

mitoNEET (D-13): sc-138987

BACKGROUND

MitoNEET, also known as CISD1 (CDGSH iron sulfur domain 1) or ZCD1, is a 108 amino acid single-pass type II membrane protein that localizes to mitochondria and contains one CDGSH-type zinc finger. Expressed at high levels in heart, liver and skeletal muscle, mitoNEET exists as a homodimer that can bind iron as a cofactor and plays an essential role in the regulation of electron transport capacity and oxidative phosphorylation. Additionally, mitoNEET is thought to be associated with CFTR (cystic fibrosis transmembrane conductance regulator) and may play a role in the pathogenesis of cystic fibrosis. MitoNEET expression is down-regulated by glibenclamide (an anti-diabetic drug) and is up-regulated by isoproterenol (a synthetic catecholamine that stimulates both β 1-AR and β 2-AR), suggesting that mitoNEET is under tight regulation by electron transport-associated molecules.

REFERENCES

1. Wiley, S.E., et al. 2007. The outer mitochondrial membrane protein mitoNEET contains a novel redox-active 2Fe-2S cluster. *J. Biol. Chem.* 282: 23745-23749.
2. Hou, X., et al. 2007. Crystallographic studies of human MitoNEET. *J. Biol. Chem.* 282: 33242-33246.
3. Wiley, S.E., et al. 2007. MitoNEET is an iron-containing outer mitochondrial membrane protein that regulates oxidative capacity. *Proc. Natl. Acad. Sci. USA* 104: 5318-5323.
4. Paddock, M.L., et al. 2007. MitoNEET is a uniquely folded 2Fe 2S outer mitochondrial membrane protein stabilized by pioglitazone. *Proc. Natl. Acad. Sci. USA* 104: 14342-14347.
5. Lin, J., et al. 2007. Crystal structure of human mitoNEET reveals distinct groups of iron sulfur proteins. *Proc. Natl. Acad. Sci. USA* 104: 14640-14645.
6. Taminelli, G.L., et al. 2008. CISD1 codifies a mitochondrial protein upregulated by the CFTR channel. *Biochem. Biophys. Res. Commun.* 365: 856-862.

CHROMOSOMAL LOCATION

Genetic locus: CISD1 (human) mapping to 10q21.1; Cisd1 (mouse) mapping to 10 B5.3.

SOURCE

mitoNEET (D-13) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping within a cytoplasmic domain of mitoNEET of human origin.

PRODUCT

Each vial contains 100 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-138987 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

For research use only, not for use in diagnostic procedures.

APPLICATIONS

mitoNEET (D-13) is recommended for detection of mitoNEET of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:50-1:500), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:25, dilution range 1:25-1:250) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for mitoNEET siRNA (h): sc-90615, mitoNEET siRNA (m): sc-149450, mitoNEET shRNA Plasmid (h): sc-90615-SH, mitoNEET shRNA Plasmid (m): sc-149450-SH, mitoNEET shRNA (h) Lentiviral Particles: sc-90615-V and mitoNEET shRNA (m) Lentiviral Particles: sc-149450-V.

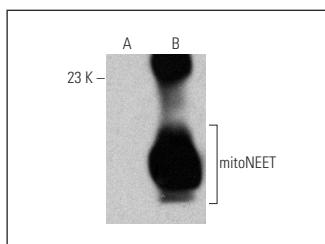
Molecular Weight of mitoNEET: 13 kDa.

Positive Controls: mitoNEET (m): 293T Lysate: sc-121671.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



mitoNEET (D-13): sc-138987. Western blot analysis of mitoNEET expression in non-transfected: sc-117752 (A) and mouse mitoNEET transfected: sc-121671 (B) 293T whole cell lysates.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.