

**TLR4 Antibody (Center) Blocking Peptide**  
**Synthetic peptide**  
**Catalog # BP9685c****Specification**

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**TLR4 Antibody (Center) Blocking Peptide - Product Information**Primary Accession [O00206](#)**TLR4 Antibody (Center) Blocking Peptide - Additional Information****Gene ID** 7099**Other Names**

Toll-like receptor 4, hToll, CD284, TLR4

**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.

**TLR4 Antibody (Center) Blocking Peptide - Protein Information****Name** TLR4**Function**

Transmembrane receptor that functions as a pattern recognition receptor recognizing pathogen- and damage-associated molecular patterns (PAMPs and DAMPs) to induce innate immune responses via downstream signaling pathways (PubMed:<a href="http://www.uniprot.org/citations/16622205" target="\_blank">16622205</a>, PubMed:<a href="http://www.uniprot.org/citations/10835634" target="\_blank">10835634</a>, PubMed:<a href="http://www.uniprot.org/citations/15809303" target="\_blank">15809303</a>, PubMed:<a href="http://www.uniprot.org/citations/17478729" target="\_blank">17478729</a>, PubMed:<a href="http://www.uniprot.org/citations/20037584" target="\_blank">20037584</a>, PubMed:<a href="http://www.uniprot.org/citations/20711192" target="\_blank">20711192</a>, PubMed:<a href="http://www.uniprot.org/citations/23880187" target="\_blank">23880187</a>, PubMed:<a href="http://www.uniprot.org/citations/27022195" target="\_blank">27022195</a>, PubMed:<a href="http://www.uniprot.org/citations/17292937" target="\_blank">17292937</a>, PubMed:<a href="http://www.uniprot.org/citations/29038465" target="\_blank">29038465</a>). At the plasma membrane, cooperates with LY96 to mediate the innate immune response to bacterial lipopolysaccharide (LPS) (PubMed:<a href="http://www.uniprot.org/citations/27022195" target="\_blank">27022195</a>). Also involved in LPS-independent inflammatory responses triggered by free fatty acids, such as palmitate, and Ni(2+) (PubMed:<a href="http://www.uniprot.org/citations/20711192" target="\_blank">20711192</a>).

Mechanistically, acts via MYD88, TIRAP and TRAF6, leading to NF-kappa-B activation, cytokine secretion and the inflammatory response (PubMed:<a href="http://www.uniprot.org/citations/9237759" target="\_blank">9237759</a>, PubMed:<a href="http://www.uniprot.org/citations/10835634" target="\_blank">10835634</a>, PubMed:<a href="http://www.uniprot.org/citations/27022195" target="\_blank">27022195</a>, PubMed:<a href="http://www.uniprot.org/citations/21393102" target="\_blank">21393102</a>). Alternatively, CD14-mediated TLR4 internalization via endocytosis is associated with the initiation of a MYD88-independent signaling via the TICAM1-TBK1-IRF3 axis leading to type I interferon production (PubMed:<a href="http://www.uniprot.org/citations/14517278" target="\_blank">14517278</a>). In addition to the secretion of proinflammatory cytokines, initiates the activation of NLRP3 inflammasome and formation of a positive feedback loop between autophagy and NF-kappa-B signaling cascade (PubMed:<a href="http://www.uniprot.org/citations/32894580" target="\_blank">32894580</a>). In complex with TLR6, promotes inflammation in monocytes/macrophages by associating with TLR6 and the receptor CD86 (PubMed:<a href="http://www.uniprot.org/citations/23880187" target="\_blank">23880187</a>). Upon ligand binding, such as oxLDL or amyloid-beta 42, the TLR4:TLR6 complex is internalized and triggers inflammatory response, leading to NF-kappa-B-dependent production of CXCL1, CXCL2 and CCL9 cytokines, via MYD88 signaling pathway, and CCL5 cytokine, via TICAM1 signaling pathway (PubMed:<a href="http://www.uniprot.org/citations/23880187" target="\_blank">23880187</a>). In myeloid dendritic cells, vesicular stomatitis virus glycoprotein G but not LPS promotes the activation of IRF7, leading to type I IFN production in a CD14- dependent manner (PubMed:<a href="http://www.uniprot.org/citations/23880187" target="\_blank">23880187</a>, PubMed:<a href="http://www.uniprot.org/citations/15265881" target="\_blank">15265881</a>). Required for the migration-promoting effects of ZG16B/PAUF on pancreatic cancer cells.

#### **Cellular Location**

Cell membrane; Single-pass type I membrane protein. Early endosome. Cell projection, ruffle {ECO:0000250|UniProtKB:Q9QUK6}. Note=Upon complex formation with CD36 and TLR6, internalized through dynamin-dependent endocytosis (PubMed:20037584). Colocalizes with RFTN1 at cell membrane and then together with RFTN1 moves to endosomes, upon lipopolysaccharide stimulation. Co-localizes with ZG16B/PAUF at the cell membrane of pancreatic cancer cells (PubMed:36232715)

#### **Tissue Location**

Highly expressed in placenta, spleen and peripheral blood leukocytes (PubMed:9435236, PubMed:9237759). Detected in monocytes, macrophages, dendritic cells and several types of T-cells (PubMed:9237759, PubMed:27022195). Expressed in pancreatic cancer cells but not in normal pancreatic cells (at protein level) (PubMed:36232715).

### **TLR4 Antibody (Center) Blocking Peptide - Protocols**

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

- [Blocking Peptides](#)

### **TLR4 Antibody (Center) Blocking Peptide - Images**

### **TLR4 Antibody (Center) Blocking Peptide - Background**

TLR4 is a member of the Toll-like receptor (TLR) family which plays a fundamental role in pathogen recognition and activation of innate immunity. TLRs are highly conserved from Drosophila to humans and share structural and functional similarities. They recognize pathogen-associated molecular patterns (PAMPs) that are expressed on infectious agents, and mediate the production of cytokines necessary for the development of effective immunity. The various TLRs exhibit different patterns of expression. This receptor is most abundantly expressed in placenta, and in myelomonocytic subpopulation of the leukocytes. It has been implicated in signal transduction

events induced by lipopolysaccharide (LPS) found in most gram-negative bacteria.

#### **TLR4 Antibody (Center) Blocking Peptide - References**

# Sam-Agudu, N.A., et al. Am. J. Trop. Med. Hyg. 82(4):548-555(2010) # Palomino-Morales, R.J., et al. Arthritis Res. Ther. 12 (2), R51 (2010) # Rigoli, L., et al. Anticancer Res. 30(2):513-517(2010) # da Silva Correia, J., et al. J. Biol. Chem. 277(3):1845-1854(2002) # Shimazu, R., et al. J. Exp. Med. 189(11):1777-1782(1999)