

MICU1 / CBARA1 Antibody (Internal)
Goat Polyclonal Antibody
Catalog # ALS15846**Specification**

MICU1 / CBARA1 Antibody (Internal) - Product Information

Application	WB, IHC-P, E
Primary Accession	Q9BPX6
Reactivity	Human, Mouse, Rat, Rabbit, Zebrafish, Hamster, Monkey, Pig, Chicken, Goat, Horse, Xenopus, Bovine, Dog
Host	Goat
Clonality	Polyclonal
Calculated MW	54kDa KDa
Dilution	WB~~1:1000 IHC-P~~N/A E~~N/A

MICU1 / CBARA1 Antibody (Internal) - Additional Information**Gene ID** 10367**Other Names**

Calcium uptake protein 1, mitochondrial, Atopy-related autoantigen CALC, ara CALC, Calcium-binding atopy-related autoantigen 1, Hom s 4, MICU1, CALC, CBARA1

Target/Specificity

Human CBARA1. This antibody is expected to recognize reported isoforms 1 and 2 (NP_006068.2; NP_001182447.1).

Reconstitution & Storage

Store at -20°C. Minimize freezing and thawing.

Precautions

MICU1 / CBARA1 Antibody (Internal) is for research use only and not for use in diagnostic or therapeutic procedures.

MICU1 / CBARA1 Antibody (Internal) - Protein Information**Name** MICU1 {ECO:0000303|PubMed:20693986, ECO:0000312|HGNC:HGNC:1530}**Function**

Calcium sensor of the mitochondrial calcium uniporter (MCU) channel, which senses calcium level via its EF-hand domains (PubMed:20693986, PubMed:23101630, PubMed:23747253, PubMed:24313810, PubMed:24332854)

target="_blank">24332854, PubMed:24503055, PubMed:24560927, PubMed:26341627, PubMed:26903221, PubMed:27099988, PubMed:28615291, PubMed:30454562, PubMed:30638448, PubMed:32494073, PubMed:32667285, PubMed:32762847, PubMed:32790952, PubMed:34463251, PubMed:36206740, PubMed:37036971, PubMed:37126688). MICU1 and MICU2 (or MICU3) form a disulfide-linked heterodimer that stimulates and inhibits MCU activity, depending on the concentration of calcium (PubMed:24560927, PubMed:26903221, PubMed:28615291, PubMed:32148862, PubMed:32494073, PubMed:32667285, PubMed:32762847, PubMed:32790952, PubMed:36206740, PubMed:37036971, PubMed:37126688). At low calcium levels, MICU1 occludes the pore of the MCU channel, preventing mitochondrial calcium uptake (PubMed:32494073, PubMed:32667285, PubMed:32762847, PubMed:37036971, PubMed:37126688). At higher calcium levels, calcium-binding to MICU1 and MICU2 (or MICU3) induces a conformational change that weakens MCU-MICU1 interactions and moves the MICU1-MICU2 heterodimer away from the pore, allowing calcium permeation through the MCU channel (PubMed:32494073, PubMed:32667285, PubMed:32762847). Also required to protect against manganese toxicity by preventing manganese uptake by MCU: mechanistically, manganese-binding to its EF-hand domains does not induce any conformational change, maintaining MCU pore occlusion (PubMed:30082385, PubMed:30403999). Also acts as a barrier for inhibitors of the MCU channel, such as ruthenium red or its derivative Ru360 (PubMed:37244260). Acts as a regulator of mitochondrial cristae structure independently of its ability to regulate the mitochondrial calcium uniporter channel (PubMed:31427612, PubMed:37098122). Regulates glucose-dependent insulin secretion in pancreatic beta-cells by regulating mitochondrial calcium uptake (PubMed:22904319). Induces T-helper 1-mediated autoreactivity, which is accompanied by the release of IFNG (PubMed:16002733).

