

Recombinant Mouse Mcu Protein, Myc/DDK-tagged

Cat. No. Mcu-4001M Lot. No. (See product label)

SPECIFICATION

Product Overview

Purified recombinant protein of mouse full-length mitochondrial calcium uniporter (Mcu), with C-terminal MYC/DDK tag, expressed in HEK293T cells.

Species

Mouse

Source

HEK293

Description

Mitochondrial inner membrane calcium uniporter that mediates calcium uptake into mitochondria. Constitutes the pore-forming and calcium-conducting subunit of the uniporter complex (uniplex). Activity is regulated by MICU1 and MICU2. At low Ca^{2+} levels MCU activity is down-regulated by MICU1 and MICU2; at higher Ca^{2+} levels MICU1 increases MCU activity. Mitochondrial calcium homeostasis plays key roles in cellular physiology and regulates cell bioenergetics, cytoplasmic calcium signals and activation of cell death pathways. Involved in buffering the amplitude of systolic calcium rises in cardiomyocytes. While dispensable for baseline homeostatic cardiac function, acts as a key regulator of short-term mitochondrial calcium loading underlying a 'fight-or-flight' response during acute stress: acts by mediating a rapid increase of mitochondrial calcium in pacemaker cells. Participates in mitochondrial permeability transition during ischemia-reperfusion injury. Regulates glucose-dependent insulin secretion in pancreatic beta-cells by regulating mitochondrial calcium uptake. Mitochondrial calcium uptake in skeletal muscle cells is involved in muscle size in adults. Regulates synaptic vesicle endocytosis kinetics in central nerve terminal. Involved in antigen processing and presentation.

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Molecular Mass	40.1 kDa
Purity	> 80% as determined by SDS-PAGE and Coomassie blue staining
Stability	Stable for 12 months from the date of receipt of the product under proper storage and handling conditions. Avoid repeated freeze-thaw cycles.
Storage	Store at -80 centigrade after receiving vials.
Concentration	>50 µg/mL as determined by microplate BCA method
Storage Buffer	25 mM Tris.HCl, pH 7.3, 100 mM glycine, 10% glycerol.

GENE INFORMATION

Gene Name	Mcu mitochondrial calcium uniporter [<i>Mus musculus</i> (house mouse)]
Official Symbol	Mcu
Synonyms	Mcu; mitochondrial calcium uniporter; Gm64; Ccdc109; AV064928; C10orf42; Ccdc109a; 2010012O16Rik; D130073L02Rik; calcium uniporter protein, mitochondrial; coiled-coil domain containing 109A
Gene ID	215999
mRNA Refseq	NM_001033259
Protein Refseq	NP_001028431
UniProt ID	Q3UMR5

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