

creatine kinase-M (h): 293T Lysate: sc-159316

BACKGROUND

Creatine kinases (CKs) 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. Creatine kinases 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, and tumor and cancer cells. Human cytoplasmic creatine kinase-B, also designated CK-B and BCK, is a 381 amino acid, brain tissue-specific isoform of creatine kinase. Human cytoplasmic creatine kinase-M (CK-M, MCK) is a muscle tissue-specific isoform of creatine kinase. Human cytoplasmic creatine kinase-Mi (Mi-CK, MtCK) is a 416 amino acid mitochondrial-specific isoform of creatine kinase. Cytosolic creatine kinases are important in the energetic regulation of Ca^{2+} -pumps and in the maintenance of Ca^{2+} -homeostasis.

REFERENCES

1. Mariman, E.C., Broers, C.A., Claesen, C.A., Tesser, G. and Wieringa, B. 1987. Structure and expression of the human creatine kinase B gene. *Genomics* 1: 126-137.
2. Nigro, J.M., Schweinfest, C.W., Rajkovic, A., Pavlovic, J., Jamal, S., Dottin, R.P., Hart, J.T., Kamarck, M.E., Rae, P.M., Carty, M.D., et al. 1987. cDNA cloning and mapping of the human creatine kinase M gene to 19q13. *Am. J. Hum. Genet.* 40: 115-125.
3. Haas, R. C., Korenfeld, C., Zhang, Z.F., Perryman, B., Roman, D. and Strauss, A.W. 1989. Isolation and characterization of the gene and cDNA encoding human mitochondrial creatine kinase. *J. Biol. Chem.* 264: 2890-2897.
4. Mariman, E.C., Schepens, J.T. and Wieringa, B. 1989. Complete nucleotide sequence of the human creatine kinase B gene. *Nucleic Acids Res.* 17: 6385.
5. Wallimann, T. and Hemmer, W. 1994. Creatine kinase in non-muscle tissues and cells. *Mol. Cell. Biochem.* 133-134: 193-220.
6. Wallimann, T., Dolder, M., Schlattner, U., Eder, M., Hornemann, T., O'Gorman, E., Ruck, A. and Brdiczka, D. 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: CKM (human) mapping to 19q13.32.

PRODUCT

creatine kinase-M (h): 293T Lysate represents a lysate of human creatine kinase-M transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

APPLICATIONS

creatine kinase-M (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive creatine kinase-M antibodies. Recommended use: 10-20 µl per lane.

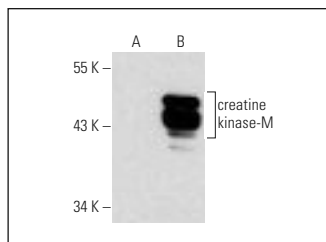
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

creatine kinase-M (MM-64): sc-69878 is recommended as a positive control antibody for Western Blot analysis of enhanced human creatine kinase-M expression in creatine kinase-M transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

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.

DATA



creatine kinase-M (MM-64): sc-69878. Western blot analysis of creatine kinase-M expression in non-transfected: sc-117752 (A) and human creatine kinase-M transfected: sc-159316 (B) 293T whole cell lysates.

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.