

Product datasheet for **MR210252**

Irak1 (NM_001177973) Mouse Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Irak1 (NM_001177973) Mouse Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	Irak1
Synonyms:	AA408924; I11rak; IRAK; IRAK-1; IRAK1-S; IRAK1b; mPLK; Plpk
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)



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ORF Nucleotide
Sequence:

>MR210252 ORF sequence
Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
GCC**CGCATCGCC**

ATGGACGCCCTGGAGCCCGGACTGGTGCCAGTTCGCGCCTTGATCGTGCAGCAGACAGAGCTGC
GGCTGTGCGAGCGCTCCGAGCAGCGCACAGCCAGTGTCTGTGGCCCTGGATCAACCGCAACGCGCGCT
AGCTGACCTCGTTCACATCCTCACGCACCTGCAGCTGCTGCGTGCAGGGACATCATCACAGCCTGGCAC
CCTCCTGCCCCGTTGTGCCCAAGCACCCTGCCCAAGGCCAGCAGCATCTCTGCAGGCTCTGAGG
CCGGGGACTGGAGCCCCGAAATTGCAGTCTCTGCCTCCACCTTCTCTCCAGCTTTTCCAGGCTC
CCAGACCCATTCTGAGTCAGAGCTCCTCCAGTTCCTCCCTGTTTCCCTCGGGCCACCACTACCATCT
TCAGCCCTTCTCCACCAAGCAGTCAAGCCAGAGAGCCAGTGTCTGGCCTCAAAGAGCCCATCCCT
CCCCGTTTGTGCCCCTCTGTGAGATTTCCCAAGGCACCTGCAACTTCTCTGAAGAACTCAGGATTGG
AGAGGGTGGTTTTGGATGTGTGTACCGAGCAGTCATGAGAAATACTACATATGCTGTGAAGAGACTGAAG
GAGGAAGCTGACCTAGAGTGGACTATGGTGAAACAGAGCTTCTAACAGAGGTGGAACAGCTATCAAGT
TTCGTCACCCAAATATCGTAGACTTTGCTGGCTACTGTGCAGAGAGTGGCTTATACTGCCTGTTTATGG
CTTCTTGCCCAATGGCTCCTTGAGGATCAGCTCCACCTTCCAGACCCAGGCTGCTCCCACTTTCTGG
CCTCAACGACTGGACATCTTCTGGGCACAGCCCGGGCTATTCAGTTTTTACATCAGGATAGCCCCAGCC
TTATCCATGGAGACATCAAGAGTTCTAACGTGCTTCTGGATGAGAGACTGATGCCAAGCTGGGAGACTT
TGGCCTGGCTCGTTTTCAGCCGCTTTCGGGGGCCAAAGCAAGCCAGAGCAGTACTGTGGCCCGGACTTCC
ACAGTTCGAGGTACCCTCGCTACTTGCCTGAGGAGTACATCAAGACAGGCCGACTGGCTGTGGACCCG
AATACCTCAGCTTTGGGTGGTAATACTGGAGACCTTGGCTGGTCAGAGGGCTGTGAGGACACAAGTGC
AAAGACCAAGTATTTGAAAGACCTGATTGAAGATGAGGCTGAAGAGGCTGGAGTGACCTGAAAAGCACC
CAGCCTACTCTGTGGTGGTGTAGCCACGGATGCTTGGGCTGCTCCAATTGCTGCCAGATCTATAAGA
AGCACCTGGACTCCAGACCTGGGCCCTGCCACCCAGTGGCCCTGGCCCTGGCTCAACTAGCTTGCTG
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GCCTCAGATCCCAGGAACAGGTATACAAGAGACTAGAAGGGCTTCAGGCAGGGCCTCCCTGGGAGCTAGA
GGTTGCCGGCCATGGCTCCCTTCCCACAGGAGAACTCTACATGTCTACCACTGGCAGTGCCAGAGT
GGGGATGAACCATGGCAGCCTCTAGTAGTACCACAAGAGCCCAAGCCAGGCTGCCAGCAACTCCAGA
GAAGTCCCAACCAGCCAGTGGAAAGTGTGAGAGTGTCCCGGCTCTCTGCTACCCTGCATTCTGGCA
CTTGACTCCAGGTTCCACCCAAGCCAGCGTCTTCAGAGAGGCTAGCTGTACCAGGGAGGCACTACC
AGAGAATCAAGTGTGAGGAGTAGCCAGGCTTCCAGCCTACAACCATGGAAGGCTCACCCAGGGCAGCT
CATCCCTGCTGTATCAGAACCCACAGATCATCATCAACCCAGCCGACAGAAGATGGTACAAAAGCT
GGCTCTTATGAAGAAGGGTCTTGATAGCCTGCAACTGCTGTATCAGGCTTTTCCAGGCTTGGAT
TTAGAACCTGAAAAGAGCCAGGGACCTGAAGAAAGTGTGAATTCAGAGC

ACGCGTACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT
ACAAGGATGACGACGATAAGGTTTAA

Protein Sequence: >MR210252 protein sequence
 Red=Cloning site Green=Tags(s)

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MDALEPADWCQFAALIVRDQTELRLCERSEQRTASVLWPWINRNARVADLVHILTHLQLLRARDIITAWH
PPAPVVPSTAAPRPSSIAGSEAGDWSRKLQSSASTFLSPAFPGSQTHSESELLQVPLPVSLGPPLPS
SAPSSTKQSSPESPVSGLQRAHPSPF CWPFC EISQGT CNF SEELRIGEGGF GCVYRAVMRNTTYAVKRLK
EEADLEWTMVKQSFLTEVEQLSRFRHPNIVDFAGYCAESGLYCLVYGFLPNGSLEDQLHLQTQACSPLSW
PQRDLILLGTARAIQFLHQDSPSLIHGDIKSSNVLLDERLMPKLGDFLARF SRFAGAKASQSSTVARTS
TVRGTLAYLPEEYIKTGR LAVDTDTFSFGVVILETLAQQRAVRTQGA KTKYLKDLIEDEAEEAGVTLKST
QPTLWVG VATDAWAAPIAAQIYK KHLDSRPGPCPPQLGLALAQLACCCMHRRAK RPPMTQRQNSQHSL
ALWLYLGRCSVELSGKGLLLCWMSLRSQEVYKRLEGLQAGPPWELEVAGHGSPSPQENSYMSTTGS AQ
S GDEPWQPLVVTTRAPAQAAQQLQRSPNQPVESDESVPGLSATLHSHW LTPGSHSPAS F REASCTQG GTT
RESSVRS SPGFQPTTMEGSPTGSSLLSSEPPQIIINPARQK MVQKLALYEEGVLDSLQLLSSGFFPGLD
LEPEKSQGP EESDEFQS
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TRTRPLEQKLI SEEDLAANDILDYKDDDDKV

Restriction Sites:

SgfI-MluI

Cloning Scheme:



ACCN: NM_001177973

ORF Size: 2154 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 Size: 3955 bp

RefSeq ORF: 2253 bp

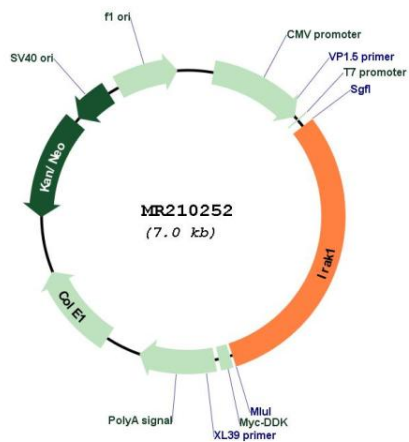
Locus ID: 16179

Cytogenetics: X 37.61 cM

MW: 78.3 kDa

Gene Summary: 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]

Product images:



Circular map for MR210252