

ERK 3 (E-3): sc-374239

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.

REFERENCES

- Meloche, S., et al. 1996. Primary structure, expression and chromosomal locus of a human homolog of rat ERK 3. *Oncogene* 13: 1575-1579.
- Zimmermann, J., et al. 2001. Proteasome- and p38-dependent regulation of ERK 3 expression. *J. Biol. Chem.* 276: 10759-10766.
- Robinson, M.J., et al. 2002. Different domains of the mitogen-activated protein kinases ERK 3 and ERK 2 direct subcellular localization and upstream specificity *in vivo*. *J. Biol. Chem.* 277: 5094-5100.
- Kant, S., et al. 2006. Characterization of the atypical MAPK ERK 4 and its activation of the MAPK-activated protein kinase MK5. *J. Biol. Chem.* 281: 35511-35519.
- Hoeflich, K.P., et al. 2006. Regulation of ERK 3/MAPK6 expression by BRAF. *Int. J. Oncol.* 29: 839-849.
- Anhe, G.F., et al. 2006. ERK 3 associates with MAP-2 and is involved in glucose-induced Insulin secretion. *Mol. Cell. Endocrinol.* 251: 33-41.
- Di Benedetto, B., et al. 2007. Differential mRNA distribution of components of the ERK/MAPK signalling cascade in the adult mouse brain. *J. Comp. Neurol.* 500: 542-556.

CHROMOSOMAL LOCATION

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

SOURCE

ERK 3 (E-3) is a mouse monoclonal antibody raised against amino acids 565-721 mapping at the C-terminus of ERK 3 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

ERK 3 (E-3) 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), 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 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.

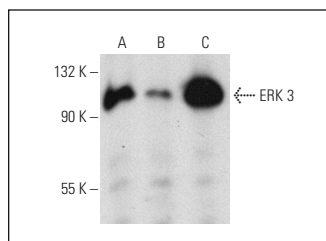
Molecular Weight of ERK 3: 97 kDa.

Positive Controls: KNRK whole cell lysate: sc-2214, RAW 264.7 whole cell lysate: sc-2211 or K-562 whole cell lysate: sc-2203.

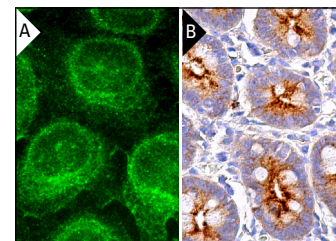
RECOMMENDED SUPPORT REAGENTS

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 (E-3): sc-374239. Western blot analysis of ERK 3 expression in K-562 (A), RAW 264.7 (B) and KNRK (C) whole cell lysates.



ERK 3 (E-3): sc-374239. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue showing cytoplasmic staining of glandular cells (B).

SELECT PRODUCT CITATIONS

- Guo, X., et al. 2018. RP105 ameliorates hypoxia/reoxygenation injury in cardiac microvascular endothelial cells by suppressing TLR4/MAPKs/ NFκB signaling. *Int. J. Mol. Med.* 42: 505-513.

RESEARCH USE

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