

Product datasheet for **MG227178**

Irak1 (NM_001177974) Mouse Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Irak1 (NM_001177974) Mouse Tagged ORF Clone
Tag:	TurboGFP
Symbol:	Irak1
Synonyms:	AA408924; I11rak; IRAK; IRAK-1; IRAK1-S; IRAK1b; mPLK; Plpk
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-AC-GFP (PS100010)
E. coli Selection:	Ampicillin (100 ug/mL)



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ORF Nucleotide Sequence:

>MG227178 representing NM_001177974
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
 GCC**CGGATCGCC**

ATGGCCGGGGGGCCGGGCCCGGGGAGCCTGTGGTTCCAGGCGCCAGCACTTCTTGTACGAGGTGCCAC
 CCTGGGTTATGTGCCGTTCTACAAAGTGATGGACGCCCTGGAGCCCGCGACTGGTGCCAGTTCGCGGC
 CTTGATCGTGCAGCAGCAGAGCTGCGGCTGTGCGAGCGCTCCGAGCAGCGCACAGCCAGTGTCTG
 TGGCCCTGGATCAACCGCAACGCGCGCTAGTGACCTCGTTCACATCCTCACGCACCTGCAGTGTCTG
 GTGCGAGGGACATCATCACAGCCTGGCACCTCCTGCCCCGTTGTGCCCAAGCACCGCTGCCCAAG
 GCCCAGCAGCATCTGCAAGCTCTGAGGCCGGGACTGGAGCCCCGAAATTGCAGTCTCTGCCTCC
 ACCTTCTCTCCCGAGCTTTCCAGGCTCCAGACCCATTCTGAGTCAGAGCTCCTCCAGGTTCCACTCC
 CTGTTTCCCTCGGGCCACCACTACCATCTTCAGCCCTTCTCCACCAAGTCAAGCCAGAGAGCCAGT
 GTCTGGCTCCAAGAGCCCATCCTCCCGTTTTGCTGGCCCTTCTGTGAGATTTCCAAGGCACCTGC
 AACTTCTCTGAAGAACTCAGATTGGAGAGGGTGGTTTTGGATGTGTGTACCGAGCAGTCATGAGAAATA
 CTACATATGCTGTGAAGAGACTGAAGGAGGAAGCTGACCTAGAGTGGACTATGGTGAAACAGAGTCTT
 AACAGAGGTGGAACAGCTATCAAGGTTTCGTACCCAAATATCGTAGACTTTGCTGGCTACTGTGCAGAG
 AGTGGCTTATACTGCCTTGTATGGCTTCTTGCCCAATGGCTCCTTGGAGGATCAGTCCACCTTCCAGA
 CCCAGGCTGCTCCCACTTTCTGGCCTCAACGACTGGACATTTCTTGGGCACAGCCCGGCTATTCA
 GTTTTTACATCAGGATAGCCCCAGCCTTATCCATGGAGACATCAAGATTCTAACGTGCTTCTGGATGAG
 AGACTGATGCCAAGCTGGGAGACTTTGGCCTGGCTCGTTTTCAGCCGCTTTCGGGGGCCAAAGCAAGC
 AGAGCAGTACTGTGCCCGGACTTCCACAGTTCGAGGTACCCTCGCCTACTTGCCTGAGGAGTACATCAA
 GACAGGCCGACTGGCTGTGGACACCGATACCTTCAGCTTTGGGGTGGTAATACTGGAGACCTTGTGTT
 CAGAGGGCTGTGAGGACACAAGGTGCAAAGACCAAGTATTTGAAAGACCTGATTGAAGATGAGGCTGAAG
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 TCCAATTGCTGCCAGATCTATAAGAAGCACCTGGACTCCAGACCTGGGCCCTGCCACCCAGTTGGGC
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 TATACAAGAGACTAGAAGGGCTTCAGGCAGGGCTCCCTGGGAGCTAGAGGTTGCCGGCCATGGCTCCCC
 TTCCCCACAGGAGAACTCTACATGTCTACCCTGGCAGTGCCCAGAGTGGGGATGAACCATGGCAGCCT
 CTAGTAGTGACCACAAGAGCCCCAGCCAGGCTGCCAGCAACTCCAGAGAAGTCCAACAGCCAGTGG
 AAAGTGATGAGAGTGTTCCCGGCCCTCTGCTACCCTGCATTCTGGCACTTGACTCCAGGTTCCACCC
 AAGCCCAGCGTCTTCAGAGAGGCTAGCTGTACCCAGGGAGGCACTACCAGAGAATCAAGTGTGAGGAGT
 AGCCCAGGCTTCCAGCCTACAACCATGGAAGGCTCACCCACGGGCAGCTCATCCCTGCTGTGCATCAGAAC
 CACCACAGATCATCATCAACCCAGCCGACAGAAGATGGTACAAAAGCTGGCTCTTTATGAAGAAGGGGT
 CTTGGATAGCCTGCAACTGCTGTGCATCAGGCTTTTTCCAGGCTTGGATTTAGAACCTGAAAAGAGCCAG
 GGACCTGAAGAAAGTGATGAATTCAGAGC

