SANTA CRUZ BIOTECHNOLOGY, INC.

creatine kinase-M (G-9): sc-365046

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.

CHROMOSOMAL LOCATION

Genetic locus: CKM (human) mapping to 19q13.32; Ckm (mouse) mapping to 7 A3.

SOURCE

creatine kinase-M (G-9) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 9-27 near the N-terminus of 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.

creatine kinase-M (G-9) is available conjugated to agarose (sc-365046 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-365046 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365046 PE), fluorescein (sc-365046 FITC), Alexa Fluor® 488 (sc-365046 AF488), Alexa Fluor® 546 (sc-365046 AF546), Alexa Fluor® 594 (sc-365046 AF594) or Alexa Fluor® 647 (sc-365046 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365046 AF680) or Alexa Fluor® 790 (sc-365046 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-365046 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

APPLICATIONS

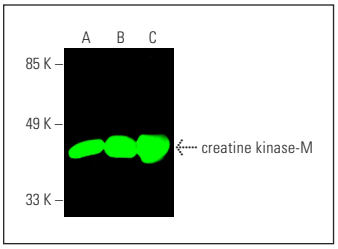
creatine kinase-M (G-9) is recommended for detection of creatine kinase-M chain of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 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). creatine kinase-M (G-9) is also recommended for detection of creatine kinase-M chain in additional species, including equine.

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.

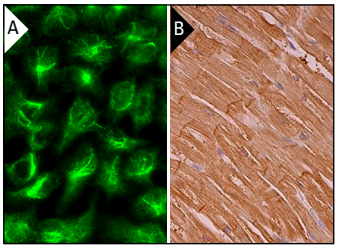
Molecular Weight of creatine kinase-M: 43 kDa.

Positive Controls: human heart extract: sc-363763, mouse skeletal muscle extract: sc-364250 or human skeletal muscle extract: sc-363776.

DATA



creatine kinase-M (G-9): sc-365046. Near-infrared western blot analysis of creatine kinase-M expression in human heart (**A**), mouse skeletal muscle (**B**) and human skeletal muscle (**C**) tissue extracts. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 680: sc-516180.



creatine kinase-M (G-9): sc-365046. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human heart muscle tissue showing cytoplasmic and intercalated disc staining of myocytes (**B**).

SELECT PRODUCT CITATIONS

1. Tobin, S.W., et al. 2016. Regulation of Hspb7 by MEF2 and AP-1: implications for Hspb7 in muscle atrophy. J. Cell Sci. 129: 4076-4090.
2. Katzeff, J.S., et al. 2020. Altered serum protein levels in frontotemporal dementia and amyotrophic lateral sclerosis indicate calcium and immunity dysregulation. Sci. Rep. 10: 13741.
3. Walker, M.A., et al. 2021. Acetylation of muscle creatine kinase negatively impacts high-energy phosphotransfer in heart failure. JCI Insight 6: 144301.
4. Tripathi, S., et al. 2022. TAZ exhibits phase separation properties and interacts with Smad7 and β-catenin to repress skeletal myogenesis. J. Cell Sci. 135: jcs259097.

RESEARCH USE

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