Interleukin-1 Receptor-Associated Kinase 1 (IRAK1) Mouse Recombinant Protein

PRODUCT OVERVIEW

Product Name	Interleukin-1 receptor-associated kinase 1 (Irak1), Recombinant Protein
Full Product Name	Recombinant Mouse Interleukin-1 receptor-associated kinase 1 (Irak1)
Product Gene Name	Irak1 recombinant protein
Product Synonym Gene Name	Irak1
Sequence	MAGGPGPGEP VVPGAQHFLY EVPPWVMCRF YKVMDALEPA DWCQFAALIV RDQTELRLCE RSEQRTASVL WPWINRNARV ADLVHILTHL QLLRARDIIT AWHPPAPVVP PSTAAPRPSS ISAGSEAGDW SPRKLQSSAS TFLSPAFPGS QTHSESELLQ VPLPVSLGPP LPSSAPSSTK SSPESPVSGL QRAHPSPFCW PFCEISQGTC NFSEELRIGE GGFGCVYRAV MRNTTYAVKR LKEEADLEWT MVKQSFLTEV EQLSRFRHPN IVDFAGYCAE SGLYCLVYGF LPNGSLEDQL HLQTQACSPL SWPQRLDILL GTARAIQFLH QDSPSLIHGD IKSSNVLLDE RLMPKLGDFG LARFSRFAGA KASQSSTVAR TSTVRGTLAY LPEEYIKTGR LAVDTDTFSF GVVILETLAG QRAVRTQGAK TKYLKDLIED EAEEAGVTLK STQPTLWVGV ATDAWAAPIA AQIYKKHLDS RPGPCPPQLG LALAQLACCC MHRRAKKRPP MTQVYKRLEG LQAGPPWELE VAGHGSPSPQ ENSYMSTTGS AQSGDEPWQP LVVTTRAPAQ AAQQLQRSPN QPVESDESVP GLSATLHSWH LTPGSHPSPA SFREASCTQG GTTRESSVRS SPGFQPTTME GSPTGSSSLL SSEPPQIIIN PARQKMVQKL ALYEEGVLDS LQLLSSGFFP GLDLEPEKSQ GPEESDEFQS
Host	E Coli or Yeast or Baculovirus or Mammalian Cell
Form/Format	Lyophilized or liquid (Format to be determined during the manufacturing process)
Purity/Purification	Greater or equal to 85% purity as determined by SDS-PAGE. (lot specific)
Preparation and Storage	Store at -20 degrees C. For long-term storage, store at -20 degrees C or -80 degrees C. Store working aliquots at 4 degrees C for up to one week. Repeated freezing and thawing is not recommended.
Molecular Weight	77,558 Da
Sequence Positions	1-710, Full length protein
Tag Information	This protein contains an N-terminal tag and may also contain a C-terminal tag. Tag types are determined by various factors including tag-protein stability, please inquire for tag information.
Sterility	Sterile filter available upon request.
Endotoxin	Low endotoxin available upon request.
3D Structure	ModBase 3D Structure for Q62406
Species	Mouse
ISO Certification	Manufactured in an ISO 9001:2015 Certified Laboratory.
Related Product Information for Irak1 recombinant protein	This gene encodes the interleukin-1 receptor-associated kinase 1, one of two putative serine threonine kinases that become associated with the interleukin-1 receptor (IL1R) upon stimulation. This gene is partially responsible for IL1-induced upregulation of the transcription factor NF-kappa B. Alternatively spliced transcript variants encoding different isoforms have been found for this gene.
Other Notes	Small volumes of Irak1 recombinant protein vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.
Searchable Terms for Irak1 purchase	MBS1339219 is a recombinant protein targeting Irak1. Also known as Recombinant Mouse Interleukin-1 receptor-associated kinase 1 (Irak1). Host: E Coli or Yeast or Baculovirus or Mammalian Cell.

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for Irak1. It may not necessarily be applicable to this product.

NCBI GI #	295789111
NCBI GeneID	16179
NCBI Accession #	NP_001171445.1
UniProt Primary Accession #	Q62406
UniProt Secondary Accession #	Q6Y3Z5; Q6Y3Z6; B1AUW4
UniProt Related Accession #	Q62406
GenBank Nucleotide #	NM_001177974.1
NCBI Official Full Name	interleukin-1 receptor-associated kinase 1 isoform 4
NCBI Official Synonym Full Names	interleukin-1 receptor-associated kinase 1
NCBI Official Symbol	Irak1
NCBI Official Synonym Symbols	IRAK; Plpk; mPLK; IRAK-1; IRAK1b; Il1rak; IRAK1-S; AA408924
UniProt Protein Name	Interleukin-1 receptor-associated kinase 1
UniProt Synonym Protein Names	Pelle-like protein kinase; mPLK
Protein Family	Interleukin-1 receptor-associated kinase
UniProt Gene Name	Irak1
UniProt Synonym Gene Names	Il1rak; IRAK; IRAK-1; mPLK
NCBI Protein Information	interleukin-1 receptor-associated kinase 1
UniProt Comments for Irak1	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 ().
Research Articles on Irak1	**1.** these findings identify a transcription-independent, rapid, and nongenomic glucocorticoid suppression of TLR9 ligand-mediated IRAK1 ubiquitination as a novel mechanism for restraining acute inflammatory reactions
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