

# ERK 5 (C-7): sc-398015

## 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.

## CHROMOSOMAL LOCATION

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

## SOURCE

ERK 5 (C-7) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 671-698 near the 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-7) is available conjugated to agarose (sc-398015 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-398015 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398015 PE), fluorescein (sc-398015 FITC), Alexa Fluor<sup>®</sup> 488 (sc-398015 AF488), Alexa Fluor<sup>®</sup> 546 (sc-398015 AF546), Alexa Fluor<sup>®</sup> 594 (sc-398015 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-398015 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-398015 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-398015 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-398015 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

## APPLICATIONS

ERK 5 (C-7) 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

ERK 5 (C-7) is also recommended for detection of ERK 5 in additional species, including canine and bovine.

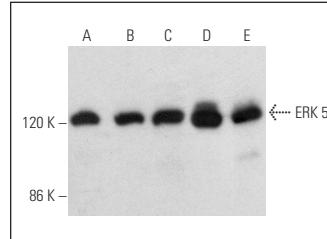
Suitable for use as control antibody for ERK 5 siRNA (h): sc-35339, ERK 5 siRNA (m): sc-35340, ERK 5 shRNA Plasmid (h): sc-35339-SH, ERK 5 shRNA Plasmid (m): sc-35340-SH, ERK 5 shRNA (h) Lentiviral Particles: sc-35339-V and ERK 5 shRNA (m) Lentiviral Particles: sc-35340-V.

Molecular Weight of ERK 5: 123 kDa.

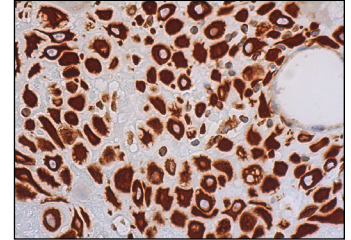
## STORAGE

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

## DATA



ERK 5 (C-7): sc-398015. Western blot analysis of ERK 5 expression in Caki-1 (A), Hep G2 (B), RAW 264.7 (C), A-10 (D) and PC-12 (E) whole cell lysates.



ERK 5 (C-7): sc-398015. Immunoperoxidase staining of formalin fixed, paraffin-embedded human placenta tissue showing either cytoplasmic or cytoplasmic and nuclear staining of decidual cells.

## SELECT PRODUCT CITATIONS

- Tusa, I., et al. 2018. ERK 5 is activated by oncogenic BRAF and promotes melanoma growth. *Oncogene* 37: 2601-2614.
- Xiong, Y., et al. 2019. ERK 5-regulated RERG expression promotes cancer progression in prostatic carcinoma. *Oncol. Rep.* 41: 1160-1168.
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- Hori, M., et al. 2020. Down-regulation of ceramide kinase via proteasome and lysosome pathways in PC12 cells by serum withdrawal: its protection by nerve growth factor and role in exocytosis. *Biochim. Biophys. Acta Mol. Cell Res.* 1867: 118714.
- Carmell, N., et al. 2021. Identification and validation of ERK 5 as a DNA damage modulating drug target in glioblastoma. *Cancers* 13: 944.
- Gentilini, A., et al. 2021. Extracellular signal-regulated kinase 5 regulates the malignant phenotype of cholangiocarcinoma cells. *Hepatology* 74: 2007-2020.
- Ho, T.J., et al. 2022. Arecoline induces cardiotoxicity by upregulating and activating cardiac hypertrophy-related pathways in Sprague-Dawley rats. *Chem. Biol. Interact.* 354: 109810.
- Monti, M., et al. 2022. Clinical significance and regulation of ERK5 expression and function in cancer. *Cancers* 14: 348.
- 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.

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