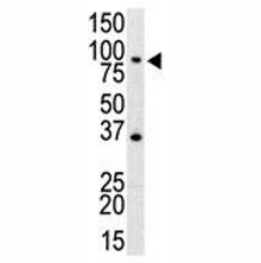
TLR4 Antibody / Toll-like receptor 4 (F44373)

Catalog No.	Formulation	Size
F44373-0.4ML	In 1X PBS, pH 7.4, with 0.09% sodium azide	0.4 ml
F44373-0.08ML	In 1X PBS, pH 7.4, with 0.09% sodium azide	0.08 ml

Bulk quote request

Availability	1-3 business days
Species Reactivity	Mouse
Format	Purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit Ig
Purity	Purified
UniProt	Q9QUK6
Applications	Western blot: 1:1000
Limitations	This anti-TLR4 antibody is available for research use only.



Western blot analysis of anti-TLR4 antibody and mouse spleen cell lysate.

Description

TLR4 antibody targets Toll-like receptor 4, a type I transmembrane pattern recognition receptor that plays a central role in innate immune sensing and inflammatory signaling. Toll-like receptor 4, also referred to as TLR4, CD284, or lipopolysaccharide receptor, is best known for recognizing bacterial lipopolysaccharide in conjunction with accessory molecules such as MD-2 and CD14. Upon ligand engagement, TLR4 initiates intracellular signaling cascades that activate NF-kappaB and interferon regulatory factors, driving transcription of pro-inflammatory cytokines and immune response genes.

At the cellular level, Toll-like receptor 4 is primarily localized to the plasma membrane and endosomal compartments, reflecting its role in detecting extracellular and internalized microbial components. TLR4 expression is prominent in immune cells including macrophages, monocytes, dendritic cells, and neutrophils, but is also observed in endothelial cells, epithelial cells, and certain parenchymal tissues. This broad expression pattern enables TLR4 to coordinate immune surveillance at tissue interfaces and respond rapidly to pathogenic stimuli or tissue damage.

TLR4 signaling proceeds through both MyD88-dependent and TRIF-dependent pathways, allowing the receptor to trigger immediate inflammatory responses as well as interferon-mediated signaling programs. Tight regulation of Toll-like receptor 4 activity is essential, as excessive or prolonged activation can contribute to chronic inflammation, tissue injury, and immune dysregulation. Dysregulated TLR4 signaling has been implicated in a range of conditions, including sepsis, autoimmune disease, metabolic inflammation, and cancer-associated immune modulation.

In cancer biology, TLR4 expression within tumor cells and the tumor microenvironment has been linked to altered immune infiltration, inflammatory signaling, and tumor progression. Depending on context, Toll-like receptor 4 activation may promote anti-tumor immune responses or support tumor growth through chronic inflammatory signaling. Detection of TLR4 expression provides insight into innate immune pathway engagement and inflammatory status in both immune and non-immune tissues.

This TLR4 antibody is suitable for research applications involving detection of Toll-like receptor 4 expression and localization in cells and tissue sections. Use of a TLR4 antibody supports investigation of innate immune signaling, inflammatory pathway activation, and receptor distribution in physiological and disease-relevant experimental systems.

Application Notes

Titration of the anti-TLR4 antibody may be required due to differences in protocols and secondary/substrate sensitivity.

Immunogen

A portion of amino acids 25-55 from the mouse protein was used as the immunogen for this anti-TLR4 antibody.

Storage

Aliquot the anti-TLR4 antibody and store frozen at -20oC or colder. Avoid repeated freeze-thaw cycles.

Copyright © NSJ Bioreagents. All rights reserved.