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

Anti-IRBIT/AHCYL1 Antibody Picoband™ (monoclonal, 2E7D9)

Catalog # ABO16613

Product Information

Application	WB, FC
Primary Accession	O43865
Host	Mouse
Isotype	IgG1
Reactivity	Rat, Human, Mouse
Clonality	Monoclonal
Format	Lyophilized
Description	Anti-IRBIT/AHCYL1 Antibody Picoband™ (monoclonal, 2E7D9) . Tested in Flow Cytometry, WB applications. This antibody reacts with Human, Mouse, Rat.
Reconstitution	Adding 0.2 ml of distilled water will yield a concentration of 500 □g/ml.

Additional Information

Gene ID	10768
Other Names	S-adenosylhomocysteine hydrolase-like protein 1 {ECO:0000312|HGNC:HGNC:344}, DC-expressed AHCY-like molecule, IP(3)Rs binding protein released with IP(3), IRBIT, Putative adenosylhomocysteinase 2, S-adenosyl-L-homocysteine hydrolase 2, AdoHcyase 2, AHCYL1 (HGNC:344)
Calculated MW	58951
Application Details	Western blot, 0.25-0.5 □g/ml, Human, Mouse, Rat Flow Cytometry, 1-3 □g/1x10^6 cells, Human
Source	Eukaryota
Contents	Each vial contains 4 mg Trehalose, 0.9 mg NaCl and 0.2 mg Na2HPO4.
Clone Names	Clone: 2E7D9
Immunogen	E.coli-derived human IRBIT/AHCYL1 recombinant protein (Position: E14-K57).
Purification	Immunogen affinity purified.
Storage	At -20°C for one year from date of receipt. After reconstitution, at 4°C for one month. It can also be aliquotted and stored frozen at -20°C for six months. Avoid repeated freezing and thawing.

Protein Information

Name	AHCYL1 (HGNC:344)
Function	Multifaceted cellular regulator which coordinates several essential cellular functions including regulation of epithelial HCO3(-) and fluid secretion, mRNA processing and DNA replication. Regulates ITPR1 sensitivity to inositol 1,4,5-trisphosphate, competing for the common binding site and acting as endogenous 'pseudoligand' whose inhibitory activity can be modulated by its phosphorylation status. Promotes the formation of contact points between the endoplasmic reticulum (ER) and mitochondria, facilitating transfer of Ca(2+) from the ER to mitochondria (PubMed:27995898). Under normal cellular conditions, functions cooperatively with BCL2L10 to limit ITPR1-mediated Ca(2+) release but, under apoptotic stress conditions, dephosphorylated which promotes dissociation of both AHCYL1 and BCL2L10 from mitochondria-associated endoplasmic reticulum membranes, inhibits BCL2L10 interaction with ITPR1 and leads to increased Ca(2+) transfer to mitochondria which promotes apoptosis (PubMed:27995898). In the pancreatic and salivary ducts, at resting state, attenuates inositol 1,4,5-trisphosphate-induced calcium release by interacting with ITPR1 (PubMed:16793548). When extracellular stimuli induce ITPR1 phosphorylation or inositol 1,4,5-trisphosphate production, dissociates from ITPR1 to interact with CFTR and SLC26A6, mediating their synergistic activation by calcium and cAMP that stimulates the epithelial secretion of electrolytes and fluid (By similarity). Also activates basolateral SLC4A4 isoform 1 to coordinate fluid and HCO3(-) secretion (PubMed:16769890). Inhibits the effect of STK39 on SLC4A4 and CFTR by recruiting PP1 phosphatase which activates SLC4A4, SLC26A6 and CFTR through dephosphorylation (By similarity). Mediates the induction of SLC9A3 surface expression produced by Angiotensin-2 (PubMed:20584908). Depending on the cell type, activates SLC9A3 in response to calcium or reverses SLC9A3R2-dependent calcium inhibition (PubMed:18829453). May modulate the polyadenylation state of specific mRNAs, both by controlling the subcellular location of FIP1L1 and by inhibiting PAPOLA activity, in response to a stimulus that alters its phosphorylation state (PubMed:19224921). Acts as a (dATP)-dependent inhibitor of ribonucleotide reductase large subunit RRM1, controlling the endogenous dNTP pool and ensuring normal cell cycle progression (PubMed:25237103). In vitro does not exhibit any S-adenosyl-L-homocysteine hydrolase activity (By similarity). Functions as a SAH (S-adenosyl-L-homocysteine) sensor that inhibits autophagy through an MTORC1-independent mechanism. Upon SAH binding, interacts with the catalytic domain of PIK3C3, inhibiting its lipid kinase activity and reducing production of phosphatidylinositol-3-phosphate (PtdIns3P), thereby blocking autophagosome formation (PubMed:33993848).
Cellular Location	Endoplasmic reticulum. Cytoplasm, cytosol. Apical cell membrane {ECO:0000250|UniProtKB:B5DFN2}; Peripheral membrane protein. Microsome {ECO:0000250|UniProtKB:Q80SW1} Note=Associates with membranes when phosphorylated, probably through interaction with ITPR1 (By similarity). Localizes to mitochondria- associated endoplasmic reticulum membranes (MAMs) (PubMed:27995898) Localization to MAMs is greatly reduced under apoptotic stress conditions (PubMed:27995898). {ECO:0000250|UniProtKB:Q80SW1, ECO:0000269|PubMed:27995898}
Tissue Location	Expressed in dendritic cells.

