abcam

ab178693

Anti-IRBIT antibody [EPR13409]

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR13409
Purification technique	Affinity purification Protein A
Concentration	0.399 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	1/10000 - 1/50000
Notes	-

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

IHC-P

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/250 - 1/500
Notes	-

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/10 - 1/100
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

Target data

See full target information AHCYL1

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).

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	IRBIT also known as Inositol 145-Trisphosphate Receptor Binding Protein plays significant role in intracellular signaling. It interacts with the inositol 145-trisphosphate receptor (IP3R) to modulate calcium release from the endoplasmic reticulum. The protein has a molecular mass of approximately 54 kDa. IRBIT is expressed in a variety of tissues including the brain pancreas and heart highlighting its broad functional relevance in different physiological systems.

Biological function summary	IRBIT regulates diverse cellular processes influencing calcium signaling pathways and cell cycle progression. It acts as a regulatory subunit and forms a complex with IP3R modulating calcium influx based on cellular demands. Additionally IRBIT associates with other proteins such as the sodium bicarbonate cotransporter NBCe1-B facilitating ion transport and pH regulation which are essential for maintaining cellular homeostasis.
Pathways	IRBIT's role is essential in maintaining calcium balance and signal transduction. It participates in the calcium signaling pathway where its interaction with IP3R proves important for accurate calcium release and uptake. Moreover it is implicated in the bicarbonate transport pathway through its association with NBCe1-B linking to the regulation of ion transport and pH balance in cells processes critical for maintaining cellular function and communication.
Associated diseases and disorders	An imbalance in IRBIT function associates with certain pathological conditions such as cystic fibrosis and cancer. In cystic fibrosis improper regulation of bicarbonate transport partly due to IRBIT affects mucus function. Additionally in cancer disruptions in calcium signaling pathways involving IRBIT can promote tumorigenesis. Pathway interactions with proteins like IP3R and NBCe1-B illustrate its significant contributions to disease mechanisms.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

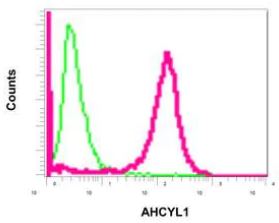
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

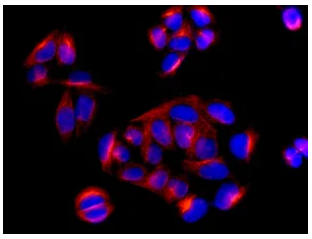
3 product images



Flow Cytometry (Intracellular) - Anti-IRBIT antibody [EPR13409] (ab178693)

IRBIT Flow Cytometry (Intracellular) staining using rabbit Anti-IRBIT antibody

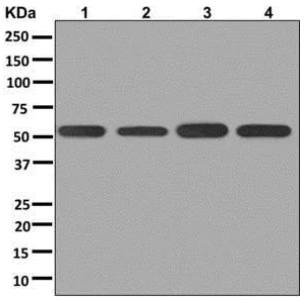
Intracellular flow cytometrical analysis of permeabilized 293T cells labeling IRBIT with ab178693 at 1/10 (red) or a rabbit IgG (negative) (green).



Immunocytochemistry/ Immunofluorescence - Anti-IRBIT antibody [EPR13409] (ab178693)

IRBIT Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-IRBIT antibody

Immunofluorescent analysis of HeLa cells labeling IRBIT with ab178693 at 1/250 (red) and DAPI staining (blue).



Western blot - Anti-IRBIT antibody [EPR13409] (ab178693)

All lanes:
Western blot - Anti-IRBIT antibody [EPR13409] (ab178693) at 1/10000 dilution

Lane 1:
Human thymus lysate at 10 µg

Lane 2:
HeLa cell lysate at 10 µg

Lane 3:
Ramos lysate at 10 µg

Lane 4:
293T (Human embryonic kidney epithelial cell) cell lysate at 10 µg

Secondary

All lanes:
HRP labeled goat anti-rabbit at 1/2000 dilution

Predicted band size: 59 kDa

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