

p-ERK 5 (Thr 218/Tyr 220): sc-16564

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. MAP kinases require dual phosphorylation on threonine 218 and tyrosine 220 residues in order to gain enzymatic activity. 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.

CHROMOSOMAL LOCATION

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

SOURCE

p-ERK 5 (Thr 218/Tyr 220) is available as either goat (sc-16564) or rabbit (sc-16564-R) polyclonal affinity purified antibody raised against a short amino acid sequence containing Thr 218 and Tyr 220 phosphorylated 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-16564 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

p-ERK 5 (Thr 218/Tyr 220) is recommended for detection of Thr 218 and Tyr 220 dually phosphorylated 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).

p-ERK 5 (Thr 218/Tyr 220) is also recommended for detection of correspondingly phosphorylated 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 p-ERK 1: 44 kDa.

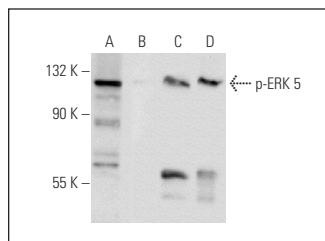
Molecular Weight of p-ERK 2: 42 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210 or HeLa whole cell lysate: sc-2200.

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 5 phosphorylation in untreated (A, C) and lambda protein phosphatase treated (B, D) NIH/3T3 whole cell lysates. Antibodies tested include p-ERK 5 (Thr 218/Tyr 220)-R: sc-16564-R (A, B) and ERK 5 (C-20)-R: sc-1284-R (C, D).

SELECT PRODUCT CITATIONS

- Wang, R.M., et al. 2005. Activation of extracellular signal-regulated kinase 5 may play a neuroprotective role in hippocampal CA3/DG region after cerebral ischemia. *J. Neurosci. Res.* 80: 391-399.
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- Clark, P.R., et al. 2011. MEK5 is activated by shear stress, activates ERK5 and induces KLF4 to modulate TNF responses in human dermal microvascular endothelial cells. *Microcirculation* 18: 102-117.
- Hughes, R., et al. 2011. The MEK-ERK pathway negatively regulates bim expression through the 3' UTR in sympathetic neurons. *BMC Neurosci.* 12: 69.
- Jiang, H., et al. 2014. Restoration of MiR-17/20a in solid tumor cells enhances the natural killer cell anti-tumor activity by targeting Mekk2. *Cancer Immunol. Res.* 2: 789-799.
- Meister, M., et al. 2014. Role of dynamin and clathrin in the cellular trafficking of flotillins. *FEBS J.* 281: 2956-2976.
- Hsieh, Y.L., et al. 2014. Effects of garlic oil on interleukin-6 mediated cardiac hypertrophy in hypercholesterol-fed hamsters. *Chin. J. Physiol.* 57: 320-328.

RESEARCH USE

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



MONOS
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Try **p-ERK 5 (36.T218/Y220): sc-135761** or **p-ERK 5 (1.T218/Y220): sc-135760**, our highly recommended monoclonal alternatives to p-ERK 5 (Thr 218/Tyr 220).