SANTA CRUZ BIOTECHNOLOGY, INC.

ERK 5 (L-19): sc-1285

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The activation of signal transduction pathways by growth factors, hormones and neurotransmitters is mediated through two closely related MAP kinases, p44 and p42, designated extracellular-signal related kinase 1 (ERK 1) and ERK 2, respectively. ERK proteins are regulated by dual phosphorylation at specific tyrosine and threonine sites mapping within a characteristic Thr-Glu-Tyr motif. Phosphorylation at both the Thr and Tyr residues is required for full enzymatic activation. In response to activation, MAP kinases phosphorylate downstream components on serine and threonine. Upstream MAP kinase regulators include MAP kinase kinase (MEK), MEK kinase and Raf-1. The ERK family has three additional members: ERK 3, ERK 5 and ERK 6.

REFERENCES

1. Boulton, T.G., et al. 1991. ERKs: a family of protein-serine/threonine kinases that are activated and tyrosine phosphorylated in response to Insulin and NGF. Cell 65: 663-675.
2. Boulton, T.G., et al. 1991. Purification and properties of ERK 1, an Insulin-stimulated MAP2 protein kinase. Biochemistry 30: 278-286.
3. Payne, D.M., et al. 1991. Identification of the regulatory phosphorylation sites in pp42/mitogen-activated protein kinase (MAP kinase). EMBO J. 10: 885-892.
4. Haycock, J.W., et al. 1992. ERK 1 and ERK 2, two microtubule-associated protein 2 kinases, mediate the phosphorylation of tyrosine hydroxylase at Serine 31 *in situ*. Proc. Natl. Acad. Sci. USA 89: 2365-2369.
5. Crews, C.M., et al. 1992. Purification of a murine protein-tyrosine/threonine kinase that phosphorylates and activates the Erk-1 gene product: relationship to the fission yeast Byr1 gene product. Proc. Natl. Acad. Sci. USA 89: 8205-8209.

CHROMOSOMAL LOCATION

Genetic locus: MAPK7 (human) mapping to 17p11.2; Mapk7 (mouse) mapping to 11 B2.

SOURCE

ERK 5 (L-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of ERK 5 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-1285 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

Store at 4° C, **DO 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.

APPLICATIONS

ERK 5 (L-19) is recommended for detection of ERK 5 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

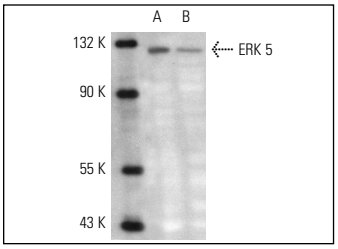
ERK 5 (L-19) is also recommended for detection of ERK 5 in additional species, including canine and bovine.

Suitable for use as control antibody for ERK 5 siRNA (h): sc-35339, ERK 5 siRNA (m): sc-35340, ERK 5 shRNA Plasmid (h): sc-35339-SH, ERK 5 shRNA Plasmid (m): sc-35340-SH, ERK 5 shRNA (h) Lentiviral Particles: sc-35339-V and ERK 5 shRNA (m) Lentiviral Particles: sc-35340-V.

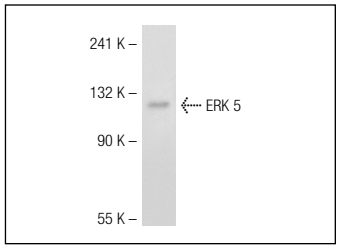
Molecular Weight of ERK 5: 123 kDa.

Positive Controls: HUV-EC-C whole cell lysate: sc-364180, A-10 cell lysate: sc-3806 or A-673 cell lysate: sc-2414.

DATA



ERK 5 (L-19): sc-1285. Western blot analysis of ERK 5 expression in A-10 (**A**) and A-673 (**B**) whole cell lysates.



ERK 5 (L-19): sc-1285. Western blot analysis of ERK 5 expression in HUV-EC-C whole cell lysate.

SELECT PRODUCT CITATIONS

1. Wang, Y., et al. 2004. Entire mitogen activated protein kinase (MAPK) pathway is present in preimplantation mouse embryos. Dev. Dyn. 231: 72-87.
2. Hii, C., et al. 2004. Characterization of the MEK5-ERK5 module in human neutrophils and its relationship to ERK1/ERK2 in the chemotactic response. J. Biol. Chem. 279: 49825-49834.
3. Liu, J., et al. 2004. Serine-threonine kinases and transcription factors active in signal transduction are detected at high levels of phosphorylation during mitosis in preimplantation embryos and trophoblast stem cells. Reproduction 128: 643-654.
4. Nakamura, K., et al. 2010. Activity assays for extracellular signal-regulated kinase 5. Methods Mol. Biol. 661: 91-106.