

## Product datasheet for **MC207358**

### Mapk11 (NM\_011161) Mouse Untagged Clone

#### Product data:

**Product Type:** Expression Plasmids  
**Product Name:** Mapk11 (NM\_011161) Mouse Untagged Clone  
**Tag:** Tag Free  
**Symbol:** Mapk11  
**Synonyms:** p38-2; P38b; p38beta; p38beta2; Prkm11; Sapk2; Sapk2b  
**Vector:** pCMV6-Entry (PS100001)  
**E. coli Selection:** Kanamycin (25 ug/mL)  
**Cell Selection:** Neomycin  
**Fully Sequenced ORF:** >MC207358 representing NM\_011161  
Red=Cloning site Blue=ORF Orange=Stop codon

TTTTGTAATACGACTCACTATAGGGCGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
GCC**CGGATCGCC**

ATGTCGGGTCCGCGCGGGATTCTACCGCAAGAGCTGAACAAAACAGTATGGGAGGTGCCGACGGCC  
TGCAGGGCTACGCCGGTGGGCTCCGGCGCTACGGCTCAGTCTGCTCGGCCTACGACGCGGGCTGCC  
CCAGAAGGTGGCTGTAAGAAGCTGTCTCGCCCTTCCAATCGCTGATCCACGCGAGGAGACATACCGT  
GAGCTGCGCTACTCAAGCACCTGAAGCAGGAAACGTCATAGGACTTTTGGACGCTTCCAGCCGCCA  
CATCCATCGAGGATTTACGCGAAGTGTACCTCGTGACGACCTGATGGGCGCCGACCTGAATAACATCGT  
CAAGTGTGAGCCCTGAGCGATGAGCATGTTCAATTCCTTGCTACCAGCTGCTGCGTGGGCTGAAGTAT  
ATCCACTCGGCGGGCATCATCCACGGGACCTGAAGCCAGCAATGTAGCGGTGAACGAGGACTGCGAGC  
TGAGGATCCTGGACTTTGGGCTAGCACGCCAGGCTGATGAGGAGATGACCGGATATGTGGCCACACGGTG  
GTACCGGGCGCCAGAGATCATGCTAAACTGGATGCACTACAACCAGACAGTGGACATCTGGTCTGTGGC  
TGCATCATGGCTGAAGTGTGCAAGGAAAGGCCCTCTTCTGAAACGACTACATCGACCAGCTGAAGC  
GAATCATGGAGGTGGTGGGCGCCAGTCTGAGGTTCTGGCAAAGATATCCTCGGAGCATGCCCGGAC  
ATACATCCAGTCTCTGCCTCCCATGCCCAAGGACCTCAGCAGTGTCTTCCATGGAGCCAACCCCTG  
GCCATAGACCTCCTTGAAGAATGCTGGTACTAGACAGCGACCAGAGGGTCAGTGCGGCCGAAGCCTTGG  
CCCACGCATACTCAGCCAGTACCATGACCCTGACGATGAGCCAGAGGCAGAGCCCTATGATGAAAGTGT  
TGAGGCCAAGGAGCGCACGCTGGAGGAGTGAAGGAGCTTACTTACCAAGAAGTCCTTAGCTTCAAGCCC  
CTGGAACCCTCACAGCTCCCTGGCACCCATGAAATTGAGCAGTGA

**ACGGT**ACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT  
ACAAGGATGACGACGATAAGGTTTAA

**Restriction Sites:** SgfI-MluI  
**ACCN:** NM\_011161



<b>Insert Size:</b>	1095 bp
<b>OTI Disclaimer:</b>	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).
<b>Components:</b>	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).
<b>Reconstitution Method:</b>	<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>
<b>RefSeq:</b>	<u>NM_011161.5, NP_035291.4</u>
<b>RefSeq Size:</b>	2452 bp
<b>RefSeq ORF:</b>	1095 bp
<b>Locus ID:</b>	19094
<b>UniProt ID:</b>	<u>Q9WU11</u>
<b>Cytogenetics:</b>	15 E3

**Gene Summary:**

Serine/threonine kinase which acts as an essential component of the MAP kinase signal transduction pathway. MAPK11 is one of the four p38 MAPKs which play an important role in the cascades of cellular responses evoked by extracellular stimuli such as proinflammatory cytokines or physical stress leading to direct activation of transcription factors. Accordingly, p38 MAPKs phosphorylate a broad range of proteins and it has been estimated that they may have approximately 200 to 300 substrates each. MAPK11 functions are mostly redundant with those of MAPK14. Some of the targets are downstream kinases which are activated through phosphorylation and further phosphorylate additional targets. RPS6KA5/MSK1 and RPS6KA4/MSK2 can directly phosphorylate and activate transcription factors such as CREB1, ATF1, the NF-kappa-B isoform RELA/NFKB3, STAT1 and STAT3, but can also phosphorylate histone H3 and the nucleosomal protein HMGN1. RPS6KA5/MSK1 and RPS6KA4/MSK2 play important roles in the rapid induction of immediate-early genes in response to stress or mitogenic stimuli, either by inducing chromatin remodeling or by recruiting the transcription machinery. On the other hand, two other kinase targets, MAPKAPK2/MK2 and MAPKAPK3/MK3, participate in the control of gene expression mostly at the post-transcriptional level, by phosphorylating ZFP36 (tristetraprolin) and ELAVL1, and by regulating EEF2K, which is important for the elongation of mRNA during translation. MKNK1/MNK1 and MKNK2/MNK2, two other kinases activated by p38 MAPKs, regulate protein synthesis by phosphorylating the initiation factor EIF4E2. In the cytoplasm, the p38 MAPK pathway is an important regulator of protein turnover. For example, CFLAR is an inhibitor of TNF-induced apoptosis whose proteasome-mediated degradation is regulated by p38 MAPK phosphorylation. Ectodomain shedding of transmembrane proteins is regulated by p38 MAPKs as well. In response to inflammatory stimuli, p38 MAPKs phosphorylate the membrane-associated metalloprotease ADAM17. Such phosphorylation is required for ADAM17-mediated ectodomain shedding of TGF-alpha family ligands, which results in the activation of EGFR signaling and cell proliferation. Additional examples of p38 MAPK substrates are the FGFR1. FGFR1 can be translocated from the extracellular space into the cytosol and nucleus of target cells, and regulates processes such as rRNA synthesis and cell growth. FGFR1 translocation requires p38 MAPK activation. In the nucleus, many transcription factors are phosphorylated and activated by p38 MAPKs in response to different stimuli. Classical examples include ATF1, ATF2, ATF6, ELK1, PTPRH, DDIT3, TP53/p53 and MEF2C and MEF2A. The p38 MAPKs are emerging as important modulators of gene expression by regulating chromatin modifiers and remodelers. The promoters of several genes involved in the inflammatory response, such as IL6, IL8 and IL12B, display a p38 MAPK-dependent enrichment of histone H3 phosphorylation on 'Ser-10' (H3S10ph) in LPS-stimulated myeloid cells. This phosphorylation enhances the accessibility of the cryptic NF-kappa-B-binding sites marking promoters for increased NF-kappa-B recruitment.[UniProtKB/Swiss-Prot Function]