

# uMtCK (25-L): sc-130364

## 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<sup>2+</sup>-pumps and in the maintenance of Ca<sup>2+</sup>-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.
6. Wallimann, T., et al. 1998. Some new aspects of creatine kinase (CK): compartmentation, structure, function and regulation for cellular and mitochondrial bioenergetics and physiology. *Biofactors* 8: 229-234.

## CHROMOSOMAL LOCATION

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

## SOURCE

uMtCK (25-L) is a mouse monoclonal antibody raised against recombinant uMtCK of human origin.

## PRODUCT

Each vial contains 100 µg IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## 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.

## APPLICATIONS

uMtCK (25-L) is recommended for detection of uMtCK of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

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.

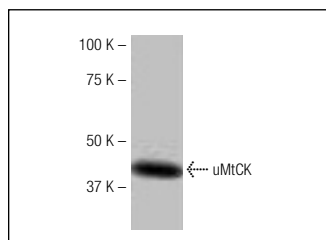
Molecular Weight of uMtCK: 47 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201.

## 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, 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).

## DATA



uMtCK (25-L): sc-130364. Western blot analysis of uMtCK expression in A-431 whole cell lysate.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.