SANTA CRUZ BIOTECHNOLOGY, INC.

sMtCK (C-6): sc-390489

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 character-ization 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: CKMT2 (human) mapping to 5q14.1; Ckmt2 (mouse) mapping to 13 C3.

SOURCE

sMtCK (C-6) is a mouse monoclonal antibody raised against amino acids 1-95 mapping at the N-terminus of sMtCK 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.

sMtCK (C-6) is available conjugated to agarose (sc-390489 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-390489 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390489 PE), fluorescein (sc-390489 FITC), Alexa Fluor® 488 (sc-390489 AF488), Alexa Fluor® 546 (sc-390489 AF546), Alexa Fluor® 594 (sc-390489 AF594) or Alexa Fluor® 647 (sc-390489 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-390489 AF680) or Alexa Fluor® 790 (sc-390489 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

sMtCK (C-6) is recommended for detection of sMtCK 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).

Suitable for use as control antibody for sMtCK siRNA (h): sc-38969, sMtCK siRNA (m): sc-38970, sMtCK shRNA Plasmid (h): sc-38969-SH, sMtCK shRNA Plasmid (m): sc-38970-SH, sMtCK shRNA (h) Lentiviral Particles: sc-38969-V and sMtCK shRNA (m) Lentiviral Particles: sc-38970-V.

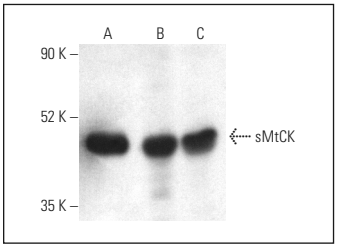
Molecular Weight of sMtCK: 52 kDa.

Positive Controls: human skeletal muscle extract: sc-363776, rat skeletal muscle extract: sc-364810 or human heart extract: sc-363763.

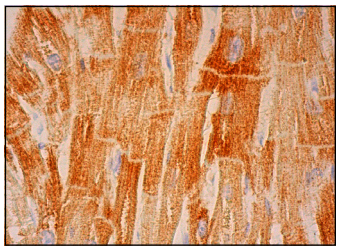
RECOMMENDED SUPPORT REAGENTS

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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



sMtCK (C-6): sc-390489. Western blot analysis of sMtCK expression in human heart (**A**), human skeletal muscle (**B**) and rat skeletal muscle (**C**) tissue extracts. Detection reagent used: m-IgG_1 BP-HRP: sc-525408.



sMtCK (C-6): sc-390489. Immunoperoxidase staining of formalin fixed, paraffin-embedded human heart muscle tissue showing cytoplasmic staining of myocytes.

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.