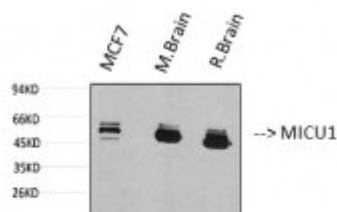


Anti-MICU1 antibody



Western Blot (WB) analysis of 1. MCF7 2. Mouse brain 3. Rat brain cells using MICU1 Monoclonal Antibody. (STJ97447)



Description

MICU1 is a protein encoded by the MICU1 gene which is approximately 54,3 kDa. MICU1 is localised to the mitochondrion inner membrane and mitochondrion intermembrane space. It is involved in Ca, cAMP and lipid signalling and is an essential regulator of mitochondrial Ca²⁺ uptake under basal conditions. It interacts with a mitochondrial inner membrane Ca²⁺ channel and is essential in preventing mitochondrial Ca²⁺ overload, which can cause excessive production of reactive oxygen species and cell stress. MICU1 is expressed in the nervous system, kidney, muscle, skin and thyroid. Mutations in the MICU1 gene may result in dermatitis. STJ97447 was developed from clone Mix and was affinity-purified from mouse ascites by affinity-chromatography using epitope-specific immunogen. The antibody detects endogenous MICU1 protein.

Model	STJ97447
Host	Mouse
Reactivity	Human, Mouse, Rat
Applications	IHC, WB
Immunogen	Recombinant Protein
Gene ID	10367
Gene Symbol	MICU1
Dilution range	WB 1:1000-2000IHC 1:100-200
Specificity	The antibody detects endogenous MICU1 protein.
Tissue Specificity	Expressed in epithelial cell lines. Strongly expressed in epidermal keratinocytes and dermal endothelial cells.

Purification	The antibody was affinity-purified from mouse ascites by affinity-chromatography using epitope-specific immunogen.
Clone ID	Mix
Note	For Research Use Only (RUO).
Protein Name	Calcium uptake protein 1, mitochondrial Atopy-related autoantigen CALC ara CALC Calcium-binding atopy-related autoantigen 1 allergen Hom s 4
Clonality	Monoclonal
Conjugation	Unconjugated
Isotype	IgG1
Formulation	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% sodium azide.
Storage Instruction	Store at -20°C, and avoid repeat freeze-thaw cycles.
Database Links	HGNC:15300MIM:605084
Alternative Names	Calcium uptake protein 1, mitochondrial Atopy-related autoantigen CALC ara CALC Calcium-binding atopy-related autoantigen 1 allergen Hom s 4
Function	Key regulator of mitochondrial calcium uniporter (MCU) that senses calcium level via its EF-hand domains . MICU1 and MICU2 form a disulfide-linked heterodimer that stimulates and inhibits MCU activity, depending on the concentration of calcium. MICU1 acts both as an activator or inhibitor of mitochondrial calcium uptake . Acts as a gatekeeper of MCU at low concentration of calcium, preventing channel opening . Enhances MCU opening at high calcium concentration, allowing a rapid response of mitochondria to calcium 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 .
Sequence and Domain Family	The C-helix is required for assembling the Ca(2+)-free homohexamer . It also plays a key role in mitochondrial calcium uptake, probably by mediating interaction with MICU2 . The EF-hand domains have high affinity for calcium and act as sensors of calcium levels .
Cellular Localization	Mitochondrion inner membrane Mitochondrion intermembrane space. The topology is subject to discussion. According to some reports, localizes at the outer surface of the mitochondrion inner membrane . According to another publication, forms a intramembrane hairpin loop without crossing the membrane . Recent studies rather suggest that it contains a transmembrane region that crosses the mitochondrial inner membrane, with the main part of the protein localized in the mitochondrial intermembrane space .