

Recombinant MAP2K1 (MEK1) protein

Catalog No: 81199, 81799

Expressed In: Baculovirus

Quantity: 20,1000 µg

Concentration: 1.5 µg/µl

Source: Human

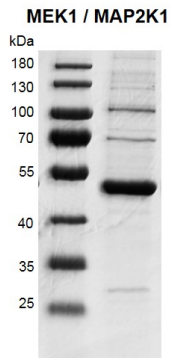
Buffer Contents: Recombinant MAP2K1 (MEK1) protein is supplied in 25 mM Tris-HCl pH 7.4, 300 mM NaCl, 10% glycerol, 0.04% Triton X-100.

Background: MAP2K1 (Mitogen-Activated Protein Kinase Kinase 1), also known as MEK1, is a member of the dual specificity protein kinase family, which acts as a mitogen-activated protein (MAP) kinase kinase, and is 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.

Protein Details: Recombinant human MAP2K1 (MEK1) protein was expressed in baculovirus expression system as the full length protein (accession number NP_002746.1) with an N-terminal 6×His tag. The molecular weight of the protein is 46.8 kDa.

Application Notes: Recombinant MAP2K1 (MEK1) protein is suitable for use in enzyme kinetics, inhibitor screening, and selectivity profiling.

Storage and Guarantee: Recombinant proteins in solution are temperature sensitive and must be stored at -80°C to prevent degradation. Avoid repeated freeze/thaw cycles and keep on ice when not in storage. This product is guaranteed for 6 months from date of arrival.

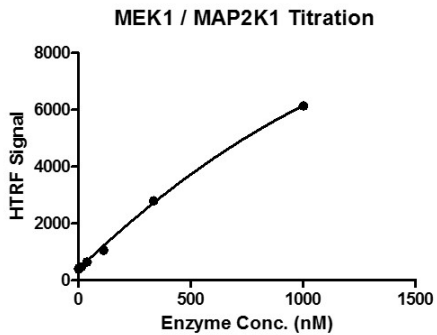


Recombinant MAP2K1 (MEK1) protein

10% SDS-PAGE with Coomassie blue staining

MW: 46.8 kDa

Purity: >80%



HTRF assay for MAP2K1 (MEK1) activity

1 μ M TK substrate was incubated with different concentrations of MAP2K1 (MEK1) protein in 10 μ l reaction system containing 1 \times Enzymatic Buffer, 5 mM MgCl₂, 1 mM DTT, 5 nM SEB and 100 μ M ATP for 1 hour. Then 10 μ l detection reagents containing anti-TK antibody and SAXL665 (each of which was 1:100 diluted with 1 \times Detection Buffer) were added and incubated with the reactions for 30 min. All the operations and reactions were performed at room temperature.

HTRF KinEASE TK assay was used to detect the enzymatic activity.