

**Anti-ERAB Antibody Antibody**  
Catalog # ABO12027**Specification****Anti-ERAB Antibody Antibody - Product Information**

|                   |                        |
|-------------------|------------------------|
| Application       | WB, IHC                |
| Primary Accession | <a href="#">Q99714</a> |
| Host              | Rabbit                 |
| Reactivity        | Human, Mouse, Rat      |
| Clonality         | Polyclonal             |
| Format            | Lyophilized            |

**Description**

Rabbit IgG polyclonal antibody for 3-hydroxyacyl-CoA dehydrogenase type-2(HSD17B10) detection. Tested with WB, IHC-P, ICC in Human;Mouse;Rat.

**Reconstitution**

Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

**Anti-ERAB Antibody 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 dehydrogenase/reductase family 5C member 1, Short-chain type dehydrogenase/reductase XH98G2, Type II HADH, HSD17B10, ERAB, HADH2, MRPP2, SCHAD, SDR5C1, XH98G2

**Calculated MW**

26923 MW KDa

**Application Details**

Immunohistochemistry(Paraffin-embedded Section), 0.5-1 µg/ml, By Heat  
Immunocytochemistry, 0.5-1 µg/ml  
Western blot, 0.1-0.5 µg/ml

**Subcellular Localization**

Mitochondrion .

**Tissue Specificity**

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

**Protein Name**

3-hydroxyacyl-CoA dehydrogenase type-2

**Contents**

Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na<sub>2</sub>HPO<sub>4</sub>, 0.05mg NaN<sub>3</sub>.

### Immunogen

E.coli-derived human ERAB recombinant protein (Position: E48-P261). Human ERAB shares 87% and 88% amino acid (aa) sequence identity with mouse and rat ERAB, respectively.

### Purification

Immunogen affinity purified.

### Cross Reactivity

No cross reactivity with other proteins

### Storage

**At -20°C for one year. After r<sup>o</sup>Constitution, at 4°C for one month. It<sup>o</sup>Can also be aliquotted and stored frozen at -20°C for a longer time.Avoid repeated freezing and thawing.**

## Anti-ERAB Antibody 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:<a href="http://www.uniprot.org/citations/10600649" target="\_blank">10600649</a>, PubMed:<a href="http://www.uniprot.org/citations/12917011" target="\_blank">12917011</a>, PubMed:<a href="http://www.uniprot.org/citations/18996107" target="\_blank">18996107</a>, PubMed:<a href="http://www.uniprot.org/citations/19706438" target="\_blank">19706438</a>, PubMed:<a href="http://www.uniprot.org/citations/20077426" target="\_blank">20077426</a>, PubMed:<a href="http://www.uniprot.org/citations/25925575" target="\_blank">25925575</a>, PubMed:<a href="http://www.uniprot.org/citations/26950678" target="\_blank">26950678</a>, PubMed:<a href="http://www.uniprot.org/citations/28888424" target="\_blank">28888424</a>, PubMed:<a href="http://www.uniprot.org/citations/9553139" target="\_blank">9553139</a>). 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:<a href="http://www.uniprot.org/citations/10600649" target="\_blank">10600649</a>, PubMed:<a href="http://www.uniprot.org/citations/12917011" target="\_blank">12917011</a>, PubMed:<a href="http://www.uniprot.org/citations/25925575" target="\_blank">25925575</a>, PubMed:<a href="http://www.uniprot.org/citations/26950678" target="\_blank">26950678</a>, PubMed:<a href="http://www.uniprot.org/citations/9553139" target="\_blank">9553139</a>). 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:<a href="http://www.uniprot.org/citations/18996107" target="\_blank">18996107</a>, PubMed:<a href="http://www.uniprot.org/citations/19706438" target="\_blank">19706438</a>, PubMed:<a href="http://www.uniprot.org/citations/20077426" target="\_blank">20077426</a>). 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:<a href="http://www.uniprot.org/citations/10600649" target="\_blank">10600649</a>, PubMed:<a href="http://www.uniprot.org/citations/12917011" target="\_blank">12917011</a>, PubMed:<a href="http://www.uniprot.org/citations/19706438" target="\_blank">19706438</a>). 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:<a href="http://www.uniprot.org/citations/19706438" target="\_blank">19706438</a>)