ACGCGTACGCGGCCGCTCGAG - GFP Tag - GTTTAA

Protein Sequence: >MG227178 representing NM_001177974
 Red=Cloning site Green=Tags(s)

MAGGPGPGPEVVPVGAQHFLYEVPWVMCRFYKVMdalePADWCQFAALIVRDQTELRLCERSEQRTASVL
 WPWINRNARVADLVHILTHLQLLRARDIITAWHPPAPVPPSTAAPRPSSISAGSEAGDWSPRKLQSSAS
 TFLSPAFPGSQTHSESELLQVPLPVSLGPPLPSSAPSSTKSSPESPVSGLQRAHSPFCWPFCEISQGTC
 NFSEELRIGEGGFGCVYRAVMRNTTYAVKRLKEEADLEWTMVKQSFLTEVEQLSRFRHPNIVDFAGYCAE
 SGLYCLVYGFPLPNGSLEDQLHLQTQACSPLSWPQRDLILLGTARAIQFLHQDSPSLIHGDIKSSNVLLDE
 RLMPKLGDFGLARFSRFAGAKASQSSTVARTSTVRGTLAYLPEEYIKTGR LAVD TDTFSFGVVILETLAG
 QRAVRTQGAKT KYL KDL IEDEAE EAGVTLKSTQPTLWVG VATDAAPIAAQIYKHLDSRPGPCPPQLG
 LALAQLACCCMHRRAKKRPPMTQVYKRLEGLQAGPPWELEVAGHGSPSPQENSYMSTTGSQAQSGDEPWQP
 LVVTTTRAPAQAQQQLQRSPNQPVESDESVPGLSATLHSHWLTGSHSPSPASFREASCTQGGTTRESSVRS
 SPGFQPTTMEGSPGSSLLSSEPPQIIINPARQKMQKLLALYEEGVLDSLQLLSSGFFPGLDLEPEKSQ
 GPEESDEFQS

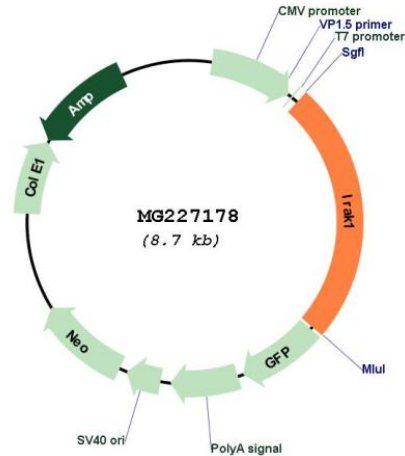
TRTRPLE - GFP Tag - V

Restriction Sites: SgfI-MluI

Cloning Scheme:

Cloning sites used for ORF Shuttling:



Plasmid Map:


ACCN: NM_001177974

ORF Size: 2130 bp

OTI Disclaimer: The molecular sequence of this clone aligns with the gene accession number as a point of reference only. However, individual transcript sequences of the same gene can differ through naturally occurring variations (e.g. polymorphisms), each with its own valid existence. This clone is substantially in agreement with the reference, but a complete review of all prevailing variants is recommended prior to use. [More info](#)

OTI Annotation: This clone was engineered to express the complete ORF with an expression tag. Expression varies depending on the nature of the gene.

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:

1. Centrifuge at 5,000xg for 5min.
2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.
3. Close the tube and incubate for 10 minutes at room temperature.
4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.
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.

RefSeq: [NM_001177974.1](#), [NP_001171445.1](#)

RefSeq Size: 2574 bp

RefSeq ORF: 2133 bp

Locus ID:	16179
UniProt ID:	Q62406
Cytogenetics:	X 37.61 cM
Gene Summary:	<p>Serine/threonine-protein kinase that plays a critical role in initiating innate immune response against foreign pathogens. Involved in Toll-like receptor (TLR) and IL-1R signaling pathways. Is rapidly recruited by MYD88 to the receptor-signaling complex upon TLR activation. Association with MYD88 leads to IRAK1 phosphorylation by IRAK4 and subsequent autophosphorylation and kinase activation. Phosphorylates E3 ubiquitin ligases Pellino proteins (PELI1, PELI2 and PELI3) to promote pellino-mediated polyubiquitination of IRAK1. Then, the ubiquitin-binding domain of IKBKG/NEMO binds to polyubiquitinated IRAK1 bringing together the IRAK1-MAP3K7/TAK1-TRAF6 complex and the NEMO-IKKA-IKKB complex. In turn, MAP3K7/TAK1 activates IKKs (CHUK/IKKA and IKBKB/IKKB) leading to NF-kappa-B nuclear translocation and activation. Alternatively, phosphorylates TIRAP to promote its ubiquitination and subsequent degradation. Phosphorylates the interferon regulatory factor 7 (IRF7) to induce its activation and translocation to the nucleus, resulting in transcriptional activation of type I IFN genes, which drive the cell in an antiviral state. When sumoylated, translocates to the nucleus and phosphorylates STAT3 (By similarity). [UniProtKB/Swiss-Prot Function]</p>