Active Recombinant Human MAP2K1, GST-tagged

Cat. No. MAP2K1-175H **Lot. No.** (See product label)

SPECIFICATION

Species	Human
Source	E.coli
Description	Several key growth factors, cytokines, and protooncogenes transduce their growth- and differentiationpromoting signals through the mitogen-activated protein kinase or extracellular signal-regulated protein kinase (ERK) cascade. MAP (mitogen-activated protein) kinases are activated by a family of dual specificity kinases called MEKs (MAP kinase/Erk Kinase). MEK1 can be activated by Raf by phosphorylation on serine 218 and serine 222. Mutation of these sites to acidic residues leads to constitutively active MEK1 in some cases. Given the central role of the ERK/mitogen-activated protein kinase pathway in mediating growth-promoting signals for a diverse group of upstream stimuli, inhibitors of MEK, as a key central mediator, could have significant clinical benefit in the treatment of breast and other cancers. The human recombinant MEK1, activated by two amino acid exchanges (S218D, S222D), was expressed in*E. coli*and purified by gluthatione sepharose and gelfiltration. It is suitable for labeling MEK1 substrates and for activation of ERK1 and ERK2. The molecular weight of the protein is 69.7 kDa. The GST-Tag facilitates the protein‘s application in typical GST pull-down assays.
Form	Supplied in 50 mM Tris-HCl pH 7.5, 150 mM NaCl, 0.1 mM EGTA, 270 mM sucrose and 1 mM DTT.
Purity	> 90% by SDS-PAGE.

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Activity	> 250.000 U/mg (1 Unit is defined as the amount of MEK1 which activates unactive ERK1 (0.3 mg/ml) by 1 U/min using 100 µM ATP at 30°C. 1 U ERK1 activity is defined as 1 pmol phosphate transferred to myelin basic protein (0.2 mg/ml) per min using 125 µM ATP at 30°C).
Usage	For in vitro use only.
Storage	Quality guaranteed for 12 months store at - 80°C. Avoid freeze / thaw cycles.

GENE INFORMATION

Gene Name	MAP2K1 mitogen-activated protein kinase kinase 1 [Homo sapiens]
Synonyms	MAP2K1; mitogen-activated protein kinase kinase 1; MEK1; MKK1; MAPKK1; PRKMK1; protein kinase, mitogen-activated, kinase 1 (MAP kinase kinase 1); EC 2.7.12.2; ERK activator kinase 1; MAP kinase kinase 1; MAPK/ERK kinase 1
Gene ID	5604
mRNA Refseq	NM_002755
Protein Refseq	NP_002746
MIM	176872
UniProt ID	Q02750
Chromosome Location	15q22.1-q22.33
Pathway	Acute myeloid leukemia; B cell receptor signaling pathway; Bladder cancer;

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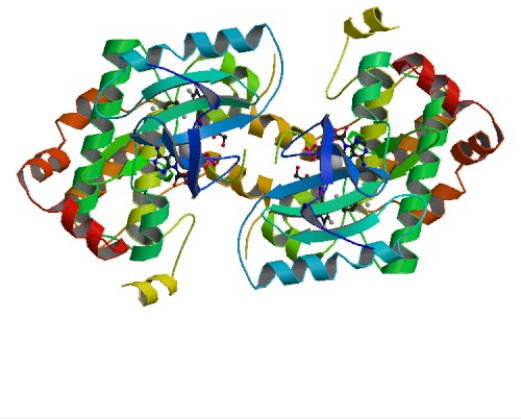
	Chemokine signaling pathway; Chronic myeloid leukemia; Colorectal cancer; Dorso-ventral axis formation; Endometrial cancer; ErbB signaling pathway; Fc epsilon RI signaling pathway; Fc gamma R-mediated phagocytosis; Focal adhesion; Gap junction; Glioma; GnRH signaling pathway; Insulin signaling pathway; Long-term depression; Long-term potentiation; MAPK signaling pathway; Melanogenesis; Melanoma; Natural killer cell mediated cytotoxicity; Neurotrophin signaling pathway; Non-small cell lung cancer; Pancreatic cancer; Pathways in cancer; Prion diseases; Progesterone-mediated oocyte maturation; Prostate cancer; Regulation of actin cytoskeleton; Renal cell carcinoma; T cell receptor signaling pathway; Thyroid cancer; Toll-like receptor signaling pathway; VEGF signaling pathway; Vascular smooth muscle contraction
Function	ATP binding; MAP kinase kinase activity; Ras GTPase binding; mitogen-activated protein kinase kinase kinase binding; nucleotide binding; protein binding; protein serine/threonine kinase activity; protein tyrosine kinase activity; receptor signaling protein tyrosine phosphatase activity; transferase activity
PDB rendering based on 1s9j.	

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