

## Product datasheet for **MR227184**

### **Irak1 (NM\_001177976) Mouse Tagged ORF Clone**

#### **Product data:**

Product Type:	Expression Plasmids
Product Name:	Irak1 (NM_001177976) Mouse Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	Irak1
Synonyms:	AA408924; Il1rak; IRAK; IRAK-1; IRAK1-S; IRAK1b; mPLK; Plpk
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)



[View online »](#)

**ORF Nucleotide Sequence:**

>MR227184 representing NM\_001177976  
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**CGCATCGCC**

ATGGCCGGGGGGCCGGGCCCGGGGAGCCTGTGGTTCCAGGCGCCAGCACTTCTTGTACGAGGTGCCAC  
 CCTGGTTATGTGCCGTTCTACAAAGTATGGACGCCCTGGAGCCCGCGACTGGTCCAGTTCGCGGC  
 CTTGATCGTGCACGACCAGACAGAGCTGCGGCTGTGCGAGCGCTCCGAGCAGCGCACAGCCAGTGTCTG  
 TGGCCCTGGATCAACCGCAACGCGCGCTAGTGACCTCGTTCACATCCTCACGCACCTGCAGTGTCTG  
 GTGCGAGGGACATCATCACAGCCTGGCACCTCCTGCCCCGTTGTGCCCAAGCACCCTGCCCAAG  
 GCCCAGCAGCATCTGCAAGCTCTGAGGCCGGGACTGGAGCCCCGAAATTGCAGTCTCTGCCTCC  
 ACCTTCTCTCCCGAGCTTTCCAGGCTCCAGACCCATTCTGAGTCAGAGCTCCTCCAGTTCCACTCC  
 CTGTTTCCCTCGGGCCACCCTACCCTTTCAGCCCTTCTCCACCAAGTCAAGCCAGAGAGCCAGT  
 GTCTGGCTCCAAGAGCCCATCCTCCCGTTTTGCTGGCCCTTCTGTGAGATTTCCAAGGCACCTGC  
 AACTTCTCTGAAGAACTCAGATTGGAGAGGGTGGTTTTGGATGTGTGTACCGAGCAGTCATGAGAAATA  
 CTACATATGCTGTGAAGAGACTGAAGGAGGAAGCTGACCTAGAGTGGACTATGGTGAACAGAGTCTT  
 AACAGAGGTGGAACAGCTATCAAGTTTTCGTACCCAAATATCGTAGACTTTGCTGGCTACTGTGCAGAG  
 AGTGGCTTATACTGCCTTGTATGGCTTCTTGCCCAATGGCTCCTTGGAGGATCAGTCCACCTCAGA  
 CCCAGGCTGCTCCCACTTTCTGGCCTCAACGACTGGACATTTCTTGGGCACAGCCCGGCTATTCA  
 GTTTTTACATCAGGATAGCCCCAGCCTTATCCATGGAGACATCAAGATTCTAACGTGCTTCTGGATGAG  
 AGACTGATGCCAAGCTGGGAGACTTTGGCCTGGCTCGTTTTCAGCCGCTTTCGGGGGCCAAGCAAGCC  
 AGAGCAGTACTGTGGCCGGACTTCCACAGTTCGAGGTACCCTCGCCTACTTGCCTGAGGATACATCAA  
 GACAGGCCGACTGGCTGTGGACACCGATACCTTACGCTTTGGGGTGGTAATACTGGAGACCCTTGCTGGT  
 CAGAGGGCTGTGAGGACACAAGGTGCAAAGACCAAGTATTTGAAAGACCTGATTGAAGATGAGGCTGAAG  
 AGGCTGGAGTGACCCTGAAAAGCACCCAGCCTACTCTGTGGTGGGTGTAGCCACGGATGCTTGGCTGC  
 TCCAATTGCTGCCAGATCTATAAGAAGCACCTGGACTCCAGACCTGGGCCCTGCCACCCAGTTGGGC  
 CTGGCCCTGGCTCAACTAGCTTGTGCTGCATGCACCGTCCGGCCAAAGAGGGCCCCCATGACCCAGG  
 TATACAAGAGACTAGAAGGGCTTCAGGCAGGGCTCCCTGGGAGCTAGAGGTTGCCGGCCATGGCTCCCC  
 TTCCCCACAGGAGAACTCTACATGTCTACCCTGGCAGTCCCAGAGTGGGGATGAACCATGGCAGCCT  
 CTAGTAGTGACCACAAGAGCCCCAGCCAGGCTGCCAGCAACTCCAGAGAAGTCCAACAGCCAGTGG  
 AAAGTGATGAGAGTGTCCCGGCCCTCTGCTACCCTGCATTCTGGCACTTGACTCCAGTTCCACCC  
 AAGCCCAGCGTCTTCAGAGAGGCTAGCTGTACCCAGGGAGGCACTACCAGAGAATCAAGTGTGAGGAGT  
 AGCCCAGGCTTCCAGCCTACAACCATGGAAGGCTCACCCACGGGCAGCTCATCCCTGCTGTGCATCAGAAC  
 CACCACAGATCATCATCAACCCAGCCGACAGAAGATGGTACAAAAGCTGGCTCTTTATGAAGAAGGGGT  
 CTTGGATAGCCTGCAACTGCTGTGCATCAGGCTTTTCCAGATTTCTGGATATTGATGCTATTGGAATT  
 GAAGCCTTCATGTCTGAATTATTCATCAATCATATA

