

## ERK 5 (N-19): sc-1286

### 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. The primary structure of MEK, a protein kinase that phosphorylates the ERK gene product. *Science* 258: 478-480.

### CHROMOSOMAL LOCATION

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

### SOURCE

ERK 5 (N-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-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-1286 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

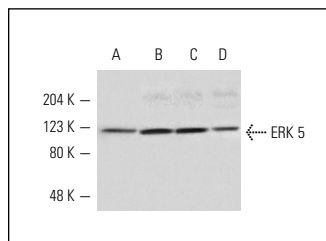
ERK 5 (N-19) is recommended for detection of ERK 5 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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 HeLa whole cell lysate: sc-2200.

### DATA



ERK 5 (N-19): sc-1286. Western blot analysis of ERK 5 expression in HUV-EC (A), Caki-1 (B), HeLa (C) and A-10 (D) whole cell lysates.

### SELECT PRODUCT CITATIONS

1. Li, J.M., et al. 2002. Activation of NADPH oxidase during progression of cardiac hypertrophy to failure. *Hypertension* 40: 477-484.
2. Raviv, Z., et al. 2004. MEK-5 and ERK 5 are localized in the nuclei of resting as well as stimulated cells, while MEKK2 translocates from the cytosol to the nucleus upon stimulation. *J. Cell Sci.* 117: 1773-1784.
3. Nakamura, K., et al. 2010. Activity assays for extracellular signal-regulated kinase 5. *Methods Mol. Biol.* 661: 91-106.

### PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.



Try **ERK 5 (C-7): sc-398015** or **ERK 5 (C-11): sc-393405**, our highly recommended monoclonal alternatives to ERK 5 (N-19).