Cellular Location

Mitochondrion intermembrane space. Mitochondrion inner membrane. Note=Recruited to the mitochondrial inner membrane by EMRE/SMDT1 (PubMed:30454562). Also localizes to mitochondrial cristae junctions (PubMed:31427612)

Tissue Location

Expressed in epithelial cell lines. Strongly expressed in epidermal keratinocytes and dermal endothelial cells

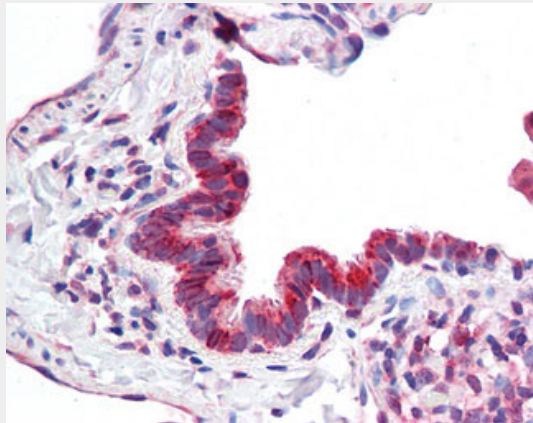
Volume

50 µl

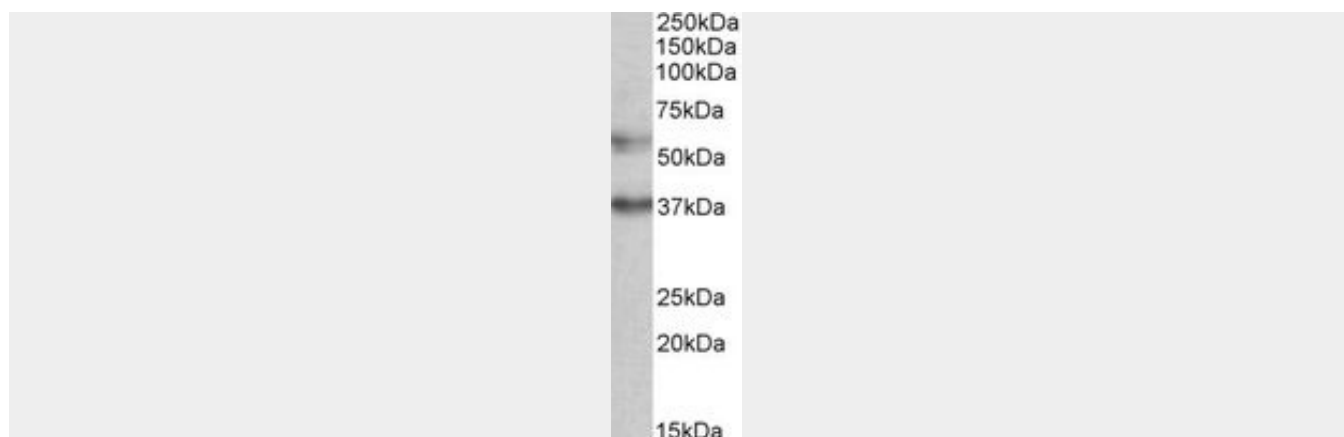
MICU1 / CBARA1 Antibody (Internal) - Protocols

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](#)

MICU1 / CBARA1 Antibody (Internal) - Images

Anti-MICU1 / CBARA1 antibody IHC staining of human lung, respiratory epithelium.



CBARA1 antibody (0.5 ug/ml) staining of K562 lysate (35 ug protein/ml in RIPA buffer).

MICU1 / CBARA1 Antibody (Internal) - Background

Key regulator of mitochondrial calcium uniporter (MCU) required to increase calcium uptake by MCU when cytoplasmic calcium is high. MICU1 and MICU2 form a disulfide-linked heterodimer that stimulate and inhibit MCU activity, respectively. MICU1 acts as a stimulator of MCU that senses calcium level via its EF-hand domains: enhances MCU opening at high Ca^{2+} concentration, allowing a rapid response of mitochondria to Ca^{2+} signals generated in the cytoplasm. Regulates glucose-dependent insulin secretion in pancreatic beta-cells by regulating mitochondrial calcium uptake. Induces T-helper 1-mediated autoreactivity, which is accompanied by the release of IFNG.

MICU1 / CBARA1 Antibody (Internal) - References

Ota T.,et al.Nat. Genet. 36:40-45(2004).
Wiemann S.,et al.Genome Res. 11:422-435(2001).
Deloukas P.,et al.Nature 429:375-381(2004).
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Natter S.,et al.FASEB J. 12:1559-1569(1998).