

# MICU1 Antibody - C-terminal region

Rabbit Polyclonal Antibody

Catalog # AI15388

## Product Information

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|--------------------------|---------------------------------------------------------------------------------|
| <b>Application</b>       | WB                                                                              |
| <b>Primary Accession</b> | <a href="#">Q9BPX6</a>                                                          |
| <b>Other Accession</b>   | <a href="#">NM_001195519</a> , <a href="#">NP_001182448</a>                     |
| <b>Reactivity</b>        | Human, Mouse, Rat, Rabbit, Zebrafish, Pig, Goat, Dog, Guinea Pig, Horse, Bovine |
| <b>Predicted</b>         | Human, Mouse, Rat, Rabbit, Zebrafish, Pig, Goat, Dog, Guinea Pig, Horse, Bovine |
| <b>Host</b>              | Rabbit                                                                          |
| <b>Clonality</b>         | Polyclonal                                                                      |
| <b>Calculated MW</b>     | 54351                                                                           |

## Additional Information

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| <b>Gene ID</b>                      | 10367                                                                                                                                                                                          |
| <b>Alias Symbol</b>                 | CALC, DKFZp564C246, EFHA3, FLJ12684, CBARA1                                                                                                                                                    |
| <b>Other Names</b>                  | Calcium uptake protein 1, mitochondrial, Atopy-related autoantigen CALC, ara CALC, Calcium-binding atopy-related autoantigen 1, Hom s 4, MICU1, CALC, CBARA1                                   |
| <b>Format</b>                       | Liquid. Purified antibody supplied in 1x PBS buffer with 0.09% (w/v) sodium azide and 2% sucrose.                                                                                              |
| <b>Reconstitution &amp; Storage</b> | 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. |
| <b>Precautions</b>                  | MICU1 Antibody - C-terminal region is for research use only and not for use in diagnostic or therapeutic procedures.                                                                           |

## Protein Information

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| <b>Name</b>     | MICU1 {ECO:0000303   PubMed:20693986, ECO:0000312   HGNC:HGNC:1530}                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Function</b> | Calcium sensor of the mitochondrial calcium uniporter (MCU) channel, which senses calcium level via its EF-hand domains (PubMed: <a href="#">20693986</a> , PubMed: <a href="#">23101630</a> , PubMed: <a href="#">23747253</a> , PubMed: <a href="#">24313810</a> , PubMed: <a href="#">24332854</a> , PubMed: <a href="#">24503055</a> , PubMed: <a href="#">24560927</a> , PubMed: <a href="#">26341627</a> , PubMed: <a href="#">26903221</a> , PubMed: <a href="#">27099988</a> , PubMed: <a href="#">28615291</a> , PubMed: <a href="#">30454562</a> , PubMed: <a href="#">30638448</a> , PubMed: <a href="#">32494073</a> , PubMed: <a href="#">32667285</a> , PubMed: <a href="#">32762847</a> , PubMed: <a href="#">32790952</a> , PubMed: <a href="#">34463251</a> , PubMed: <a href="#">36206740</a> , |

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](#))

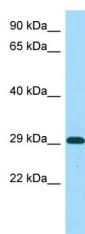
## Tissue Location

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'.