target="\_blank">19706438</a>, PubMed:<a href="http://www.uniprot.org/citations/28888424" target="\_blank">28888424</a>). 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:<a href="http://www.uniprot.org/citations/26338420" target="\_blank">26338420</a>). By interacting with intracellular amyloid-beta, it may contribute to the neuronal dysfunction associated with Alzheimer disease (AD) (PubMed:<a href="http://www.uniprot.org/citations/9338779" target="\_blank">9338779</a>). Essential for structural and functional integrity of mitochondria (PubMed:<a href="http://www.uniprot.org/citations/20077426" target="\_blank">20077426</a>).

### Cellular Location

Mitochondrion. Mitochondrion matrix, mitochondrion nucleoid

### Tissue Location

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

### Anti-ERAB 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 Cytometry](#)
- [Cell Culture](#)

### Anti-ERAB Antibody - Images

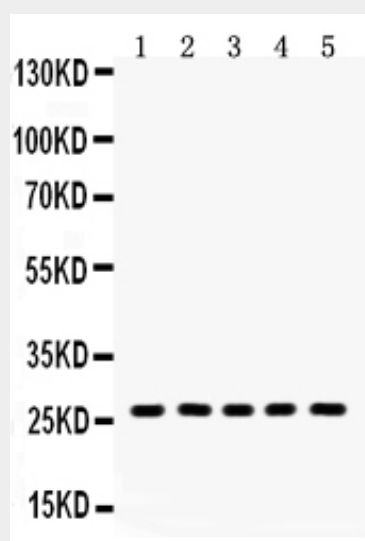


Figure 1. Western blot analysis of ERAB using anti-ERAB antibody (ABO12027). Electrophoresis was performed on a 5-20% SDS-PAGE gel at 70V (Stacking gel) / 90V (Resolving gel) for 2-3 hours. The sample well of each lane was loaded with 50ug of sample under reducing conditions. Lane 1:

Mouse Lung Tissue Lysate, Lane 2: U87 Whole Cell Lysate, Lane 3: A549 Whole Cell Lysate, Lane 4: SW620 Whole Cell Lysate, Lane 5: 293T Whole Cell Lysate. After Electrophoresis, proteins were transferred to a Nitrocellulose membrane at 150mA for 50-90 minutes. Blocked the membrane with 5% Non-fat Milk/ TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-ERAB antigen affinity purified polyclonal antibody (Catalog # ABO12027) at 0.5  $\mu$ g/mL overnight at 4 $^{\circ}$ C, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:10000 for 1.5 hour at RT. The signal is developed using an Enhanced Chemiluminescent detection (ECL) kit with Tanon 5200 system. A specific band was detected for ERAB at approximately 27KD. The expected band size for ERAB is at 27KD.

