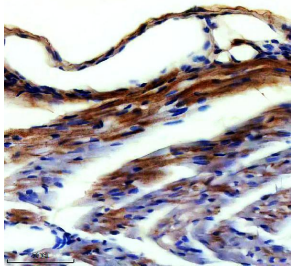
ECH1 Antibody by IHC in human lung carcinoma. Immunohistochemistry of paraffin-embedded human lung carcinoma using Enoyl-CoA hydratase 1 Antibody reveals strong brown staining in gland-forming tumor epithelium. Sections underwent heat-mediated antigen retrieval in EDTA buffer (pH 8.0), followed by blocking with 10% goat serum. Primary antibody was applied at 2 ug/mL overnight at 4oC, followed by peroxidase-conjugated secondary antibody and DAB chromogen. Hematoxylin counterstains the nuclei blue.



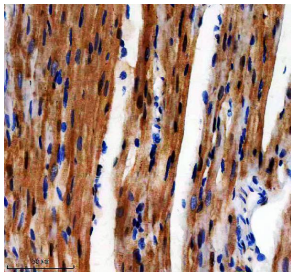
ECH1 Antibody by WB in human and rodent samples. Western blot analysis using Enoyl-CoA hydratase 1 Antibody detects a prominent immunoreactive band near 30 kDa in human HepG2 (lane 1) and HeLa (lane 2) whole-cell lysates. The calculated molecular weight is approximately 36 kDa. Reduced samples containing 30 ug protein per lane were separated by 10% SDS-PAGE and transferred to nitrocellulose. After blocking with 5% nonfat milk, the membrane was incubated with primary antibody at 0.5 ug/mL overnight at 4oC. Detection used an HRP-conjugated secondary antibody at 1:5000 and a chemiluminescent substrate. The band positions are described relative to the molecular weight standards in the blot.



ECH1 Antibody by IHC in human thyroid carcinoma. Immunohistochemistry of paraffin-embedded human thyroid carcinoma using Enoyl-CoA hydratase 1 Antibody reveals brown cytoplasmic staining in epithelial cells surrounding follicular spaces. Sections underwent heat-mediated antigen retrieval in EDTA buffer (pH 8.0), followed by blocking with 10% goat serum. Primary antibody was applied at 2 ug/mL overnight at 4oC, followed by peroxidase-conjugated secondary antibody and DAB chromogen. Hematoxylin counterstains the nuclei blue.



ECH1 Antibody by IHC in mouse heart. Immunohistochemistry of paraffin-embedded mouse heart using Enoyl-CoA hydratase 1 Antibody reveals brown staining in myocardial fibers. Sections underwent heat-mediated antigen retrieval in EDTA buffer (pH 8.0), followed by blocking with 10% goat serum. Primary antibody was applied at 2 ug/mL overnight at 4oC, followed by peroxidase-conjugated secondary antibody and DAB chromogen. Hematoxylin counterstains the nuclei blue.



ECH1 Antibody by IHC in rat heart. Immunohistochemistry of paraffin-embedded rat heart using Enoyl-CoA hydratase 1 Antibody reveals brown staining along cardiac muscle fibers. Sections underwent heat-mediated antigen retrieval in EDTA buffer (pH 8.0), followed by blocking with 10% goat serum. Primary antibody was applied at 2 ug/mL overnight at 4oC, followed by peroxidase-conjugated secondary antibody and DAB chromogen. Hematoxylin counterstains the nuclei blue.

Description

ECH1 Antibody / Enoyl-CoA hydratase 1 Antibody detects ECH1, an enzyme associated with fatty acid and related acyl-CoA metabolism. Enoyl-CoA hydratases catalyze addition of water across a carbon-carbon double bond in an enoyl-CoA substrate, generating a hydroxyacyl-CoA product. This chemistry is a central feature of fatty acid oxidation and other pathways that process unsaturated acyl-CoA intermediates. ECH1 is associated with mitochondrial metabolism and is distinct from several other hydratases that act on different substrates or in different organelles.

Fatty acid breakdown requires coordinated reactions that progressively transform acyl chains into intermediates suitable for cleavage or further processing. Hydration reactions change the chemical functionality of the substrate and prepare it for subsequent oxidation. ECH1 has been characterized for activity toward particular enoyl-CoA compounds, including intermediates relevant to unsaturated fatty acid metabolism. Its role should not be conflated with that of every enzyme annotated as an enoyl-CoA hydratase, because stereochemistry and chain-length preferences can differ substantially among family members. The designation Enoyl-CoA hydratase 1 Antibody refers to the same gene product.

Changes in mitochondrial lipid metabolism can affect the balance between energy production, metabolite availability, and redox state. Enzymes such as ECH1 contribute to this network by processing specific acyl-CoA intermediates. Studies of

fatty acid oxidation also distinguish mitochondrial pathways from peroxisomal pathways, which use overlapping reaction types but different enzyme systems. ECH1 is therefore best understood through its substrate chemistry and metabolic context rather than through a generic association with lipid breakdown. NSJ Bioreagents includes ECH1 among enzymes involved in acyl-CoA processing and the biochemical organization of cellular lipid metabolism. An ECH1 Antibody can help contextualize the molecular functions and regulation of this protein.

Explore related research targets in our Metabolism Antibody / Metabolism Antibodies collection.

Application Notes

Working dilutions of the ECH1 Antibody / Enoyl-CoA hydratase 1 Antibody may require optimization according to the experimental protocol.

Immunogen

The ECH1 Antibody was generated using e. coli-derived human ECH1 recombinant protein (amino acids R10-L328).

Storage

After reconstitution, the ECH1 Antibody may be stored at 4oC for up to one month. For longer storage, aliquot and freeze at -20oC for up to six months. Avoid repeated freezing and thawing.

Alternate Names

ECH1 antibody, Delta(3,5)-Delta(2,4)-dienoyl-CoA isomerase, mitochondrial antibody, Delta(3 antibody, 5)-Delta(2 antibody, 4)-dienoyl-CoA isomerase antibody, mitochondrial antibody, enoyl-CoA hydratase 1 antibody, HPXEL antibody, EC:5.3.3.- antibody

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