SANTA CRUZ BIOTECHNOLOGY, INC.

uMtCK (C-4): sc-514656

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Creatine kinases (CK) are a large family of isoenzymes that regulate levels of ATP in subcellular compartments, where they provide ATP at sites of fluctuating energy demand by the transfer of phosphates between creatine and adenine nucleotides. CKs provide the energy of phosphate hydrolysis necessary to drive the normal function of many cellular systems including muscle, electrocytes, retina photoreceptor cells, brain cells, kidney, salt glands, myometrium, placenta, pancreas, thymus, thyroid, intestinal epithelial cells, endothelial cells, cartilage and bone cells, macrophages, blood platelets, tumor and cancer cells. Human cytoplasmic CK-brain (CK-B, BCK) is a 381 amino acid, brain tissue specific isoform of CK. Human cytoplasmic CK-muscle (CK-M, MCK) is a muscle tissue specific isoform of CK. Human cytoplasmic CK-mitochondrial (MtCK, Mi-CK) is a 416 amino acid mitochondrial specific isoform of CK. Cytosolic CKs are important in the energetic regulation of Ca^{2+}-pumps and in the maintenance of Ca^{2+}-homeostasis.

REFERENCES

1. Mariman, E.C., et al. 1987. Structure and expression of the human creatine kinase B gene. Genomics 1: 126-137.
2. Nigro, J.M., et al. 1987. cDNA cloning and mapping of the human creatine kinase M gene to 19q13. Am. J. Hum. Genet. 40: 115-125.
3. Mariman, E.C., et al. 1989. Complete nucleotide sequence of the human creatine kinase B gene. Nucleic Acids Res. 17: 6385.
4. Haas, R.C., et al. 1989. Isolation and characterization of the gene and cDNA encoding human mitochondrial creatine kinase. J. Biol. Chem. 264: 2890-2897.
5. Wallimann, T., et al. 1994. Creatine kinase in non-muscle tissues and cells. Mol. Cell. Biochem. 133-134: 193-220.

CHROMOSOMAL LOCATION

Genetic locus: CKMT1B (human) mapping to 15q15.3.

SOURCE

uMtCK (C-4) is a mouse monoclonal antibody raised against amino acids 1-50 mapping at the N-terminus of uMtCK of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

uMtCK (C-4) is available conjugated to agarose (sc-514656 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-514656 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-514656 PE), fluorescein (sc-514656 FITC), Alexa Fluor® 488 (sc-514656 AF488), Alexa Fluor® 546 (sc-514656 AF546), Alexa Fluor® 594 (sc-514656 AF594) or Alexa Fluor® 647 (sc-514656 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-514656 AF680) or Alexa Fluor® 790 (sc-514656 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

uMtCK (C-4) is recommended for detection of uMtCK of 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for uMtCK siRNA (h): sc-38967, uMtCK shRNA Plasmid (h): sc-38967-SH and uMtCK shRNA (h) Lentiviral Particles: sc-38967-V.

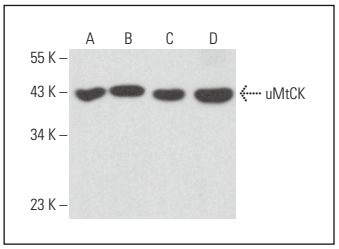
Molecular Weight of uMtCK: 47 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201, SK-BR-3 cell lysate: sc-2218 or ZR-75-1 cell lysate: sc-2241.

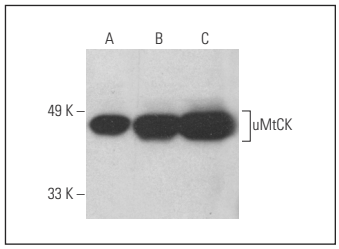
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



uMtCK (C-4): sc-514656. Western blot analysis of uMtCK expression in A-431 (**A**) and ZR-75-1 (**B**) whole cell lysates and rat cerebellum (**C**) and mouse colon (**D**) tissue extracts.



uMtCK (C-4) HRP: sc-514656 HRP. Direct western blot analysis of uMtCK expression in A-431 (**A**), SK-BR-3 (**B**) and ZR-75-1 (**C**) 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.

PROTOCOLS

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