

Recombinant Human Mitogen-Activated Protein Kinase 1

Cat. No. MAPK1-37H Lot. No. (See product label)

SPECIFICATION

Product Overview	Recombinant ERK2 (extracellular signal-regulated kinase) a Mitogen-Activated Protein Kinase, is a highly active form produced by phosphorylation of the purified ERK2/MAPK1 in vitro with MEK1 is a non-glycosylated polypeptide having a molecular mass of 44.6 kDa. ERK2/MAPK1 is purified by proprietary chromatographic techniques. It is produced in <i>E. Coli</i> .
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Species	Human
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Source	E.coli
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Description	Mitogen-activated protein kinase 1 (MAPK1) is also known as "extracellular signal-regulated kinase 2" (ERK2). Two similar (85% sequence identity) protein kinases were originally called ERK1 and ERK2. They were found during a search for protein kinases that are rapidly phosphorylated after activation of cell surface tyrosine kinases such as the epidermal growth factor receptor. Phosphorylation of ERKs leads to the activation of their kinase activity. The molecular events linking cell surface receptors to activation of ERKs are complex. It was found that Ras GTP-binding proteins are involved in the activation of ERKs. Another protein kinase, Raf-1, was shown to phosphorylate a "MAPK kinase", thus qualifying as a "MAPK kinase kinase". The MAPK kinase was named "MAPK/ERK kinase" (MEK). Receptor-linked tyrosine kinases, Ras, Raf, MEK and MAPK could be fitted into a signaling cascade linking an extracellular signal to MAPK activation. Transgenic gene knockout mice lacking MAPK1 have major defects in early development.
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Physical Appearance	Sterile Filtered clear solution.
Unit Definition	1 U = 1 pmol/min transferred to myelin basic protein at 30°C.
Purity	Greater than 95.0% as determined by SDS-PAGE.
Formulation	ERK2 is supplied as 0.56 mg/ml containing 50mM Tris-HCL, 150mM NaCl, 2mM DTT, pH 8.0, 100 Units*/mg.
Stability	ERK2/MAPK1 should be stored at 4°C if entire vial will be used within 2-4 weeks. For long term storage it is recommended to store at -20°C. Avoid multiple freeze-thaw cycles.

GENE INFORMATION

Gene Name	MAPK1 mitogen-activated protein kinase 1 [Homo sapiens]
Synonyms	MAPK1; mitogen-activated protein kinase 1; ERK; p38; p40; p41; ERK2; ERT1; MAPK2; PRKM1; PRKM2; P42MAPK; p41mapk;p42-MAPK; MAP kinase 2; Mitogen-activated protein kinase 2; Extracellular signal-regulated kinase 2; OTTHUMP00000174492; MAP kinase 2; protein tyrosine kinase ERK2
Gene ID	5594
mRNA Refseq	NM_002745
Protein Refseq	NP_002736
UniProt ID	P28482
Chromosome	22q11.2; 22q11.21

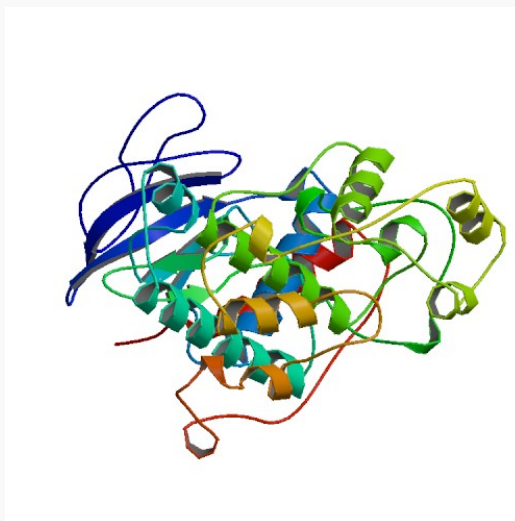
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Location	
MIM	176948
Pathway	Acute myeloid leukemia; Adherens junction; Alzheimer"s disease; Axon guidance; cell receptor signaling pathway; Bladder cancer; Chemokine signaling pathway; Chronic myeloid leukemia; Dorso-ventral axis formation; Colorectal cancer; 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; Insulin signaling pathway; Long-term depression; Long-term potentiation; Melanogenesis; Melanoma; Natural killer cell mediated cytotoxicity; Neurotrophin signaling pathway; Non-small cell lung cancer; Pancreatic cancer; Pathways in cancer; Prion diseases; Prostate cancer; Regulation of actin cytoskeleton; Renal cell carcinoma; T cell receptor signaling pathway; TGF-beta signaling pathway; TGF-beta signaling pathway; Thyroid cancer; Toll-like receptor signaling pathway; Type II diabetes mellitus; VEGF signaling pathway; Vascular smooth muscle contraction; mTOR signaling pathway; Axon guidance; Signaling by EGFR; Signaling in Immune system; Signalling by NGF
Function	ATP binding; MAP kinase 2 activity; mitogen-activated protein kinase kinase kinase binding; nucleotide binding; phosphotyrosine binding; protein binding; protein serine/threonine kinase activity; transferase activity

PDB rendering based
on 1erk.



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