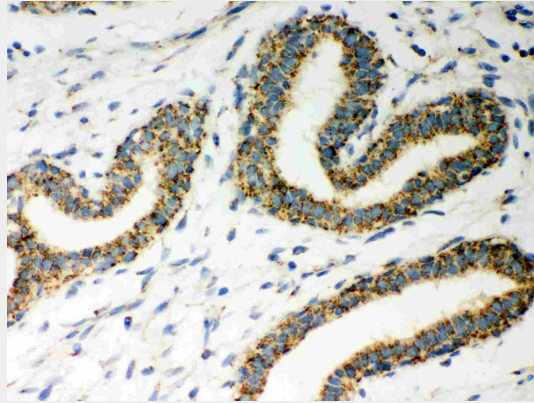


Figure 2. IHC analysis of ERAB using anti-ERAB antibody (ABO12027).ERAB was detected in paraffin-embedded section of Human Mammary Cancer Tissue. Heat mediated antigen retrieval was performed in citrate buffer (pH6, epitope retrieval solution) for 20 mins. The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1 $\mu$ g/ml rabbit anti-ERAB Antibody (ABO12027) overnight at 4 $^{\circ}$ C. Biotinylated goat anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37 $^{\circ}$ C. The tissue section was developed using Streptavidin-Biotin-Complex (SABC) with DAB as the chromogen.

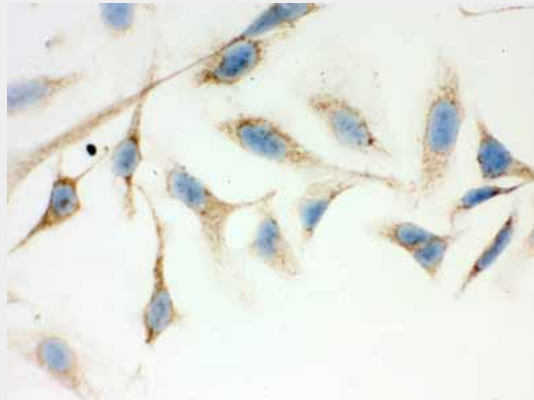


Figure 3. IHC analysis of ERAB using anti-ERAB antibody (ABO12027).ERAB was detected in immunocytochemical section of Hela cell. Heat mediated antigen retrieval was performed in citrate buffer (pH6, epitope retrieval solution) for 20 mins. The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1 $\mu$ g/ml rabbit anti-ERAB Antibody (ABO12027) overnight at 4 $^{\circ}$ C. Biotinylated goat anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37 $^{\circ}$ C. The tissue section was developed using Streptavidin-Biotin-Complex (SABC) with DAB as the chromogen.

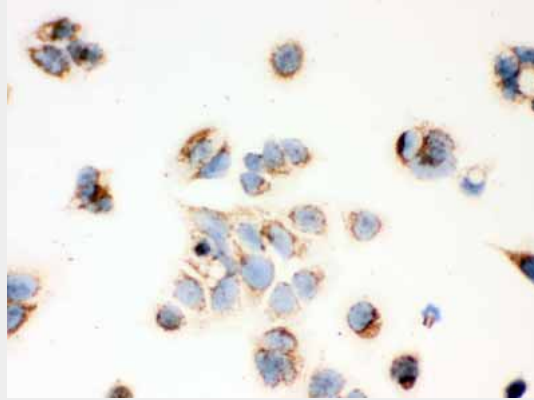


Figure 4. IHC analysis of ERAB using anti-ERAB antibody (ABO12027).ERAB was detected in immunocytochemical section of MCF-7 cell. Heat mediated antigen retrieval was performed in citrate buffer (pH6, epitope retrieval solution) for 20 mins. The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1 $\mu$ g/ml rabbit anti-ERAB Antibody (ABO12027) overnight at 4 $^{\circ}$ C. Biotinylated goat anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37 $^{\circ}$ C. The tissue section was developed using Streptavidin-Biotin-Complex (SABC) with DAB as the chromogen.

