

p-ERK 1/2 (pT202/pY204.22A): sc-136521

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 Tyrosine 204 and 187 and Threonine 177 and 160 residues mapping within a characteristic Thr-Glu-Tyr motif. Phosphorylation at both the Threonine 202 and Tyrosine 204 residues of ERK 1 and Threonine 185 and Tyrosine 187 residues of ERK 2 is required for full enzymatic activation. The structural consequences of dual-phosphorylation in the ERK 2 include active site closure, alignment of key catalytic residues that interact with ATP, and remodeling of the activation loop. 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: MAPK3 (human) mapping to 16p11.2, MAPK1 (human) mapping to 22q11.21; Mapk3 (mouse) mapping to 7 F3, Mapk1 (mouse) mapping to 16 A3.

SOURCE

p-ERK 1/2 (pT202/pY204.22A) is a mouse monoclonal antibody raised against a short amino acid sequence containing Thr 202 and Tyr 204 dually phosphorylated 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.

p-ERK 1/2 (pT202/pY204.22A) is available conjugated to agarose (sc-136521 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; and to HRP (sc-136521 HRP), 200 µg/ml, for WB, IHC(P) and ELISA.

APPLICATIONS

p-ERK 1/2 (pT202/pY204.22A) is recommended for detection of Thr 202 and Tyr 204 dually phosphorylated ERK 1 of human origin, correspondingly Thr 203 and Tyr 205 dually phosphorylated ERK 1 of mouse and rat origin; and Thr 185 and Tyr 187 dually phosphorylated ERK 2 of human origin, correspondingly Thr 183 and Tyr 185 dually phosphorylated ERK 2 of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Molecular Weight of p-ERK 1/2: 44/42 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, Jurkat whole cell lysate: sc-2204 or HeLa whole cell lysate: sc-2200.

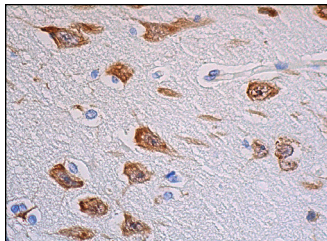
STORAGE

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

RESEARCH USE

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

DATA



p-ERK 1/2 (pT202/pY204.22A): sc-136521. Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebral cortex tissue showing cytoplasmic and nuclear staining of neuronal cells.

SELECT PRODUCT CITATIONS

- Kampen, G.T., et al. 2000. Eotaxin induces degranulation and chemotaxis of eosinophils through the activation of ERK 2 and p38 mitogen-activated protein kinases. *Blood* 95: 1911-1917.
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- Castorina, A., et al. 2014. PACAP and VIP increase the expression of myelin-related proteins in rat schwannoma cells: involvement of PAC1/VPAC2 receptor-mediated activation of PI3K/Akt signaling pathways. *Exp. Cell Res.* 322: 108-121.
- Yuan, L., et al. 2015. Deubiquitylase OTUD3 regulates PTEN stability and suppresses tumorigenesis. *Nat. Cell Biol.* 17: 1169-1181.
- Stucky, A., et al. 2016. Prenatal cocaine exposure upregulates BDNF-TrkB signaling. *PLoS ONE* 11: e0160585.
- Mass, E., et al. 2017. A somatic mutation in erythro-myeloid progenitors causes neurodegenerative disease. *Nature* 549: 389-393.
- Wang, W., et al. 2018. Human nasopharyngeal carcinoma can be radiosensitized by trichostanthin via inhibition of the PI3K pathway. *Exp. Ther. Med.* 16: 4181-4186.
- Gurdal, H., et al. 2019. Partial agonistic effect of cetuximab on epidermal growth factor receptor and Src kinase activation in triple-negative breast cancer cell lines. *Int. J. Oncol.* 54: 1345-1356.
- Du, G., et al. 2020. Targeting Src family kinase member Fyn by Saracatinib attenuated liver fibrosis *in vitro* and *in vivo*. *Cell Death Dis.* 11: 118.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.