

# Mouse MEK1 / MAP2K1 / MKK1 Protein

Catalog Number: 50312-MNCB



Sino Biological  
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## General Information

### Gene Name Synonym:

MAPKK1; Mek1; MEKK1; Prkmk1

### Protein Construction:

A DNA sequence encoding the mouse MAP2K1 (NP\_032953.1) (Met1-Ile393) was expressed and purified with two additional amino acids (Gly & Pro) at the N-terminus.

**Source:** Mouse

**Expression Host:** Baculovirus-Insect Cells

## QC Testing

**Purity:** > 85 % as determined by SDS-PAGE

### Bio Activity:

**Kinase activity untested**

### Endotoxin:

< 1.0 EU per µg of the protein as determined by the LAL method

### Stability:

Samples are stable for up to twelve months from date of receipt at -70 °C

**Predicted N terminal:** Gly

### Molecular Mass:

The recombinant mouse MAP2K1 consists of 395 amino acids and predicts a molecular mass of 43.6 KDa. It migrates as an approximately 45 KDa band in SDS-PAGE under reducing conditions.

### Formulation:

Supplied as sterile 20mM Tris, 500mM NaCl, 10% glycerol, pH 8.0.

## Usage Guide

### Storage:

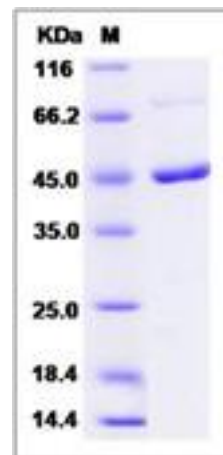
Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

**Avoid repeated freeze-thaw cycles.**

### Reconstitution:

Detailed reconstitution instructions are sent along with the products.

## SDS-PAGE:



## Protein Description

MEK1, also known as MAP2K1 and MKK1, is a member of the dual specificity protein kinase family, which acts as a mitogen-activated protein (MAP) kinase kinase. MAP kinases, also known as extracellular signal-regulated kinases (ERKs), act as an integration point for multiple biochemical signals. MEK1 is widely expressed, with extremely low levels in brain. It lies upstream of MAP kinases and stimulates the enzymatic activity of MAP kinases upon wide variety of extra- and intracellular signals. As an essential component of MAP kinase signal transduction pathway, MEK1 is involved in many cellular processes such as proliferation, differentiation, transcription regulation and development. Binding 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 and MEK2. MEK1 has been shown to export PPARG from the nucleus. The MAPK 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. MKK1 catalyzes the concomitant phosphorylation of a threonine and a tyrosine residue in a Thr-Glu-Tyr sequence located in MAP kinases. Defects in MEK1 can cause cardiofaciocutaneous syndrome.

## References

1. Rampoldi L, *et al.* (1998) Chromosomal localization of four MAPK signaling cascade genes: MEK1, MEK3, MEK4 and MEKK5. *Cytogenet Cell Genet.* 78(3-4):301-3.
2. Zheng CF, *et al.* (1993) Cloning and characterization of two distinct human extracellular signal-regulated kinase activator kinases, MEK1 and MEK2. *J Biol Chem.* 268(15):11435-9.
3. Nantel, *et al.* (1998) Interaction of the Grb10 adapter protein with the Raf1 and MEK1 kinases. *J Biol Chem.* 273(17):10475-84.

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