SANTA CRUZ BIOTECHNOLOGY, INC.

p-ERK 5 (1.T218/Y220): sc-135760

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 (1.T218/Y220) is a mouse monoclonal antibody raised against a short amino acid sequence containing Thr 218 and Tyr 220 dually phosphorylated ERK 5 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

p-ERK 5 (1.T218/Y220) is available conjugated to agarose (sc-135760 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-135760 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-135760 PE), fluorescein (sc-135760 FITC), Alexa Fluor® 488 (sc-135760 AF488), Alexa Fluor® 546 (sc-135760 AF546), Alexa Fluor® 594 (sc-135760 AF594) or Alexa Fluor® 647 (sc-135760 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-135760 AF680) or Alexa Fluor® 790 (sc-135760 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

p-ERK 5 (1.T218/Y220) 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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.

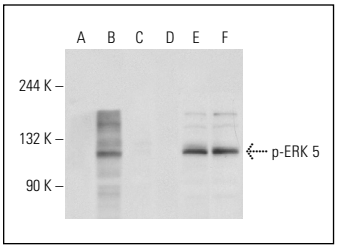
Molecular Weight of p-ERK 5: 123 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent), Lambda Phosphatase: sc-200312A and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



Western blot analysis of ERK 5 phosphorylation in untreated (**A**,**D**), EGF treated (**B**,**E**) and EGF and lambda protein phosphatase treated (**C**,**F**) HeLa whole cell lysates. Antibodies tested include p-ERK 5 (1.T218/Y220): sc-135760 (**A**,**B**,**C**) and ERK 5 (C-20)-R: sc-1284-R (**D**,**E**,**F**).

SELECT PRODUCT CITATIONS

1. Craig, E.A., et al. 2010. TGFβ2-mediated production of hyaluronan is important for the induction of epicardial cell differentiation and invasion. Exp. Cell Res. 316: 3397-3405.
2. Huang, T., et al. 2014. Cardiac epithelial-mesenchymal transition is blocked by monomethylarsonous acid (III). Toxicol. Sci. 142: 225-238.
3. Madak-Erdogan, Z., et al. 2014. Novel roles for ERK5 and cofilin as critical mediators linking ERα-driven transcription, Actin reorganization, and invasiveness in breast cancer. Mol. Cancer Res. 12: 714-727.
4. Yu, T., et al. 2019. Sublytic C5b-9 induces proliferation of glomerular mesangial cells via ERK5/MZF1/RGC-32 axis activated by FBXO28-TRAF6 complex. J. Cell. Mol. Med. 23: 5654-5671.
5. Sun, Y., et al. 2020. Liraglutide promotes osteoblastic differentiation in MC3T3-E1 cells by ERK5 pathway. Int. J. Endocrinol. 2020: 8821077.
6. Chiang, M.T., et al. 2021. Gal-1 (galectin-1) upregulation contributes to abdominal aortic aneurysm progression by enhancing vascular inflammation. Arterioscler. Thromb. Vasc. Biol. 41: 331-345.
7. Kim, M., et al. 2022. *Trichosanthes kirilowii* extract promotes wound healing through the phosphorylation of ERK1/2 in keratinocytes. Biomimetics 7: 154.

RESEARCH USE

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