

ERK 1 (m): 293T Lysate: sc-126806

BACKGROUND

Mitogen-activated protein kinase (MAPK) signaling pathways involve two closely related MAP kinases, known as extracellular-signal-related kinase 1 (ERK 1, p44) and 2 (ERK 2, p42). Growth factors, steroid hormones, G protein-coupled receptor ligands and neurotransmitters can initiate MAPK signaling pathways. Activation of ERK 1 and ERK 2 requires phosphorylation by upstream kinases, such as MAP kinase kinase (MEK), MEK kinase and Raf-1. ERK 1 and ERK 2 phosphorylation can occur at specific tyrosine and threonine sites, mapping within consensus motifs that include the threonine-glutamate-tyrosine motif. ERK activation leads to dimerization with other ERKs and subsequent localization to the nucleus. Active ERK dimers phosphorylate serine and threonine residues on nuclear proteins and influence a host of responses that include proliferation, differentiation, transcription regulation and development. The human ERK 1 gene maps to chromosome 16p11.2 and encodes a 379 amino acid protein that shares 83% sequence identity to ERK 2.

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. Crews, C.M., et al. 1992. The primary structure of MEK, a protein kinase that phosphorylates the ERK gene product. *Science* 258: 478-480.
3. 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.
4. Charest, D.L., et al. 1993. Molecular cloning, expression, and characterization of the human mitogen-activated protein kinase p44 ERK 1. *Mol. Cell. Biol.* 13: 4679-4690.
5. Khokhlatchev, A.V., et al. 1998. Phosphorylation of the MAP kinase ERK 2 promotes its homodimerization and nuclear translocation. *Cell* 93: 605-615.
6. Pages, G., et al. 2000. Signaling angiogenesis via p42/p44 MAP kinase cascade. *Ann. N.Y. Acad. Sci.* 902: 187-200.

CHROMOSOMAL LOCATION

Genetic locus: Mapk3 (mouse) mapping to 7 F3.

PRODUCT

ERK 1 (m): 293T Lysate represents a lysate of mouse ERK 1 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

ERK 1 (m): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive ERK 1 antibodies. Recommended use: 10-20 µl per lane.

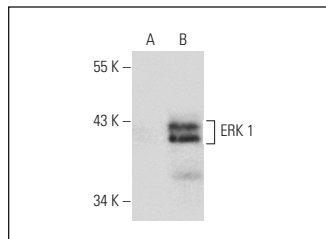
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

ERK 1 (G-8): sc-271269 is recommended as a positive control antibody for Western Blot analysis of enhanced mouse ERK 1 expression in ERK 1 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

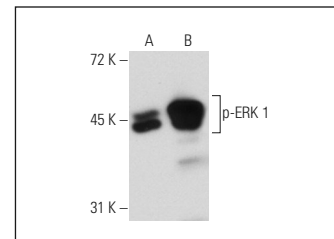
STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

DATA



ERK 1 (G-8): sc-271269. Western blot analysis of ERK 1 expression in non-transfected: sc-117752 (A) and mouse ERK 1 transfected: sc-126806 (B) 293T whole cell lysates.



p-ERK (E-4): sc-7383. Western blot analysis of ERK 1 phosphorylation in non-transfected: sc-117752 (A) and mouse ERK 1 transfected: sc-126806 (B) 293T whole cell lysates.

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.