SANTA CRUZ BIOTECHNOLOGY, INC.

creatine kinase-M (MM-2): sc-69848

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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., 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. 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.
4. Mariman, E.C., et al. 1989. Complete nucleotide sequence of the human creatine kinase B gene. Nucleic Acids Res. 17: 6385.
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: CKM (human) mapping to 19q13.32; Ckm (mouse) mapping to 7 A3.

SOURCE

creatine kinase-M (MM-2) is a mouse monoclonal antibody raised against creatine kinase-M 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.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

creatine kinase-M (MM-2) is recommended for detection of creatine kinase-M of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for creatine kinase-M siRNA (h): sc-35109, creatine kinase-M siRNA (m): sc-35110, creatine kinase-M siRNA (r): sc-270230, creatine kinase-M shRNA Plasmid (h): sc-35109-SH, creatine kinase-M shRNA Plasmid (m): sc-35110-SH, creatine kinase-M shRNA Plasmid (r): sc-270230-SH, creatine kinase-M shRNA (h) Lentiviral Particles: sc-35109-V, creatine kinase-M shRNA (m) Lentiviral Particles: sc-35110-V and creatine kinase-M shRNA (r) Lentiviral Particles: sc-270230-V.

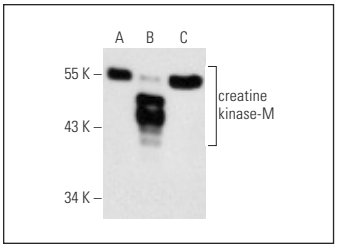
Molecular Weight of creatine kinase-M: 43 kDa.

Positive Controls: SH-SY5Y cell lysate: sc-3812, creatine kinase-M (h): 293T Lysate: sc-159316 or HeLa whole cell lysate: sc-2200.

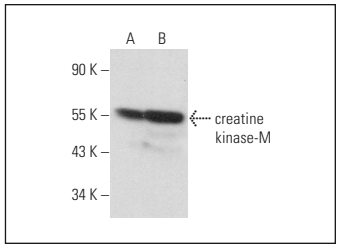
RECOMMENDED SUPPORT REAGENTS

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



creatine kinase-M (MM-2): sc-69848. Western blot analysis of creatine kinase-M expression in non-transfected 293T: sc-117752 (**A**), human creatine kinase-M transfected 293T: sc-159316 (**B**) and HeLa (**C**) whole cell lysates.



creatine kinase-M (MM-2): sc-69848. Western blot analysis of creatine kinase-M expression in HeLa (**A**) and SH-SY5Y (**B**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Fowler, E.D., et al. 2015. Decreased creatine kinase is linked to diastolic dysfunction in rats with right heart failure induced by pulmonary artery hypertension. J. Mol. Cell. Cardiol. 86: 1-8.

RESEARCH USE

For research use only, not for use in diagnostic procedures.