

BMCP1/KMCP1 (F-3): sc-376172

BACKGROUND

Members of the mitochondrial carrier family transport a variety of metabolites across the inner mitochondrial membrane. 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 that is not coupled to oxidative phosphorylation. BMCP1 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. Kidney mitochondrial carrier protein-1 (KMCP1), also designated solute carrier family 25 member 30 (SLC25A30), is a 291 amino acid multi-pass membrane protein that localizes to mitochondria and is highly expressed in kidney cortex. KMCP1 is important during increased mitochondrial metabolism and is up-regulated in response to cellular oxidative damage. KMCP1 is highly homologous to BMCP1.

REFERENCES

1. Kuan, J., et al. 1993. The mitochondrial carrier family of transport proteins: structural, functional, and evolutionary relationships. *Crit. Rev. Biochem. Mol. Biol.* 28: 209-233.
2. Nelson, D.R., et al. 1998. Highly conserved charge-pair networks in the mitochondrial carrier family. *J. Mol. Biol.* 277: 285-308.
3. Sanchis, D., et al. 1998. 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.

CHROMOSOMAL LOCATION

Genetic locus: SLC25A14 (human) mapping to Xq26.1, SLC25A30 (human) mapping to 13q14.13; Slc25a14 (mouse) mapping to X A4, Slc25a30 (mouse) mapping to 14 D3.

SOURCE

BMCP1/KMCP1 (F-3) is a mouse monoclonal antibody raised against amino acids 211-295 mapping near the C-terminus of BMCP1 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

BMCP1/KMCP1 (F-3) is available conjugated to agarose (sc-376172 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-376172 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376172 PE), fluorescein (sc-376172 FITC), Alexa Fluor® 488 (sc-376172 AF488), Alexa Fluor® 546 (sc-376172 AF546), Alexa Fluor® 594 (sc-376172 AF594) or Alexa Fluor® 647 (sc-376172 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376172 AF680) or Alexa Fluor® 790 (sc-376172 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

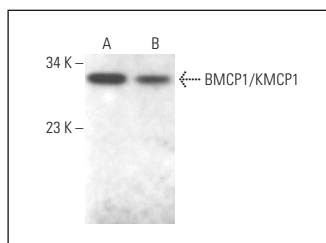
BMCP1/KMCP1 (F-3) is recommended for detection of all isoforms of BMCP1 (UCP5) and KMCP1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting 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).

Molecular Weight of BMCP1: 36 kDa.

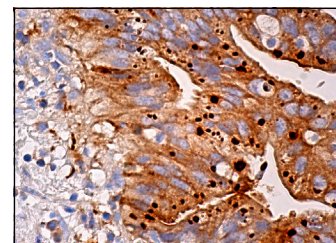
Molecular Weight of KMCP1: 30 kDa.

Positive Controls: DU 145 cell lysate: sc-2268 or NTERA-2 cl.D1 whole cell lysate: sc-364181.

DATA



BMCP1/KMCP1 (F-3): sc-376172. Western blot analysis of BMCP1/KMCP1 expression in DU 145 (A) and NTERA-2 cl.D1 (B) whole cell lysates.



BMCP1/KMCP1 (F-3): sc-376172. Immunoperoxidase staining of formalin fixed, paraffin-embedded human gall bladder tissue showing cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Mendez-Romero, O., et al. 2019. Mitochondrial uncoupling proteins UCP4 and UCP5 from the Pacific white shrimp *Litopenaeus vannamei*. *J. Bioenerg. Biomembr.* 51: 103-119.
2. Torrens-Mas, M., et al. 2019. Sirtuin 3 silencing impairs mitochondrial biogenesis and metabolism in colon cancer cells. *Am. J. Physiol., Cell Physiol.* 317: C398-C404.
3. Mendez-Romero, O., et al. 2020. Functional characterization of the mitochondrial uncoupling proteins from the white shrimp *Litopenaeus vannamei*. *Biochim. Biophys. Acta Bioenerg.* 1861: 148209.

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 for detailed protocols and support products.