SANTA CRUZ BIOTECHNOLOGY, INC.

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



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. Kuman 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-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 Ca²⁺-pumps and in the maintenance of Ca²⁺-homeostasis.

REFERENCES

- 1. Mariman, E.C., et al. 1987. Structure and expression of the human creatine kinase B gene. Genomics 1: 126-137.
- 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.
- 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.
- Wallimann, T. and Hemmer, W. 1994. Creatine kinase in non-muscle tissues and cells. Mol. Cell. Biochem. 133-134: 193-220.
- 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 IgG1 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 μ g per 100-500 μ g 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 (r): sc-270230-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: HCT-116 whole cell lysate: sc-364175, HeLa whole cell lysate: sc-2200 or creatine kinase-M (h): 293T Lysate: sc-159316.

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.







creatine kinase-M (MM-2): sc-69848. Western blot analysis of creatine kinase-M expression in nontransfected 2931: sc-117752 (**A**), human creatine kinase-M transfected 2931: 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 K-562 (**A**) and HCT-116 (**B**) whole cell lysates. Detection reagent used: m-IgG Fc BP-HRP: sc-525409.

SELECT PRODUCT CITATIONS

 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.