10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

ERAB Antibody

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP50616

Product Information

Application	WB, IHC
Primary Accession	Q99714
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	polyclonal
Calculated MW	26923

Additional Information

Gene ID	3028
Other Names	3-hydroxyacyl-CoA dehydrogenase type-2, 17-beta-hydroxysteroid dehydrogenase 10, 17-beta-HSD 10, 3-hydroxy-2-methylbutyryl-CoA dehydrogenase, 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
Dilution	WB~~ 1:1000 IHC~~1:50-1:100
Format	Rabbit IgG in phosphate buffered saline (without Mg2+ and Ca2+), pH 7.4, 150mM NaCl, 0.09% (W/V) sodium azide and 50% glycerol.
Storage Conditions	-20℃

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.

Background

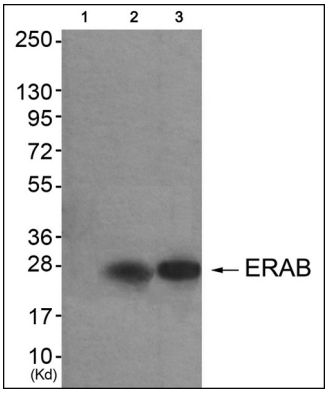
Functions in mitochondrial tRNA maturation. Part of mitochondrial ribonuclease P, an enzyme composed of MRPP1/TRMT10C, MRPP2/HSD17B10 and MRPP3/KIAA0391, which cleaves tRNA molecules in their 5'-ends. Catalyzes the beta-oxidation at position 17 of androgens and estrogens and has 3-alpha-hydroxysteroid dehydrogenase activity with androsterone. Catalyzes the third step in the beta-oxidation of fatty acids. Carries out oxidative conversions of 7-alpha-OH and 7-beta-OH bile acids. Also exhibits 20-beta-OH and 21-OH dehydrogenase activities with C21 steroids. By interacting with intracellular amyloid-beta, it may contribute to the neuronal dysfunction associated with Alzheimer disease (AD).

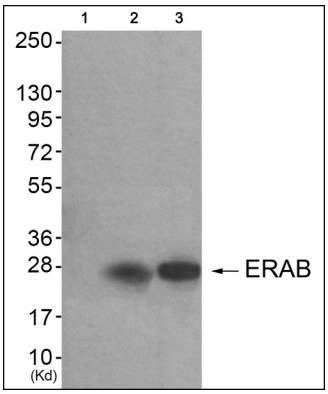
References

Yan S.D.,et al.Nature 389:689-695(1997).
Zhuchenko O.P.,et al.Submitted (JAN-1997) to the EMBL/GenBank/DDBJ databases.
Miller A.P.,et al.Proc. Natl. Acad. Sci. U.S.A. 95:8709-8714(1998).
He X.Y.,et al.J. Biol. Chem. 273:10741-10746(1998).
Ebert L.,et al.Submitted (JUN-2004) to the EMBL/GenBank/DDBJ databases.

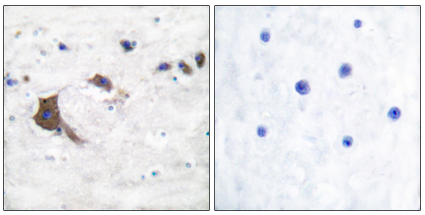
Images

Western blot analysis of lysates from 293T cell line,using ERAB Antibody(AP50616). AP50616 was diluted at 1:1000. A goat anti-rabbit IgG H&L(HRP) at 1:5000 dilution was used as the secondary antibody.Lysates at 35.





Western blot analysis of extracts from A549 cells (Lane 2) and HeLa cells (Lane 3), using ERAB Antibody. The lane on the left is treated with systhesized peptide.



Immunohistochemical analysis of paraffin-embedded human brain tissue using ERAB antibody.