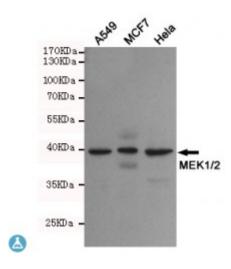


## **Anti-MEK1** antibody



**Description** Mouse monoclonal to MEK1.

Model STJ99087

**Host** Mouse

**Reactivity** Human

**Applications** ELISA, WB

**Immunogen** Recombinant human MEK1 protein.

**Gene ID** <u>5605</u>

Gene Symbol MAP2K1

**Dilution range** WB 1:500-2000ELISA 1:10000-20000

**Specificity** This antibody detects endogenous levels of MEK1/2 and does not cross-react

with related proteins.

**Tissue Specificity** Widely expressed, with extremely low levels in brain.

**Purification** The antibody was affinity-purified from rabbit antiserum by affinity-

chromatography using epitope-specific immunogen.

**Clone ID** 6F10-D7-G6

**Note** For Research Use Only (RUO).

**Protein Name**Dual specificity mitogen-activated protein kinase kinase 2 MAP kinase kinase

2 MAPKK 2 ERK activator kinase 2 MAPK/ERK kinase 2 MEK 2

Molecular Weight 45kDa

**Clonality** Monoclonal

**Conjugation** Unconjugated

Isotype IgG1

**Formulation** Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% sodium azide.

**Concentration** 1 mg/ml

**Storage Instruction** Store at -20°C, and avoid repeat freeze-thaw cycles.

Database Links <u>HGNC:6842OMIM:601263</u>

**Alternative Names** Dual specificity mitogen-activated protein kinase kinase 2 MAP kinase kinase

2 MAPKK 2 ERK activator kinase 2 MAPK/ERK kinase 2 MEK 2

**Function** Dual specificity protein kinase which acts as an essential component of the

MAP kinase signal transduction pathway. Binding of extracellular ligands such as growth factors, cytokines and hormones to their cell-surface receptors activates RAS and this initiates RAF1 activation. RAF1 then further activates the dual-specificity protein kinases MAP2K1/MEK1 and MAP2K2/MEK2. Both MAP2K1/MEK1 and MAP2K2/MEK2 function specifically in the MAPK/ERK cascade, and catalyze the concomitant phosphorylation of a threonine and a tyrosine residue in a Thr-Glu-Tyr sequence located in the extracellular signal-regulated kinases MAPK3/ERK1 and MAPK1/ERK2, leading to their activation and further transduction of the signal within the MAPK/ERK cascade. Depending on the cellular context, this pathway mediates diverse biological functions such as cell growth, adhesion, survival and differentiation, predominantly through the regulation of transcription, metabolism and cytoskeletal rearrangements. One target of the MAPK/ERK cascade is peroxisome proliferator-activated receptor gamma (PPARG), a nuclear receptor that promotes differentiation and apoptosis. MAP2K1/MEK1 has been shown to export PPARG from the nucleus. The MAPK/ERK cascade is also involved in the regulation of endosomal dynamics, including lysosome

processing and endosome cycling through the perinuclear recycling compartment (PNRC), as well as in the fragmentation of the Golgi apparatus

during mitosis.

**Sequence and Domain Family** The proline-rich region localized between residues 270 and 307 is important

for binding to RAF1 and activation of MAP2K1/MEK1.

**Cellular Localization** Cytoplasm, cytoskeleton, microtubule organizing center, centrosome

Cytoplasm, cytoskeleton, microtubule organizing center, spindle pole body

Cytoplasm Nucleus Membrane. Localizes at centrosomes during prometaphase, midzone during anaphase and midbody during

telophase/cytokinesis . Membrane localization is probably regulated by its

interaction with KSR1.

**Post-translational** Phosphorylation at Ser-218 and Ser-222 by MAP kinase kinase kinases (RAF **Modifications** or MEKK1) positively regulates kinase activity. Also phosphorylated at

or MEKK1) positively regulates kinase activity. Also phosphorylated at Thr-292 by MAPK1/ERK2 and at Ser-298 by PAK. MAPK1/ERK2

phosphorylation of Thr-292 occurs in response to cellular adhesion and leads to inhibition of Ser-298 phosphorylation by PAK. Acetylation by Yersinia yopJ prevents phosphorylation and activation, thus blocking the MAPK

signaling pathway.