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 16p11.2 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 IgGκ 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/ml, for WB (sandwich ELISA (starting dilution 1:30, dilution range 1:30-1:3000), 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.

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).

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SELECT PRODUCT CITATIONS