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MICU1 Antibody - C-terminal region

Rabbit Polyclonal Antibody
Catalog # AI15388

Product Information

Application	WB
Primary Accession	Q9BPX6
Other Accession	NM_001195519, NP_001182448
Reactivity	Human, Mouse, Rat, Rabbit, Zebrafish, Pig, Goat, Dog, Guinea Pig, Horse, Bovine
Predicted	Human, Mouse, Rat, Rabbit, Zebrafish, Pig, Goat, Dog, Guinea Pig, Horse, Bovine
Host	Rabbit
Clonality	Polyclonal
Calculated MW	54351

Additional Information

Gene ID	10367
Alias Symbol	CALC, DKFZp564C246, EFHA3, FLJ12684, CBARA1
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
Format	Liquid. Purified antibody supplied in 1x PBS buffer with 0.09% (w/v) sodium azide and 2% sucrose.
Reconstitution & Storage	Add 50 ul of distilled water. Final anti-MICU1 antibody concentration is 1 mg/ml in PBS buffer with 2% sucrose. For longer periods of storage, store at 20°C. Avoid repeat freeze-thaw cycles.
Precautions	MICU1 Antibody - C-terminal region is for research use only and not for use in diagnostic or therapeutic procedures.

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, 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)

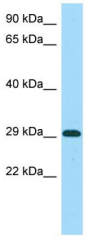
Tissue Location

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

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).
Mural R.J.,et al.Submitted (JUL-2005) to the EMBL/GenBank/DDBJ databases.
Natter S.,et al.FASEB J. 12:1559-1569(1998).

Images



WB Suggested Anti-MICU1 Antibody Titration: 1.0 µg/ml
Positive Control: MCF7 Whole CellMICU1 is supported by BioGPS gene expression data to be expressed in MCF7

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