

## Product datasheet for **MC227260**

### Mapk1 (NM\_001038663) Mouse Untagged Clone

#### Product data:

Product Type:	Expression Plasmids
Product Name:	Mapk1 (NM_001038663) Mouse Untagged Clone
Tag:	Tag Free
Symbol:	Mapk1
Synonyms:	9030612K14Rik; AA407128; AU018647; C78273; ERK; Erk2; MAPK2; p41mapk; p42mapk; Prkm1; PRKM2
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)
Cell Selection:	Neomycin
Fully Sequenced ORF:	>MC227260 representing NM_001038663 Red=Cloning site Blue=ORF Orange=Stop codon

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
GCC**CGATCGCC**

ATGGCGCGGGCGGGCGGGCGGGCCGGAGATGGTCCGCGGGCAGGTGTTTCGACGTAGGGCCGCGCTACA  
CCAACCTCTCGTACATCGGAGAAGGCGCCTACGGCATGGTTTGCTCTGCTTATGATAATCTCAACAAAGT  
TCGAGTTGCTATCAAGAAAATCAGTCCTTTGAGCACCAGACCTACTGTCAAAGAACCCTAAGAGAGATA  
AAAATCTTACTGCGCTTCAGACATGAGAACATCATTGGCATCAATGACATCATCCGGGCACCAACCATTG  
AGCAAATGAAAGATGTATATATAGTACAGGACCTCATGGAGACGGACCTTACAAGCTCTTGAAGACACA  
GCACCTCAGCAATGACCACATCTGCTATTTTCTTATCAGATCCTGAGAGGGCTAAAGTATATCCATTCA  
GCTAACGTTCTGCACCGTGACCTCAAGCCTTCCAACCTCCTGCTGAACACCACTTGATCTCAAGATCT  
GTGACTTTGGCCTTGCCCGTGTTCAGATCCAGATCATGATCACACAGGGTTCTTGACAGAGTACGTAGC  
CACACGTTGGTACAGAGCTCCAGAAATTATGTTGAATCCAAGGGTTATACCAAGTCCATTGATATTTGG  
TCTGTGGGCTGCATCCTGGCAGAGATGCTATCCAACAGGCCTATCTTCCAGGAAAGCATTACCTTGACC  
AGCTGAATCACATCCTGGGTATTCTTGGATCTCCATCACAGGAAGATCTGAATTGATAATAAAATTTAAA  
AGCTCAAAGCTCTGGATTTACTGGATAAAATGTTGACATTTAACCCCTACAAGAGGATTGAAGTTGAAC  
AGGCTCTGGCCACCCATACCTGGAGCAGTATTATGACCCAAGTGATGAGCCATTGCTGAAGCGCCATT  
CAAGTTTGACATGGAGTTGGACGACTTACCTAAGGAGAAGCTCAAAGAAGCTCAATTTTGAAGAGACTGCT  
AGATTCCAGCCAGGATACAGATCT**TAA**

**ACGCGT**ACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAATGATATCCTGGATT  
ACAAGGATGACGACGATAAGGTTTAA

Restriction Sites: SgfI-MluI



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ACCN:	NM_001038663
Insert Size:	1077 bp
OTI Disclaimer:	Our molecular clone sequence data has been matched to the reference identifier above as a point of reference. Note that the complete sequence of our molecular clones may differ from the sequence published for this corresponding reference, e.g., by representing an alternative RNA splicing form or single nucleotide polymorphism (SNP).
OTI Annotation:	Clone contains native stop codon, and expresses the complete ORF without any c-terminal tag.
Components:	The ORF clone is ion-exchange column purified and shipped in a 2D barcoded Matrix tube containing 10ug of transfection-ready, dried plasmid DNA (reconstitute with 100 ul of water).
Reconstitution Method:	<ol style="list-style-type: none"><li>1. Centrifuge at 5,000xg for 5min.</li><li>2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.</li><li>3. Close the tube and incubate for 10 minutes at room temperature.</li><li>4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.</li><li>5. Store the suspended plasmid at -20°C. The DNA is stable for at least one year from date of shipping when stored at -20°C.</li></ol>
RefSeq:	<u><a href="#">NM_001038663.1</a></u> , <u><a href="#">NP_001033752.1</a></u>
RefSeq Size:	1932 bp
RefSeq ORF:	1077 bp
Locus ID:	26413
UniProt ID:	<u><a href="#">P63085</a></u>
Cytogenetics:	16 10.53 cM

**Gene Summary:**

Serine/threonine kinase which acts as an essential component of the MAP kinase signal transduction pathway. MAPK1/ERK2 and MAPK3/ERK1 are the 2 MAPKs which play an important role in the MAPK/ERK cascade. They participate also in a signaling cascade initiated by activated KIT and KITLG/SCF. Depending on the cellular context, the MAPK/ERK cascade mediates diverse biological functions such as cell growth, adhesion, survival and differentiation through the regulation of transcription, translation, cytoskeletal rearrangements. The MAPK/ERK cascade plays also a role in initiation and regulation of meiosis, mitosis, and postmitotic functions in differentiated cells by phosphorylating a number of transcription factors. About 160 substrates have already been discovered for ERKs. Many of these substrates are localized in the nucleus, and seem to participate in the regulation of transcription upon stimulation. However, other substrates are found in the cytosol as well as in other cellular organelles, and those are responsible for processes such as translation, mitosis and apoptosis. Moreover, the MAPK/ERK cascade is also involved in the regulation of the 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. The substrates include transcription factors (such as ATF2, BCL6, ELK1, ERF, FOS, HSF4 or SPZ1), cytoskeletal elements (such as CANX, CTTN, GJA1, MAP2, MAPT, PXN, SORBS3 or STMN1), regulators of apoptosis (such as BAD, BTG2, CASP9, DAPK1, IER3, MCL1 or PPARG), regulators of translation (such as EIF4EBP1) and a variety of other signaling-related molecules (like ARHGEF2, DCC, FRS2 or GRB10). Protein kinases (such as RAF1, RPS6KA1/RSK1, RPS6KA3/RSK2, RPS6KA2/RSK3, RPS6KA6/RSK4, SYK, MKNK1/MNK1, MKNK2/MNK2, RPS6KA5/MSK1, RPS6KA4/MSK2, MAPKAPK3 or MAPKAPK5) and phosphatases (such as DUSP1, DUSP4, DUSP6 or DUSP16) are other substrates which enable the propagation the MAPK/ERK signal to additional cytosolic and nuclear targets, thereby extending the specificity of the cascade. Mediates phosphorylation of TPR in response to EGF stimulation. May play a role in the spindle assembly checkpoint. Phosphorylates PML and promotes its interaction with PIN1, leading to PML degradation. Phosphorylates CDK2AP2 (By similarity).[UniProtKB/Swiss-Prot Function]