Rabbit IRAK1 Polyclonal Antibody | anti-IRAK1 antibody

Phospho-IRAK1 (Thr100) Antibody

CATALOG #	HOST	REACTIVITY	APPLICATIONS
AAA31367	**Rabbit**	**Human, Mouse, Rat**	**Western Blot, Immunohistochemistry, Immunofluorescence, Immunocytochemistry, ELISA**

PRODUCT SYNONYMS

IRAK1; Polyclonal Antibody; Phospho-IRAK1 (Thr100) Antibody; AA48924; Il1rak; Interleukin 1 receptor associated kinase 1; Interleukin-1 receptor-associated kinase 1; IRAK; IRAK-1; Irak1; IRAK1-S; IRAK1_HUMAN; mPLK; OTTHUMP00000026014; OTTHUMP00000026015; OTTHUMP00000026020; OTTHUMP00000180621; Pelle; Pelle homolog; Pelle-like protein kinase; Plpk; anti-IRAK1 antibody

PRODUCT SPECIFICATIONS

Host	Rabbit
Reactivity	Human, Mouse, Rat
Clonality	Polyclonal
Isotype	Rabbit IgG
Specificity	Phospho-IRAK1 (Thr100) Antibody detects endogenous levels of IRAK1 only when phosphorylated at Thr100. Tissue Specificity: Isoform 1 and isoform 2 are ubiquitously expressed in all tissues examined, with isoform 1 being more strongly expressed than isoform 2.
Purity/Purification	The antibody is from purified rabbit serum by affinity purification via sequential chromatography on phospho-peptide and non-phospho-peptide affinity columns.
Form/Format	Liquid. Rabbit IgG in phosphate buffered saline, pH7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Concentration	1mg/ml (varies by lot)
Applicable Applications for anti-IRAK1 antibody	WB (Western Blot), IHC (Immunohistochemistry), IF (Immunofluorescence), ICC (Immunocytochemistry), ELISA (Peptide ELISA)
Application Notes	WB: 1:500-1:2000 IF/ICC: 1:100-1:500 IHC: 1:50-1:200 Peptide ELISA: 1:20,000-1:40,000
Immunogen	A synthesized peptide derived from human IRAK1 around the phosphorylation site of Thr100.
Conjugation	Unconjugated
Fragment	Fab fragment
Post Translational Modifications	Following recruitment on the activated receptor complex, phosphorylated on Thr-209, probably by IRAK4, resulting in a conformational change of the kinase domain, allowing further phosphorylations to take place. Thr-387 phosphorylation in the activation loop is required to achieve full enzymatic activity.Polyubiquitinated by TRAF6 after cell stimulation with IL-1-beta by PELI1, PELI2 and PELI3. Polyubiquitination occurs with polyubiquitin chains linked through 'Lys-63'. Ubiquitination promotes interaction with NEMO/IKBKG. Also sumoylated; leading to nuclear translocation.

Subunit Structure	Homodimer (By similarity). Forms a complex with TRAF6, PELI1, IRAK4 and MYD88. Direct binding of SMAD6 to PELI1 prevents complex formation and hence negatively regulates IL1R-TLR signaling and eventually NF-kappa-B-mediated gene expression. The TRAF6-PELI1-IRAK4-MYD88 complex recruits MAP3K7/TAK1, TAB1 and TAB2 to mediate NF-kappa-B activation. Interaction with MYD88 recruits IRAK1 to the stimulated receptor complex. Interacts with TOLLIP; this interaction occurs in the cytosol prior to receptor activation. Interacts with IL1RL1. Interacts with PELI1 and TRAF6. Interacts (when polyubiquitinated) with IKBKG/NEMO. Interacts with RSAD2/viperin (By similarity). Interacts with IRAK1BP1 (By similarity). Interacts with PELI2 (By similarity). Interacts with ZC3H12A; this interaction increases the interaction between ZC3H12A and IKBKB/IKKB (By similarity). Interacts with IRAK4. Interacts with PELI3. Interacts with INAVA; the interaction takes place upon PRR stimulation. Interacts (via C-terminus) with NFATC4 (via N-terminus). (Microbial infection) Interacts with mumps virus protein SH; this interaction inhibits downstream NF-kappa-B pathway activation.
Similarity	The ProST region is composed of many proline and serine residues (more than 20 of each) and some threonines. This region is the site of IRAK-1 hyperphosphorylation.Belongs to the protein kinase superfamily. TKL Ser/Thr protein kinase family. Pelle subfamily.
Subcellular Location	Cytoplasm. Nucleus. Lipid droplet. Note: Translocates to the nucleus when sumoylated. RSAD2/viperin recruits it to the lipid droplet (By similarity).
Preparation and Storage	Store at -20 degree C. Stable for 12 months from date of receipt.

IMAGES

Application Data
At 25 degree C. Samples were then incubated with primary Ab(At 37 degree C. An AlexaFluor594 conjugated goat anti-rabbit IgG(H+L) Ab(Red) and an AlexaFluor488 conjugated goat anti-mouse IgG(H+L) Ab(Green) were used as the secondary antibody.The nuclear counter stain is DAPI(blue).

IHC (Immunohistochemistry)
At 1/100 staining Mouse kidney tissue by IHC-P. The sample was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The sample was then blocked and incubated with the primary antibody at 4 degree C overnight. An HRP conjugated anti-Rabbit antibody was used as the secondary antibody.

IHC (Immunohistchemistry)
At 1/100 staining Mouse colorectal tissue by IHC-P. The sample was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The sample was then blocked and incubated with the primary antibody at 4 degree C overnight. An HRP conjugated anti-Rabbit antibody was used as the secondary antibody.

IHC (Immunohistochemistry)
At 1/100 staining Mouse testis tissue by IHC-P. The sample was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The sample was then blocked and incubated with the primary antibody at 4 degree C overnight. An HRP conjugated anti-Rabbit antibody was used as the secondary antibody.

IHC (Immunohistochemistry)
At 1/100 staining Mouse ovarian tissue by IHC-P. The sample was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The sample was then blocked and incubated with the primary antibody at 4 degree C overnight. An HRP conjugated anti-Rabbit antibody was used as the secondary antibody.

IHC (Immunohistochemistry)
At 1/100 staining Rat ovarian tissue by IHC-P. The sample was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The sample was then blocked and incubated with the primary antibody at 4 degree C overnight. An HRP conjugated anti-Rabbit antibody was used as the secondary antibody.

ADDITIONAL INFORMATION

Related Product Information for anti-IRAK1 antibody	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.

NCBI AND UNIPROT INFORMATION

NCBI GI #	68800343
NCBI GeneID	3654
NCBI Accession #	NP_001020413.1
NCBI GenBank Nucleotide #	NM_001025242.1
UniProt Accession #	P51617; Q7Z5V4; Q96C06; Q96RL2; D3DWW3; D3DWW4
Molecular Weight	76,537 Da
NCBI Official Full Name	interleukin-1 receptor-associated kinase 1 isoform 2
NCBI Official Synonym Full Names	interleukin-1 receptor-associated kinase 1
NCBI Official Symbol	IRAK1
NCBI Official Synonym Symbols	IRAK; pelle
NCBI Protein Information	interleukin-1 receptor-associated kinase 1; IRAK-1; Pelle homolog
UniProt Protein Name	Interleukin-1 receptor-associated kinase 1
UniProt Gene Name	**IRAK1**
UniProt Synonym Gene Names	IRAK; IRAK-1
UniProt Entry Name	IRAK1_HUMAN

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.

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