

# ERK 5 (C-11): sc-393405

## 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. Phosphorylation at both the Thr and Tyr residues is required for full enzymatic activation. 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.

## REFERENCES

1. Boulton, T.G., et al. 1991. ERKs: a family of protein-serine/threonine kinases that are activated and tyrosine phosphorylated in response to Insulin and NGF. *Cell* 65: 663-675.
2. Boulton, T.G., et al. 1991. Purification and properties of ERK 1, an Insulin-stimulated MAP2 protein kinase. *Biochemistry* 30: 278-286.
3. Payne, D.M., et al. 1991. Identification of the regulatory phosphorylation sites in pp42/mitogen-activated protein kinase (MAP kinase). *EMBO J.* 10: 885-892.

## CHROMOSOMAL LOCATION

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

## SOURCE

ERK 5 (C-11) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 786-815 C-terminus of ERK 5 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

ERK 5 (C-11) is available conjugated to agarose (sc-393405 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-393405 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393405 PE), fluorescein (sc-393405 FITC), Alexa Fluor® 488 (sc-393405 AF488), Alexa Fluor® 546 (sc-393405 AF546), Alexa Fluor® 594 (sc-393405 AF594) or Alexa Fluor® 647 (sc-393405 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-393405 AF680) or Alexa Fluor® 790 (sc-393405 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-393405 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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## STORAGE

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

## APPLICATIONS

ERK 5 (C-11) is recommended for detection of ERK 5 of mouse, rat and human 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 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.

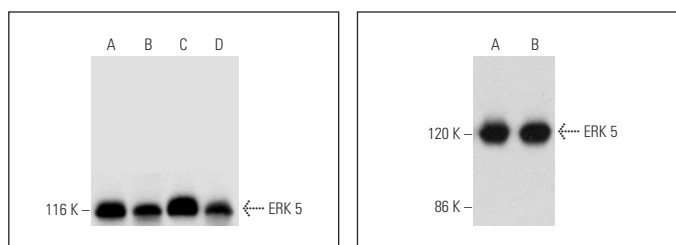
Molecular Weight of ERK 5: 123 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, HUV-EC-C whole cell lysate: sc-364180 or A549 cell lysate: sc-2413.

## 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, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## DATA



ERK 5 (C-11): sc-393405. Western blot analysis of ERK 5 expression in HeLa (A), HUV-EC-C (B), A549 (C) and PC-3 (D) whole cell lysates.

ERK 5 (C-11): sc-393405. Western blot analysis of ERK 5 expression in Hep G2 (A) and Caki-1 (B) whole cell lysates.

## SELECT PRODUCT CITATIONS

1. 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.
2. Miao, W. and Wang, Y. 2019. Quantitative interrogation of the human kinome perturbed by two BRAF inhibitors. *J. Proteome Res.* 18: 2624-2631.

## RESEARCH USE

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