

MRCK α (B-3): sc-374568

BACKGROUND

Protein kinases comprise a large group of encoded factors that regulate cellular processes by catalyzing the transfer of a phosphate group to a hydroxyl acceptor in serine, threonine or tyrosine residues. Myotonic dystrophy kinase-related Cdc42-binding (DMPK-like) kinases- α and β (MRCK- α , β) contain a cysteine-rich motif and a putative pleckstrin homology domain. MRCKs can phosphorylate nonmuscle Myosin light chain and influences Actin-Myosin contractility. MRCK- α can phosphorylate and activate LIM kinases downstream of Cdc42, which leads to inactivation of ADF/Cofilin and to Actin cytoskeletal reorganization. MRCK- α can also influence neurite outgrowth promoted by Cdc42 and Rac.

CHROMOSOMAL LOCATION

Genetic locus: CDC42BPA (human) mapping to 1q42.13; Cdc42bpa (mouse) mapping to 1 H4.

SOURCE

MRCK α (B-3) is a mouse monoclonal antibody raised against amino acids 467-556 mapping within an internal region of MRCK α of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

MRCK α (B-3) is available conjugated to agarose (sc-374568 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-374568 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-374568 PE), fluorescein (sc-374568 FITC), Alexa Fluor® 488 (sc-374568 AF488), Alexa Fluor® 546 (sc-374568 AF546), Alexa Fluor® 594 (sc-374568 AF594) or Alexa Fluor® 647 (sc-374568 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-374568 AF680) or Alexa Fluor® 790 (sc-374568 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

MRCK α (B-3) is recommended for detection of MRCK α of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for MRCK α siRNA (h): sc-60058, MRCK α siRNA (m): sc-60059, MRCK α shRNA Plasmid (h): sc-60058-SH, MRCK α shRNA Plasmid (m): sc-60059-SH, MRCK α shRNA (h) Lentiviral Particles: sc-60058-V and MRCK α shRNA (m) Lentiviral Particles: sc-60059-V.

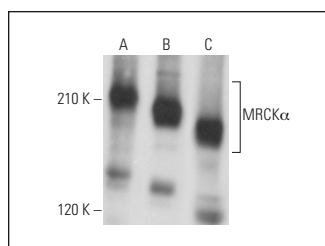
Molecular Weight of MRCK α : 190 kDa.

Positive Controls: rat brain extract: sc-2392, rat heart extract: sc-2393 or Neuro-2A whole cell lysate: sc-364185.

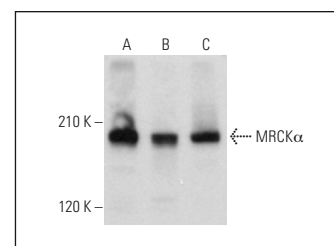
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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



MRCK α (B-3): sc-374568. Western blot analysis of MRCK α expression in rat brain (A), human brain (B) and rat heart (C) tissue extracts.



MRCK α (B-3): sc-374568. Western blot analysis of MRCK α expression in Neuro-2A (A), EOC 20 (B) and IMR-32 (C) whole cell lysates.

SELECT PRODUCT CITATIONS

- Shiraishi, A., et al. 2017. DOCK8 protein regulates macrophage migration through Cdc42 protein activation and LRAP35a protein interaction. *J. Biol. Chem.* 292: 2191-2202.
- Ge, J., et al. 2018. RhoA, Rac1 and Cdc42 differentially regulate α SMA and collagen I expression in mesenchymal stem cells. *J. Biol. Chem.* 293: 9358-9369.
- Ichikawa, R., et al. 2020. MicroRNA-126-3p suppresses HeLa cell proliferation, migration and invasion, and increases apoptosis via the PI3K/PDK1/Akt pathway. *Oncol. Rep.* 43: 1300-1308.
- Kwa, M.Q., et al. 2021. MRCK α is dispensable for breast cancer development in the MMTV-PyMT model. *Cells* 10: 942.
- Bai, H., et al. 2021. The Na⁺, K⁺-ATPase β 1 subunit regulates epithelial tight junctions via MRCK α . *JCI Insight* 6: e134881.

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.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA