

MKP-4 (D-3): sc-137010

BACKGROUND

Mitogen-activated protein (MAP) kinases are a large class of proteins involved in signal transduction pathways that are activated by a range of stimuli and mediate a number of physiological and pathological changes in the cell. Dual specificity phosphatases (DSPs) are a subclass of the protein tyrosine phosphatase (PTP) gene superfamily, which are selective for dephosphorylating critical phosphothreonine and phosphotyrosine residues within MAP kinases. DSP gene expression is induced by a host of growth factors and/or cellular stresses, thereby negatively regulating MAP kinase superfamily members, including MAPK/ERK, SAPK/JNK and p38. The members of the dual-specificity phosphatase protein family include MKP-1/CL100 (3CH134), VHR, PAC1, MKP-2, hVH-3 (B23), hVH-5, MKP-3, MKP-X and MKP-4. Human MKP-4 maps to chromosome Xq28 and encodes a 384 amino acid protein that selectively inhibits members of the ERK family of MAP kinases and is expressed only in placenta, kidney and fetal liver.

REFERENCES

1. Keyse, S.M. 1995. An emerging family of dual specificity MAP kinase phosphatases. *Biochim. Biophys. Acta* 1265: 152-160.
2. Muda, M., et al. 1997. Molecular cloning and functional characterization of a novel mitogen-activated protein kinase phosphatase, MKP-4. *J. Biol. Chem.* 272: 5141-5151.
3. Sun, H. 1998. Functional studies of dual specificity phosphatases. *Methods Mol. Biol.* 84: 307-318.

CHROMOSOMAL LOCATION

Genetic locus: DUSP9 (human) mapping to Xq28; Dusp9 (mouse) mapping to X A7.3.

SOURCE

MKP-4 (D-3) is a mouse monoclonal antibody raised against amino acids 340-384 mapping at the C-terminus of MKP-4 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

MKP-4 (D-3) is available conjugated to agarose (sc-137010 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-137010 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-137010 PE), fluorescein (sc-137010 FITC), Alexa Fluor® 488 (sc-137010 AF488), Alexa Fluor® 546 (sc-137010 AF546), Alexa Fluor® 594 (sc-137010 AF594) or Alexa Fluor® 647 (sc-137010 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-137010 AF680) or Alexa Fluor® 790 (sc-137010 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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

STORAGE

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

APPLICATIONS

MKP-4 (D-3) is recommended for detection of MKP-4 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).

Suitable for use as control antibody for MKP-4 siRNA (h): sc-39002, MKP-4 siRNA (m): sc-39003, MKP-4 shRNA Plasmid (h): sc-39002-SH, MKP-4 shRNA Plasmid (m): sc-39003-SH, MKP-4 shRNA (h) Lentiviral Particles: sc-39002-V and MKP-4 shRNA (m) Lentiviral Particles: sc-39003-V.

Molecular Weight of MKP-4: 42 kDa.

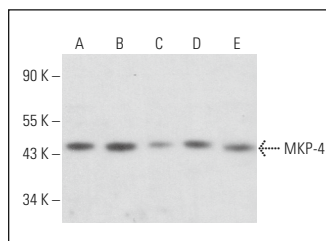
Positive Controls: A-431 whole cell lysate: sc-2201, Jurkat whole cell lysate: sc-2204 or HEK293 whole cell lysate: sc-45136.

RECOMMENDED SUPPORT REAGENTS

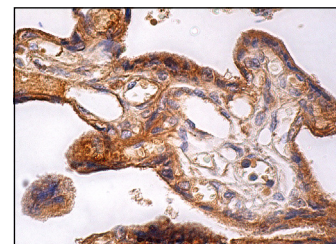
To ensure optimal results, the following support reagents are recommended:

- 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.
- 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



MKP-4 (D-3): sc-137010. Western blot analysis of MKP-4 expression in A-431 (A), Jurkat (B), NCI-H292 (C), HEK293 (D) and RT-4 (E) whole cell lysates.



MKP-4 (D-3): sc-137010. Immunoperoxidase staining of formalin fixed, paraffin-embedded human placenta tissue showing cytoplasmic staining of trophoblastic cells.

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.