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HADHA Rabbit mAb

Catalog # AP75524

Product Information

Application	WB, IHC-P, IHC-F, FC, IP
Primary Accession	P40939
Reactivity	Rat, Human, Mouse
Host	Rabbit
Clonality	Monoclonal Antibody
Isotype	IgG
Conjugate	Unconjugated
Purification	Affinity Purified
Calculated MW	83000

Additional Information

Gene ID	3030
Other Names	HADHA
Dilution	WB~~1:500-1:1000 IHC-P~~N/A IHC-F~~N/A FC~~1:20-1:100 IP~~1:20-1:50
Format	Liquid in 50mM Tris-Glycine(pH 7.4), 0.15M NaCl, 40%Glycerol, 0.01% sodium azide and 0.05% BSA.
Storage	Store at 4°C short term. Aliquot and store at -20°C long term. Avoid freeze/thaw cycles.

Protein Information

Name	HADHA
Synonyms	HADH
Function	Mitochondrial trifunctional enzyme catalyzes the last three of the four reactions of the mitochondrial beta-oxidation pathway (PubMed:1550553, PubMed:29915090, PubMed:30850536, PubMed:8135828, PubMed:31604922). The mitochondrial beta-oxidation pathway is the major energy-producing process in tissues and is performed through cycles of four consecutive reactions (PubMed:29915090). Each beta-oxidation 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:29915090). These cycles repeat until the chain is fully degraded to acetyl-CoA units (PubMed:29915090). Among the enzymes involved in this pathway, the trifunctional protein--responsible for the hydration, dehydrogenation, and thiolysis steps, shows specificity for long-chain fatty acids, such as those from dietary and stored fats

(PubMed:30850536, PubMed:31604922). Mitochondrial trifunctional enzyme is a heterotetrameric complex composed of two proteins, the trifunctional enzyme subunit alpha/HADHA described here carries the 2,3-enoyl-CoA hydratase and the 3-hydroxyacyl-CoA dehydrogenase activities while the trifunctional enzyme subunit beta/HADHB bears the 3-ketoacyl-CoA thiolase activity (Probable) (PubMed:29915090, PubMed:30850536, PubMed:8135828). These activities have been experimentally confirmed on a few substrates derived from beta- oxidation of long-chain saturated fatty acids such as palmitate (hexadecanoate) and laurate (dodecanoate) (PubMed:1550553, PubMed:8135828, PubMed:8163672, PubMed:8651282). In addition, based on its established catalytic mechanism, and combined genetic interaction or mutant phenotype evidence, it is predicted to act also on other substrates, including long-chain unsaturated fatty acids such as oleate (9Z-octadecenoate), linoleate (9Z,12Z-octadecadienoate), linolenate (9Z,12Z,15Z-octadecatrienoate), and others (Probable) (PubMed:26474213). Independently of subunit beta, HADHA also exhibits a cardiolipin acyltransferase activity that participates in cardiolipin remodeling; cardiolipin is a major mitochondrial membrane phospholipid (PubMed:23152787, PubMed:31604922). HADHA may act downstream of Tafazzin/TAZ, that remodels monolysocardiolipin (MLCL) to a cardiolipin intermediate, and then HADHA may continue to remodel this species into mature tetralinoleoyl-cardiolipin (PubMed:31604922). Has also been proposed to act directly on MLCL; capable of acylating MLCL using different acyl-CoA substrates, with highest activity for oleoyl-CoA (PubMed:23152787).

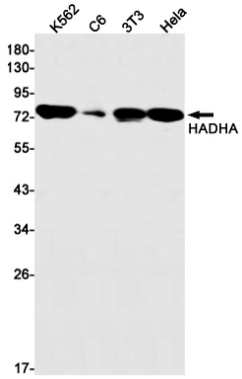
Cellular Location

Mitochondrion. Mitochondrion inner membrane Note=Protein stability and association with mitochondrion inner membrane do not require HADHB.

Background

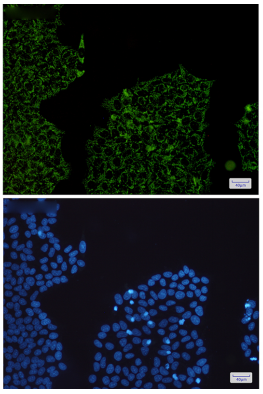
Mitochondrial trifunctional enzyme catalyzes the last three of the four reactions of the mitochondrial beta-oxidation pathway.

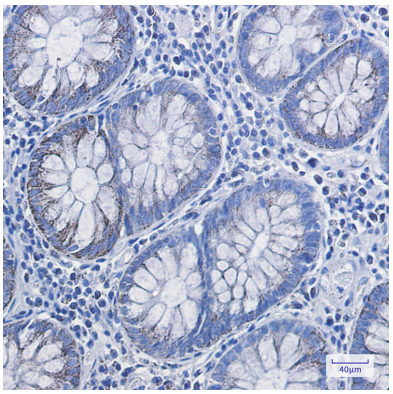
Images

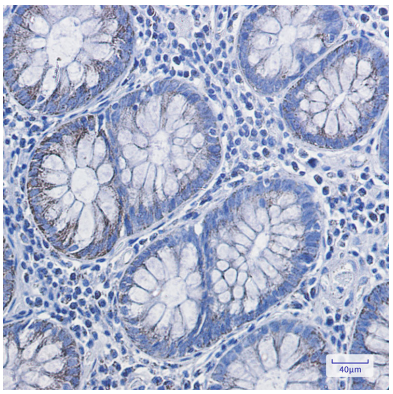


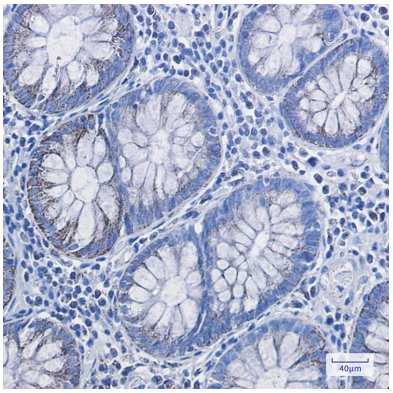
Western blot analysis of HADHA in K562, C6, 3T3, Hela lysates using HADHA antibody.

Immunocytochemistry analysis of HADHA(green) in Hela using HADHA antibody,and DAPI(blue)









Immunohistochemistry analysis of paraffin-embedded Human colon cancer using HADHA antibody. High-pressure and temperature Sodium Citrate pH 6.0 was used for antigen retrieval.

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