

ERK 1 (G-12): sc-376852

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.

CHROMOSOMAL LOCATION

Genetic locus: MAPK3 (human) mapping to 16p11.2; Mapk3 (mouse) mapping to 7 F3.

SOURCE

ERK 1 (G-12) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 341-367 at the C-terminus of ERK 1 of rat 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.

Blocking peptide available for competition studies, sc-376852 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

ERK 1 (G-12) is recommended for detection of ERK 1 p44 of mouse, rat, human, chicken and frog 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for ERK 1 siRNA (h): sc-29307, ERK 1 siRNA (m): sc-29308, ERK 1 siRNA (r): sc-156030, ERK 1 shRNA Plasmid (h): sc-29307-SH, ERK 1 shRNA Plasmid (m): sc-29308-SH, ERK 1 shRNA Plasmid (r): sc-156030-SH, ERK 1 shRNA (h) Lentiviral Particles: sc-29307-V, ERK 1 shRNA (m) Lentiviral Particles: sc-29308-V and ERK 1 shRNA (r) Lentiviral Particles: sc-156030-V.

Molecular Weight of ERK 1: 44 kDa.

Positive Controls: KNRK whole cell lysate: sc-2214, DU 145 cell lysate: sc-2268 or HEL 92.1.7 cell lysate: sc-2270.

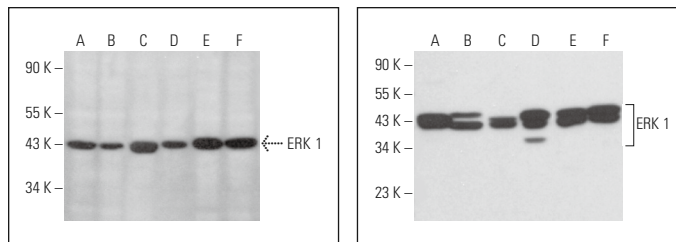
RESEARCH USE

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

STORAGE

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

DATA



ERK 1 (G-12): sc-376852. Western blot analysis of ERK 1 expression in HeLa (A), MCF7 (B), DU 145 (C), NIH/3T3 (D), KNRK (E) and 3611-RF (F) whole cell lysates.

ERK 1 (G-12): sc-376852. Western blot analysis of ERK 1 expression in DU 145 (A), PC-3 (B), HEL 92.1.7 (C), AT3B-1 (D), F9 (E) and RAW 264.7 (F) whole cell lysates.

SELECT PRODUCT CITATIONS

- Ye, Q., et al. 2014. Lactoferrin deficiency promotes colitis-associated colorectal dysplasia in mice. *PLoS ONE* 9: e103298.
- Wang, J., et al. 2016. Co-culture of bone marrow stem cells and macrophages indicates intermediate mechanism between local inflammation and innate immune system in diabetic periodontitis. *Exp. Ther. Med.* 12: 567-572.
- Westcott, N.P., et al. 2017. Chemical proteomics reveals ADP-ribosylation of small GTPases during oxidative stress. *Nat. Chem. Biol.* 13: 302-308.
- Chen, P.C., et al. 2018. Anti-metastatic effects of antrodan with and without cisplatin on lewis lung carcinomas in a mouse xenograft model. *Int. J. Mol. Sci.* 19: 1565.
- Luo, W., et al. 2019. c-Myc inhibits myoblast differentiation and promotes myoblast proliferation and muscle fibre hypertrophy by regulating the expression of its target genes, miRNAs and lincRNAs. *Cell Death Differ.* 26: 426-442.
- Song, S.B., et al. 2020. High levels of ROS impair lysosomal acidity and autophagy flux in glucose-deprived fibroblasts by activating ATM and Erk pathways. *Biomolecules* 10: 761.
- Li, D., et al. 2021. Involvement of supraoptic astrocytes in basilar artery occlusion-evoked differential activation of vasopressin neurons and vasopressin secretion in rats. *Neurochem. Res.* 46: 2651-2661.
- Luo, W., et al. 2021. TMEM182 interacts with Integrin β1 and regulates myoblast differentiation and muscle regeneration. *J. Cachexia Sarcopenia Muscle* 12: 1704-1723.



See **ERK 1 (G-8): sc-271269** for ERK 1 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.