

BMCP1 (UCP5) (Q-16): sc-50540

BACKGROUND

Brain mitochondrial carrier protein 1 (BMCP1), also designated uncoupling protein 5 (UCP5) or solute carrier family 25 member 14 (SLC25A14), is a 325-amino acid, proton channel carrier protein not coupled to oxidative phosphorylation. It is located in the inner membrane of mitochondria and is linked to the generation of heat. Like other UCPs, BMCP1 facilitates the transfer of anions from the inner to the outer mitochondrial membrane as well as the return transfer of protons from the outer to the inner mitochondrial membrane. In addition, BMCP1 reduces the mitochondrial membrane potential in mammalian cells. BMCP1 is mainly expressed in the brain, while weaker expression is seen in the pituitary and testis. It contains 6 transmembrane domains, 3 motifs typical of mitochondrial energy transfer proteins, and 20 amino acids at the N terminus that are absent in UCP1, UCP2, and UCP3. The BMCP1 protein shares 34, 38, and 39% homology with UCP1, UCP2, and UCP3, respectively.

REFERENCES

1. Sanchis, D., et al. 1999. BMCP1, a novel mitochondrial carrier with high expression in the central nervous system of humans and rodents, and respiration uncoupling activity in recombinant yeast. *J. Biol. Chem.* 273: 34611-34615.
2. Yu, X.X., et al. 2000. Characterization of novel UCP5/BMCP1 isoforms and differential regulation of UCP4 and UCP5 expression through dietary or temperature manipulation. *FASEB J.* 14: 1611-1618.
3. Online Mendelian Inheritance in Man, OMIM[™]. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 300242. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
4. Clark, H.F., et al. 2003. The secreted protein discovery initiative (SPDI), a large-scale effort to identify novel human secreted and transmembrane proteins: a bioinformatics assessment. *Genome Res.* 13: 2265-2270.
5. Haguenaer, A., et al. 2005. A new renal mitochondrial carrier, KMCP1, is up-regulated during tubular cell regeneration and induction of antioxidant enzymes. *J. Biol. Chem.* 280: 22036-22043.
6. Kitahara, T., et al. 2005. Regulation of mitochondrial uncoupling proteins in mouse inner ear ganglion cells in response to systemic kanamycin challenge. *Neuroscience* 135: 639-653.
7. Kim-Han, J.S. and Dugan, L.L. 2005. Mitochondrial uncoupling proteins in the central nervous system. *Antioxid. Redox Signal.* 7: 1173-1181.
8. Andrews, Z.B., et al. 2005. Mitochondrial uncoupling proteins in the CNS: in support of function and survival. *Nat. Rev. Neurosci.* 6: 829-840.

CHROMOSOMAL LOCATION

Genetic locus: SLC25A14 (human) mapping to Xq26.1; Slc25a14 (mouse) mapping to X A4.

SOURCE

BMCP1 (UCP5) (Q-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of BMCP1 (UCP5) of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-50540 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

BMCP1 (UCP5) (Q-16) is recommended for detection of all isoforms of BMCP1 (UCP5) of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

BMCP1 (UCP5) (Q-16) is also recommended for detection of all isoforms of BMCP1 (UCP5) in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for BMCP1 siRNA (h): sc-60275, BMCP1 siRNA (m): sc-60276, BMCP1 shRNA Plasmid (h): sc-60275-SH, BMCP1 shRNA Plasmid (m): sc-60276-SH, BMCP1 shRNA (h) Lentiviral Particles: sc-60275-V and BMCP1 shRNA (m) Lentiviral Particles: sc-60276-V.

Molecular Weight of BMCP1: 36 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker[™] compatible donkey anti-goat IgG-HRP: sc-2033 (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) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz[™] Mounting Medium: sc-24941.

STORAGE

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

RESEARCH USE

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

PROTOCOLS

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