SANTA CRUZ BIOTECHNOLOGY, INC.

ERK 5 (C-20): sc-1284

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. 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-20) is available as either goat (sc-1284) or rabbit (sc-1284-R) affinity purified polyclonal antibody raised against a peptide mapping at the C-terminus of 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-1284 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as phycoerythrin (sc-1284 PE) conjugate for flow cytometry, 100 tests.

Available as agarose (sc-1284 AC) conjugate for immunoprecipitation, 500 µg/0.25 ml agarose in 1 ml.

APPLICATIONS

ERK 5 (C-20) is recommended for detection of 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500), flow cytometry (1 µg per 1 x 10^6 cells) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

ERK 5 (C-20) 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.

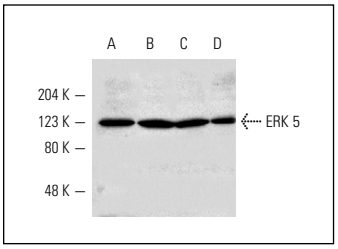
STORAGE

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

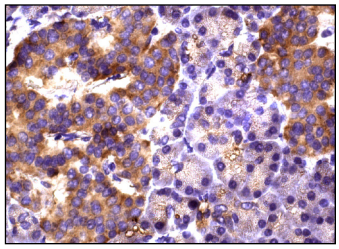
RESEARCH USE

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

DATA



ERK 5 (C-20): sc-1284. Western blot analysis of ERK 5 expression in HUV-EC-C (**A**), Caki-1 (**B**), HeLa (**C**) and A-10 (**D**) whole cell lysates.



ERK 5 (C-20): sc-1284. Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing cytoplasmic staining of islet of langerhans cells.

SELECT PRODUCT CITATIONS

1. Yang, C.C., et al. 1998. Interaction of myocyte enhancer factor 2 (MEF-2) with a mitogen-activated protein kinase, ERK 5/BMK1. Nucleic Acids Res. 26: 4771-4777.
2. Arnoux, V., et al. 2008. Erk5 controls Slug expression and keratinocyte activation during wound healing. Mol. Biol. Cell 19: 4738-4749.
3. Rovida, E., et al. 2008. ERK5/BMK1 is indispensable for optimal colony-stimulating factor 1 (CSF-1)-induced proliferation in macrophages in a Src-dependent fashion. J. Immunol. 180: 4166-4172.
4. Mitsiades, C.S., et al. 2008. Aplidin, a marine organism-derived compound with potent antimyeloma activity *in vitro* and *in vivo*. Cancer Res. 68: 5216-5225.
5. Rovida, E., et al. 2008. ERK5 differentially regulates PDGF-induced proliferation and migration of hepatic stellate cells. J. Hepatol. 48: 107-115.
6. Sawhney, R.S., et al. 2009. A novel role of ERK5 in integrin-mediated cell adhesion and motility in cancer cells via Fak signaling. J. Cell. Physiol. 219: 152-161.
7. Yoshihara, D., et al. 2011. PPAR-γ agonist ameliorates kidney and liver disease in an orthologous rat model of human autosomal recessive polycystic kidney disease. Am. J. Physiol. Renal Physiol. 300: F465-F474.
8. Chen, W.K., et al. 2014. Cardiac hypertrophy-related pathways in obesity. Chin. J. Physiol. 57: 111-120.
9. Rovida, E., et al. 2015. The mitogen-activated protein kinase ERK5 regulates the development and growth of hepatocellular carcinoma. Gut 64: 1454-1465.