

BMCP1 (UCP5) (O-25): sc-130978

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. Haguener, A., et al. 2005. A new renal mitochondrial carrier, KMCP1, is upregulated 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.

CHROMOSOMAL LOCATION

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

SOURCE

BMCP1 (UCP5) (O-25) is a Protein A purified rabbit polyclonal antibody raised against synthetic BMCP1 (UCP5) peptide of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml PBS with < 0.1% sodium azide, 0.1% gelatin and < 0.02% sucrose.

APPLICATIONS

BMCP1 (UCP5) (O-25) is recommended for detection of BMCP1 (UCP5) of mouse, rat, human and canine origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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.

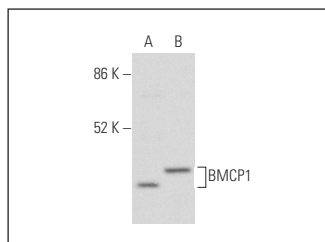
Molecular Weight of BMCP1: 36 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, NIH/3T3 whole cell lysate: sc-2210 or DU 145 cell lysate: sc-2268.

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. 4) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

DATA



BMCP1 (UCP5) (O-25): sc-130978. Western blot analysis of BMCP1 expression in NIH/3T3 (A) and DU 145 (B) 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.

RESEARCH USE

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