

Phospho-IRAK1(S376) Antibody Blocking peptide
Synthetic peptide
Catalog # BP3139a**Specification**

Phospho-IRAK1(S376) Antibody Blocking peptide - Product InformationPrimary Accession [P51617](#)**Phospho-IRAK1(S376) Antibody Blocking peptide - Additional Information****Gene ID** 3654**Other Names**

Interleukin-1 receptor-associated kinase 1, IRAK-1, IRAK1, IRAK

Target/Specificity

The synthetic peptide sequence used to generate the antibody [AP3139a](/product/products/AP3139a) was selected from the region of human Phospho-IRAK1-S376. A 10 to 100 fold molar excess to antibody is recommended. Precise conditions should be optimized for a particular assay.

Format

Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

Storage

Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

Precautions

This product is for research use only. Not for use in diagnostic or therapeutic procedures.

Phospho-IRAK1(S376) Antibody Blocking peptide - Protein Information**Name** IRAK1 ([HGNC:6112](#))**Synonyms** IRAK**Function**

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.

Cellular Location

Cytoplasm. Nucleus. Lipid droplet Note=Translocates to the nucleus when sumoylated. RSAD2/viperin recruits it to the lipid droplet (By similarity).

Tissue Location

Isoform 1 and isoform 2 are ubiquitously expressed in all tissues examined, with isoform 1 being more strongly expressed than isoform 2.

Phospho-IRAK1(S376) Antibody Blocking peptide - Protocols

Provided below are standard protocols that you may find useful for product applications.

- [Blocking Peptides](#)

Phospho-IRAK1(S376) Antibody Blocking peptide - Images**Phospho-IRAK1(S376) Antibody Blocking peptide - Background**

IRAK1 binds to the IL-1 type I receptor following IL-1 engagement, triggering intracellular signaling cascades leading to transcriptional up-regulation and mRNA stabilization. Isoform 1 binds rapidly but is then degraded allowing isoform 2 to mediate a slower, more sustained response to the cytokine. Isoform 2 is inactive suggesting that the kinase activity of this enzyme is not required for IL-1 signaling. Once phosphorylated, IRAK1 recruits the adapter protein PELI1. This protein is partially responsible for IL1-induced upregulation of the transcription factor NF-kappa B.

Phospho-IRAK1(S376) Antibody Blocking peptide - References

De Nardo, D., et al., J. Biol. Chem. 280(11):9813-9822 (2005). Siedlar, M., et al., Int. J. Cancer 114(1):144-152 (2005). Huang, Y., et al., J. Biol. Chem. 279(49):51697-51703 (2004). Noubir, S., et al., J. Biol. Chem. 279(24):25189-25195 (2004). Cuschieri, J., et al., Shock 21(2):182-188 (2004).