SANTA CRUZ BIOTECHNOLOGY, INC.

ERK 3 (B-10): sc-365234



BACKGROUND

Mitogen-activated protein kinase (MAPK) signaling pathways involve closely related MAP kinases, including extracellular-signal-related kinase 3 (ERK 3, also designated PRKM6 and p97MAPK). Serum, growth factors and phorbol esters can initiate ERK 3 signaling pathways. Despite lacking a definitive nuclear localization sequence, ERK 3 constitutively localizes to the nucleus upon activation. p38 pathway activation-dependent upregulation of ERK 3 is independent of the status of p53, Bcl-2 and caspase-3 during cell stress and damage induced by proteasome inhibition, suggesting ERK 3 in part mediates intracellular defense or cell rescue. The human ERK 3 gene maps to chromosome 15q21.2 and encodes a 721 amino acid protein.

CHROMOSOMAL LOCATION

Genetic locus: MAPK6 (human) mapping to 15q21.2; Mapk6 (mouse) mapping to 9 D.

SOURCE

ERK 3 (B-10) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 345-377 within an internal region of ERK 3 of rat 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.

ERK 3 (B-10) is available conjugated to agarose (sc-365234 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-365234 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365234 PE), fluorescein (sc-365234 FITC), Alexa Fluor[®] 488 (sc-365234 AF488), Alexa Fluor[®] 546 (sc-365234 AF546), Alexa Fluor[®] 594 (sc-365234 AF594) or Alexa Fluor[®] 647 (sc-365234 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-365234 AF680) or Alexa Fluor[®] 790 (sc-365234 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-365234 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

ERK 3 (B-10) is recommended for detection of ERK 3 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), is to the section (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

ERK 3 (B-10) is also recommended for detection of ERK 3 in additional species, including equine, canine and porcine.

Suitable for use as control antibody for ERK 3 siRNA (h): sc-35337, ERK 3 siRNA (m): sc-35338, ERK 3 shRNA Plasmid (h): sc-35337-SH, ERK 3 shRNA Plasmid (m): sc-35338-SH, ERK 3 shRNA (h) Lentiviral Particles: sc-35337-V and ERK 3 shRNA (m) Lentiviral Particles: sc-35338-V.

Molecular Weight of ERK 3: 97 kDa.

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





ERK 3 (B-10): sc-365234. Western blot analysis of ERK 3 expression in PC-12 (A), K-562 (B), 3T3-L1 (C), RAW 264.7 (D) and C6 (E) whole cell lysates.

ERK 3 (B-10): sc-365234. Immunofluorescence staining of formalin-fixed Hep G2 cells showing nuclear localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human small intestine tissue showing cytoplasmic staining of glandular cells (B).

SELECT PRODUCT CITATIONS

- Yang, W., et al. 2016. Treatment with bone marrow mesenchymal stem cells combined with plumbagin alleviates spinal cord injury by affecting oxidative stress, inflammation, apoptotis and the activation of the Nrf2 pathway. Int. J. Mol. Med. 37: 1075-1082.
- 2. Cai, Q., et al. 2021. MAPK6-Akt signaling promotes tumor growth and resistance to mTOR kinase blockade. Sci. Adv. 7: eabi6439.
- Jin, Y., et al. 2022. Inactivation of EGLN3 hydroxylase facilitates ERK 3 degradation via autophagy and impedes lung cancer growth. Oncogene 41: 1752-1766.

STORAGE

Store at 4° C, **D0 NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

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.

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