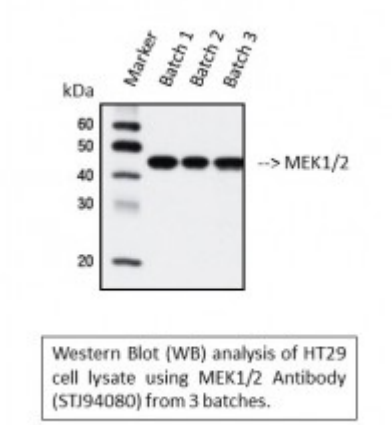
Anti-MEK-1/2 antibody



Western Blot (WB) analysis of HT29 cell lysate using MEK1/2 Antibody (STJ94080) from 3 batches.

Description	MEK-1/2 is a protein encoded by the MAP2K1 gene which is approximately 43,4 kDa. MEK-1/2 is localised to the cytoplasm and nucleus. It is involved in RET signalling, activated TLR4 signalling, the IL-2 pathway, regulation of lipid metabolism and insulin signalling-generic cascades. It acts as an integration point for multiple biochemical signals such as proliferation, differentiation, transcription regulation and development. It is also a dual-specificity kinase known for its involvement in the ERK pathway by activation of ERK1 and ERK2. MEK-1/2 is widely expressed with low levels in the brain. Mutations in the MAP2K1 gene may result in Cardiofaciocutaneous syndrome. STJ94080 was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific immunogen. This polyclonal antibody detects endogenous levels of MEK-1/2 protein.

Model	STJ94080
Host	Rabbit
Reactivity	Human, Mouse, Rat, Simian
Applications	ELISA, WB
Immunogen	Synthesized peptide derived from human MEK-1/2 around the non-phosphorylation site of S218/222.
Immunogen Region	160-240 aa
Gene ID	5604
Gene Symbol	MAP2K1
Dilution range	WB 1:500-1:2000ELISA 1:20000

Specificity	MEK-1/2 Polyclonal Antibody detects endogenous levels of MEK-1/2 protein.
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.
Note	For Research Use Only (RUO).
Protein Name	Dual specificity mitogen-activated protein kinase kinase 1 MAP kinase kinase 1 MAPKK 1 MKK1 ERK activator kinase 1 MAPK/ERK kinase 1 MEK 1
Molecular Weight	43 kDa
Clonality	Polyclonal
Conjugation	Unconjugated
Isotype	IgG
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	HGNC:6840OMIM:176872
Alternative Names	Dual specificity mitogen-activated protein kinase kinase 1 MAP kinase kinase 1 MAPKK 1 MKK1 ERK activator kinase 1 MAPK/ERK kinase 1 MEK 1
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 Modifications	Phosphorylation at Ser-218 and Ser-222 by MAP kinase kinase kinases (RAF 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.