ERK 1/2 (C-9): sc-514302

**BACKGROUND**

Mitogen-activated protein kinase (MAPK) signaling pathways involve two closely related MAP kinases, known as extracellular-signal-related kinase 1 (ERK 1, p44) and 2 (ERK 2, p42). Growth factors, steroid hormones, G protein-coupled receptor ligands and neurotransmitters can initiate MAPK signaling pathways. Activation of ERK 1 and ERK 2 requires phosphorylation by upstream kinases such as MAP kinase kinase (MEK), MEK kinase and Raf-1. ERK 1 and ERK 2 phosphorylation can occur at specific tyrosine and threonine sites mapping within consensus motifs that include the threonine-glutamate-tyrosine motif. ERK activation leads to dimerization with other ERKs and subsequent localization to the nucleus. Active ERK dimers phosphorylate serine and threonine residues on nuclear proteins and influence a host of responses that include proliferation, differentiation, transcription regulation and development. The human ERK 1 gene maps to chromosome 16q11.2 and encodes a 379 amino acid protein that shares 83% sequence identity to ERK 2.

**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**

ERK 1/2 (C-9) is a mouse monoclonal antibody raised against amino acids 101-172 mapping near the N-terminus of ERK 2 of human origin.

**PRODUCT**

Each vial contains 200 µg IgG2a kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

ERK 1/2 (C-9) is available conjugated to agarose (sc-514302 AC), 500 µg/0.25 ml agarose in 1 ml for IP; to HRP (sc-514302 HRP), 200 µg/ml for WB, IHC/IP and ELISA; to either phycoerythrin (sc-514302 PE), fluorescein (sc-514302 FITC), Alexa Fluor® 488 (sc-514302 AF488), Alexa Fluor® 546 (sc-514302 AF546), Alexa Fluor® 594 (sc-514302 AF594) or Alexa Fluor® 647 (sc-514302 AF647), 200 µg/ml, for WB (RGB), IF, IHC/IP and FCM; and to either Alexa Fluor® 680 (sc-514302 AF680) or Alexa Fluor® 790 (sc-514302 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA.

**APPLICATIONS**

ERK 1/2 (C-9) is recommended for detection of ERK 1 and ERK 2 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).

Molecular Weight of ERK 1: 44 kDa.

Molecular Weight of ERK 2: 42 kDa.

Positive Controls: DU 145 cell lysate: sc-2268, Jurkat whole cell lysate: sc-2204 or K-562 whole cell lysate: sc-2203.

**STORAGE**

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

**DATA**

- Molecular Weight of ERK 1: 44 kDa.
- Molecular Weight of ERK 2: 42 kDa.
- Positive Controls: DU 145 cell lysate: sc-2268, Jurkat whole cell lysate: sc-2204 or K-562 whole cell lysate: sc-2203.

**SELECT PRODUCT CITATIONS**


**RESEARCH USE**

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