

ERK 2 (C-14): sc-154



The Power to Question

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.

CHROMOSOMAL LOCATION

Genetic locus: MAPK1 (human) mapping to 22q11.21, MAPK3 (human) mapping to 16p11.2; Mapk1 (mouse) mapping to 16 A3, Mapk3 (mouse) mapping to 7 F3.

SOURCE

ERK 2 (C-14) is available as either rabbit (sc-154) or goat (sc-154-G) affinity purified polyclonal antibody raised against a peptide mapping at the C-terminus of ERK 2 of rat origin.

PRODUCT

Each vial contains either 100 µg (sc-154) or 200 µg (sc-154-G) IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-154 P; (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as phycoerythrin conjugate for flow cytometry, sc-154 PE, 100 tests, agarose conjugate for immunoprecipitation, sc-154 AC, 500 µg/0.25 ml agarose in 1 ml., fluorescein (sc-154 FITC) or rhodamine (sc-154 TRITC) conjugates for immunofluorescence, 200 µg/1 ml., Alexa Fluor® 405 (sc-154 AF405), Alexa Fluor® 488 (sc-154 AF488) or Alexa Fluor® 647 (sc-154 AF647) conjugates for flow cytometry or immunofluorescence; 100 µg/2 ml.

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APPLICATIONS

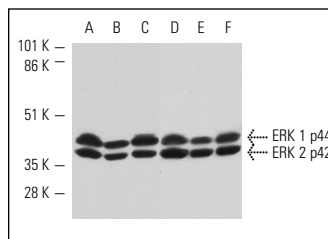
ERK 2 (C-14) is recommended for detection of ERK 2 p42 and, to a lesser extent, ERK 1 p44 of mouse, rat, human, *Xenopus laevis* and zebrafish origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500), flow cytometry (1 µg per 1 x 10⁶ cells) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000). ERK 2 (C-14) is also recommended for detection of ERK 2 p42 and, to a lesser extent, ERK 1 p44 in additional species, including equine, canine, bovine, porcine and avian.

Molecular Weight of ERK 2: 42 kDa.

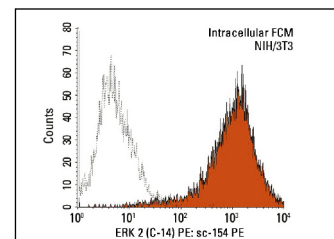
STORAGE

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

DATA



Western blot analysis of ERK in 3611-RF (A,D), NIH/3T3 (B,E) and KNRK (C,F) whole cell lysates. Antibodies tested include ERK 1 (K-23)-G: sc-94-G (A-C) and ERK 2 (C-14)-G: sc-154-G (D-F).



ERK 2 (C-14) PE: sc-154 PE. Intracellular FCM analysis of fixed and permeabilized NIH/3T3 cells. Black line histogram represents the isotype control, normal rabbit IgG: sc-3871.

SELECT PRODUCT CITATIONS

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- Gusan, S., et al. 2013. cAMP attenuates the enhanced expression of G_i proteins and hyperproliferation of vascular smooth muscle cells from SHR: role of ROS and ROS-mediated signaling. *Am. J. Physiol., Cell Physiol.* 304: C1198-C1209.
- Blich, M., et al. 2013. Macrophage activation by heparanase is mediated by TLR-2 and TLR-4 and associates with plaque progression. *Arterioscler. Thromb. Vasc. Biol.* 33: e56-e65.
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- Vinay, P.V., et al. 2013. Geldanamycin combination with colcemid induces mitotic arrest through stabilization of bubR1 mitotic kinase in human tumor cells. *J. Cancer Ther.* 4: 709-719.
- Tai, T.S., et al. 2013. GATA-3 regulates the homeostasis and activation of CD8⁺ T cells. *J. Immunol.* 190: 428-437.
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- Morales-Cano, D., et al. 2013. Apoptosis induced by paclitaxel via Bcl-2, Bax and caspases 3 and 9 activation in NB4 human leukaemia cells is not modulated by ERK inhibition. *Exp. Toxicol. Pathol.* 65: 1101-1108.

RESEARCH USE

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