

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human TLR4 in direct ELISAs and Western blots. In direct ELISAs, approximately 10% cross-reactivity with recombinant mouse TLR4 is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	Mouse myeloma cell line NS0-derived recombinant human TLR4 Glu24-Lys631 Accession # O00206
Conjugate	Alexa Fluor 532 Excitation Wavelength: 534 nm Emission Wavelength: 553 nm
Formulation	Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide
	*Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. [General Protocols](#) are available in the Technical Information section on our website.

CyTOF-ready	Optimal dilution of this antibody should be experimentally determined.
Neutralization	Optimal dilution of this antibody should be experimentally determined.
Flow Cytometry	Optimal dilution of this antibody should be experimentally determined.
Immunocytochemistry	Optimal dilution of this antibody should be experimentally determined.
Immunohistochemistry	Optimal dilution of this antibody should be experimentally determined.

PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied

BACKGROUND

TLR4 is a 100 kDa type I transmembrane glycoprotein that belongs to the mammalian Toll-Like Receptor family of pathogen pattern recognition molecules. In the literature molecular weights correspondent to 110 kDa and 130 kDa were reported for TLR4 (1). MD-2, also known as ESOP-1, is a 25 kDa secreted protein that is required for TLR4-mediated responses to bacterial lipopolysaccharide (LPS) (1-4). The human TLR4 cDNA encodes an 839 amino acid (aa) precursor that contains a 23 aa signal sequence, a 608 aa extracellular domain (ECD), a 21 aa transmembrane segment, and a 187 aa cytoplasmic domain. TLR4 contains 21 leucine rich repeats in its ECD and one cytoplasmic Toll/IL-1 receptor (TIR) domain (5). The ECD of human TLR4 shares approximately 25% aa sequence identity with other TLRs and 60%-74% aa sequence identity with bovine, equine, feline, mouse, rat, and porcine TLR4. The human MD-2 cDNA encodes a 160 aa precursor with an 18 aa signal sequence (5). Human MD-2 shares 20% aa sequence identity with MD-1 and 62%-64% aa sequence identity with bovine, mouse, and rat MD-2. MD-2 associates with TLR4 on monocytes, macrophages, dendritic cells, and B cells (6-8). MD-2 expression is required for cell surface localization of TLR4 and for optimal LPS-induced TLR4 signaling (8, 9). MD-2 also forms soluble disulfide-linked homo-oligomers which can interact with TLR4 (7). Through a domain separate from its TLR4-binding domain, MD-2 extracts LPS from circulating CD14-LPS complexes and carries the LPS into a ternary complex with TLR4 (10-12). The interaction of MD-2/LPS with TLR4 induces receptor oligomerization and the triggering of an inflammatory response (13). Increased levels of plasma MD-2 in septic shock patients sensitizes MD-2 non-expressing epithelial cells to LPS and promotes widespread tissue inflammation (14).

PRODUCT SPECIFIC NOTICES

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