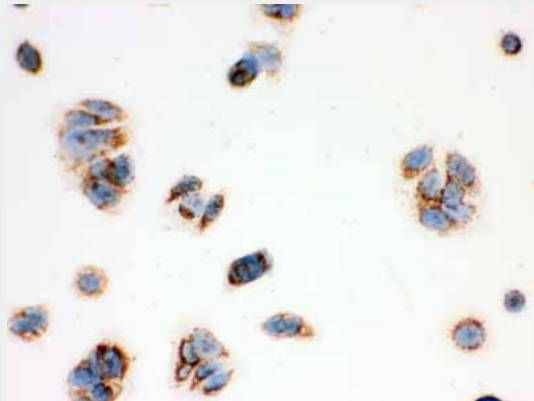


Figure 5. IHC analysis of ERAB using anti-ERAB antibody (ABO12027).ERAB was detected in immunocytochemical section of MCF-7 cell. Heat mediated antigen retrieval was performed in citrate buffer (pH6, epitope retrieval solution) for 20 mins. The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1 $\mu$ g/ml rabbit anti-ERAB Antibody (ABO12027) overnight at 4 $^{\circ}$ C. Biotinylated goat anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37 $^{\circ}$ C. The tissue section was developed using Streptavidin-Biotin-Complex (SABC) with DAB as the chromogen.

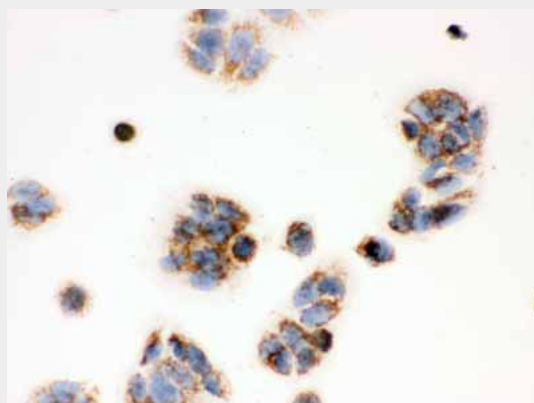


Figure 6. IHC analysis of ERAB using anti-ERAB antibody (ABO12027).ERAB was detected in

immunocytochemical section of MCF-7 cell. Heat mediated antigen retrieval was performed in citrate buffer (pH6, epitope retrieval solution) for 20 mins. The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1 $\mu$ g/ml rabbit anti-ERAB Antibody (ABO12027) overnight at 4 $^{\circ}$ C. Biotinylated goat anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37 $^{\circ}$ C. The tissue section was developed using Streptavidin-Biotin-Complex (SABC) with DAB as the chromogen.

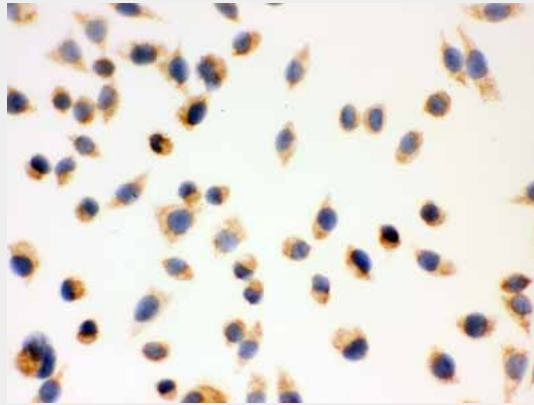


Figure 7. IHC analysis of ERAB using anti-ERAB antibody (ABO12027).ERAB was detected in immunocytochemical section of SMMC-7721 cell. Heat mediated antigen retrieval was performed in citrate buffer (pH6, epitope retrieval solution) for 20 mins. The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1 $\mu$ g/ml rabbit anti-ERAB Antibody (ABO12027) overnight at 4 $^{\circ}$ C. Biotinylated goat anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37 $^{\circ}$ C. The tissue section was developed using Streptavidin-Biotin-Complex (SABC) with DAB as the chromogen.

#### **Anti-ERAB Antibody - Background**

ERAB is also known as HSD17B10 or HADH2. 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 and steroids, and is a subunit of mitochondrial ribonuclease P, which is involved in tRNA maturation. The protein has been implicated in the development of Alzheimer disease, and mutations in the gene are the cause of 17 $\beta$ -hydroxysteroid dehydrogenase type 10 (HSD10) deficiency. Several alternatively spliced transcript variants have been identified, but the full-length nature of only two transcript variants has been determined.