Background

Putative adenosylhomocysteinase 2 is an enzyme that in humans is encoded by the AHCYL1 gene. The protein encoded by this gene interacts with inositol 1,4,5-trisphosphate receptor, type 1 and may be involved in the conversion of S-adenosyl-L-homocysteine to L-homocysteine and adenosine. Several transcript variants encoding two different isoforms have been found for this gene.

Images

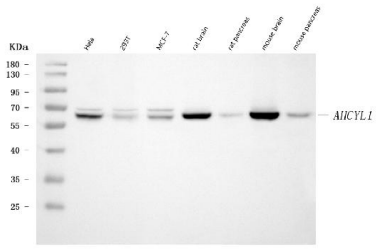


Figure 1. Western blot analysis of IRBIT/AHCYL1 using anti-IRBIT/AHCYL1 antibody (M08908).
Electrophoresis was performed on a 5-20% SDS-PAGE gel at 70V (Stacking gel) / 90V (Resolving gel) for 2-3 hours. The sample well of each lane was loaded with 30 ug of sample under reducing conditions.
Lane 1: human Hela whole cell lysates,
Lane 2: human 293T whole cell lysates,
Lane 3: human MCF-7 whole cell lysates,
Lane 4: rat brain tissue lysates,
Lane 5: rat pancreas tissue lysates,
Lane 6: mouse brain tissue lysates,
Lane 7: mouse pancreas tissue lysates.
After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with mouse anti-IRBIT/AHCYL1 antigen affinity purified monoclonal antibody (Catalog # M08908) at 0.5 µg/mL overnight at 4°C, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-mouse 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 (Catalog # EK1001) with Tanon 5200 system. A specific band was detected for IRBIT/AHCYL1 at approximately 59 kDa. The expected band size for IRBIT/AHCYL1 is at 59 kDa.

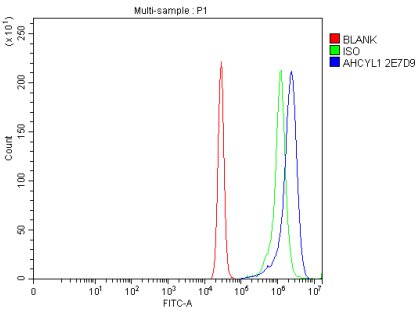


Figure 2. Flow Cytometry analysis of K562 cells using anti-IRBIT/AHCYL1 antibody (M08908).
Overlay histogram showing K562 cells stained with M08908 (Blue line). The cells were blocked with 10% normal goat serum. And then incubated with mouse anti-IRBIT/AHCYL1 Antibody (M08908, 1 µg/1x10^6 cells) for 30 min at 20°C. DyLight®488 conjugated goat anti-mouse IgG (BA1126, 5-10 µg/1x10^6 cells) was used as secondary antibody for 30 minutes at 20°C. Isotype control antibody (Green line) was mouse IgG (1 µg/1x10^6) used under the same conditions. Unlabelled sample (Red line) was also used as a control.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.