CREATIVE BIOMART®
Assay Kit

Phospho-ERK1/2 (Thr202/Tyr204) Translocation Assay Kit (Cell-Based)

Product Information

Cat

Kit-1027

Common Name

ERK1/2

Cat.No. Kit-1027

Description

Mitogen-activated protein kinases (MAPKs) are proline-directed serine and threonine protein kinases that regulate numerous physiological cell responses including: embryogenesis, cell differentiation, proliferation, migration, apoptosis and death. Extracellular signal-regulated kinases (ERKs) 1 and 2 (ERK1/2), also known as p44 MAPK and p42 MAPK respectively, belong to one of the five major groups of MAPKs. Closely-related ERK1/2 isoforms are uniquely activated by several extracellular signals including growth factors, cytokines, hormones, and neuro-transmitters. Activation of ERK1/2 by the upstream kinases MEK1 and MEK2 occurs via dual phosphorylation on specific threonine (Thr202) and tyrosine (Tyr204) residues on the T*EY* motif. MEK1 and MEK2 are activated through receptors (tyrosine kinases or integrins) via pathways involving adaptor proteins, guanine nucleotide exchange factors, small GTP binding proteins, and MAPKKs. Activated ERK1/2 phosphorylates both, cytosolic (SOS, MNK1/2, RSKs) and nuclear targets. In the nucleus, it affects gene expression and DNA replication by the phosphorylation of MSK 1 and 2 and the transcription factors Elk-1, Sap1, and Sap2. In cultured cells, growth factors or mitogens induce rapid and transient translocation of activated ERK1/2 to nucleus. Different cell lines exhibit various duration, magnitude, and subcellular localization of activated/phosphorylated ERK1/2. The response of the protein may differ even within the same cell line depending on the dose and cell density. Phospho-ERK1/2 (Thr202/Tyr204) Translocation Assay Kit provides a simple and complete assay in a ready-to-use format to visualize the translocation of activated ERK1/2 between cytoplasmic and nuclear compartments in mammalian cells.

Applications

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Assay Kit

Phospho-ERK1/2 (Thr202/Tyr204) Translocation Assay Kit (Cell-Based)

Detection of nuclear translocation of phospo-ERK1 and phospo-ERK2 in mammalian cells.

Storage

-20°C

Shipping

Gel Pack

Size

50 assays

Kit Components

Fixative Solution; Blocking Buffer; Wash Buffer; Phospho-ERK1/2 Primary Antibody (100X); Secondary Antibody (100X); Tamoxifen (1000X); DAPI (1000X)

Target Species

Human, mouse, rat

Detection method Fluorescence microscope capable of measuring EX at 570 nm and equipped with UV filter for DAPI

Features & Benefits

Detection of subcellular localization of activated ERK1/2 in mammalian cells;
Screening and characterizing effectors of ERK1/2 kinases;
Studying of cell signaling, cell division and cell proliferation mechanism

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