10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

M TLR4 Antibody (N-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP1504a

Product Information

Application	WB, E
Primary Accession	Q9QUK6
Reactivity	Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	95519
Antigen Region	25-55

Additional Information

Gene ID	21898
Other Names	Toll-like receptor 4, CD284, Tlr4, Lps
Target/Specificity	This Mouse TLR4 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 25-55 amino acids from the N-terminal region of mouse TLR4.
Dilution	WB~~1:1000 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	M TLR4 Antibody (N-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

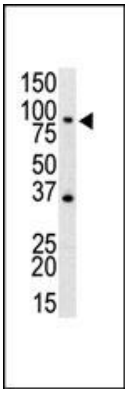
Name	Tlr4
Synonyms	Lps
Function	Transmembrane receptor that functions as a pattern recognition receptor recognizing pathogen- and damage-associated molecular patterns (PAMPs and DAMPs) to induce innate immune responses via downstream signaling pathways (PubMed:20133493, PubMed:9851930, PubMed:9989976). At the

	plasma membrane, cooperates with LY96 to mediate the innate immune response to bacterial lipopolysaccharide (LPS) (PubMed:20133493, PubMed:9851930, PubMed:9989976). Also involved in LPS-independent inflammatory responses triggered by free fatty acids, such as palmitate, and Ni(2+). Mechanistically, acts via MYD88, TIRAP and TRAF6, leading to NF-kappa-B activation, cytokine secretion and the inflammatory response (PubMed:24380872). 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. 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. In complex with TLR6, promotes inflammation in monocytes/macrophages by associating with TLR6 and the receptor CD86. 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. 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 (By similarity).
Cellular Location	Cell membrane; Single-pass type I membrane protein. Early endosome {ECO:0000250|UniProtKB:O00206}. Cell projection, ruffle. Note=Upon complex formation with CD36 and TLR6, internalized through dynamin-dependent endocytosis Colocalizes with RFTN1 at cell membrane and then together with RFTN1 moves to endosomes, upon lipopolysaccharide stimulation {ECO:0000250|UniProtKB:O00206}
Tissue Location	Expressed in macrophages (at protein level) (PubMed:28098138, PubMed:35896747). Highly expressed in heart, spleen, lung and muscle. Lower levels are found in liver and kidney (PubMed:23812099).

Background

TLR4, a type I membrane protein that belongs to the Toll-like receptor family, cooperates with LY96 and CD14 to mediate the innate immune response to bacterial lipopolysaccharide (LPS). It acts via MyD88, TIRAP and TRAF6, leading to NF-kappa-B activation, cytokine secretion and the inflammatory response TLR4 Belongs to the lipopolysaccharide (LPS) receptor, a multi-protein complex containing at least CD14, LY96 and TLR. TLR4 binds to LY96 via the extracellular domain, and to MyD88 and TIRAP via their respective TIR domains. The protein contains 19 leucine-rich (LRR) repeats, and It is highly expressed in heart, spleen, lung and muscle. Lower levels are found in liver and kidney. Interstrain analyses reveal that TLR4 is a polymorphic protein and that the extracellular domain is far more variable than the cytoplasmic domain, which is variable at the C-terminal.

Images



Western blot analysis of anti-mTLR4 Pab (Cat. #AP1504a) in mouse spleen cell lysate. mTLR4 (arrow) was detected using purified Pab. Secondary HRP-anti-rabbit was used for signal visualization with chemiluminescence.

Citations

- Moderate prenatal alcohol exposure suppresses the TLR4-mediated innate immune response in the hippocampus of young rats.
- The tumor suppressor p15Ink4b regulates the differentiation and maturation of conventional dendritic cells.
- Caspase-8 promotes NLRP1/NLRP3 inflammasome activation and IL-1β production in acute glaucoma.
- Uncontrolled inflammation induced by AEG-1 promotes gastric cancer and poor prognosis.
- Efficacy of atorvastatin on hippocampal neuronal damage caused by chronic intermittent hypoxia: involving TLR4 and its downstream signaling pathway.
- Lead exposure induced microgliosis and astrogliosis in hippocampus of young mice potentially by triggering TLR4-MyD88-NFκB signaling cascades.
- Resveratrol alleviates lysophosphatidylcholine-induced damage and inflammation in vascular endothelial cells.
- Inhibition of MyD88 Signaling Skews Microglia/Macrophage Polarization and Attenuates Neuronal Apoptosis in the Hippocampus After Status Epilepticus in Mice.
- Pretreatment of Huaiqihuang extractum protects against cisplatin-induced nephrotoxicity.
- Atherogenic high cholesterol/high fat diet induces TLRs-associated pulmonary inflammation in C57BL/6J mice.
- Arteriogenesis requires toll-like receptor 2 and 4 expression in bone-marrow derived cells.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.