**ACGCGT**ACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT  
 ACAAGGATGACGACGATAAGGTTTAA

**Protein Sequence:** >MR227184 representing NM\_001177976  
 Red=Cloning site Green=Tags(s)

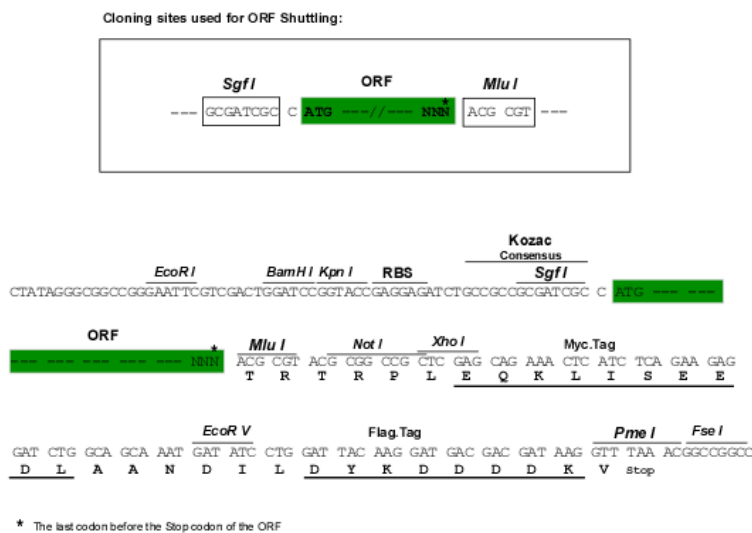
```
MAGGPGPEVPVPGAQHFLYEVPWVMCRFYKVMDALEPADWCQFAALIVRDQTELRLCERSEQRTASVL
WPWINRNARVADLVHILTHLQLLRARDIITAWHPPAPVPPSTAAPRPSSISAGSEAGDWSPRKLQSSAS
TFLSPAFFPGSQTHSESELLQVPLPVSLGPPLPSSAPSSTKSSPESPVSGLQRAHPSPF CWPFC EISQGTC
NFSEELRIGEGGFGCVYRAVMRNTTYAVKRLKEEADLEWTMVKQSFLTEVEQLSRFRHPNIVDFAGYCAE
SGLYCLVYGF L PNGSLEDQLHLQTQACSP LSWPQRDL D I L L G T A R A I Q F L H Q D S P S L I H G D I K S S N V L L D E
R L M P K L G D F G L A R F S R F A G A K A S Q S S T V A R T S T V R G T L A Y L P E E Y I K T G R L A V D T D T F S F G V V I E T L A G
Q R A V R T Q G A K T K Y L K D L I E D E A E E A G V T L K S T Q P T L W G V A T D A W A A P I A A Q I Y K H L D S R P G C P P Q L G
L A L A Q L A C C C M H R R A K K R P P M T Q V Y K R L E G L Q A G P P W E L E V A G H G S P S P Q E N S Y M S T T G S A Q S G D E P W Q P
L V V T T R A P A Q A A Q L Q R S P N Q P V E S D E S V P G L S A T L H S W H L T P G S H P S P A S F R E A S C T Q G G T T R E S S V R S
S P G F Q P T T M E G S P T G S S S L L S S E P P Q I I I N P A R Q K M V Q K L A L Y E E G V L D S L Q L L S S G F F P D F V D I D A I G I
E A F M S E L F I N H I
```

TRTRPLEQKLI SEEDLAANDILDYKDDDDKV

**Restriction Sites:**

Sgfl-MluI

**Cloning Scheme:**



**ACCN:** NM\_001177976

**ORF Size:** 2136 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\\_001177976.1](#), [NP\\_001171447.1](#)

**RefSeq Size:** 2478 bp

**RefSeq ORF:** 2139 bp

**Locus ID:** 16179

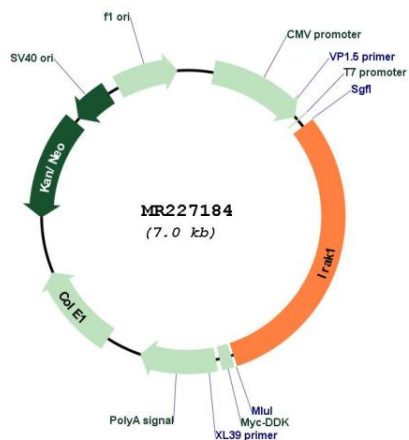
**UniProt ID:** [Q62406](#)

**Cytogenetics:** X 37.61 cM

**MW:** 78 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 MR227184