Human TLR2 Antibody

Monoclonal Mouse IgG_{2B} Clone # 383936

Catalog Number: MAB2616

DESCRIPTION

Species Reactivity	Human
Specificity	Stains human TLR2 transfectants but not irrelevant transfectants.
Source	Monoclonal Mouse IgG_{2B} Clone # 383936
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	NS0 mouse myeloma cell line transfected with human TLR2 Accession # O60603
Endotoxin Level	<0.10 EU per 1 µg of the antibody by the LAL method.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied as a 0.2 µm filtered solution in PBS.

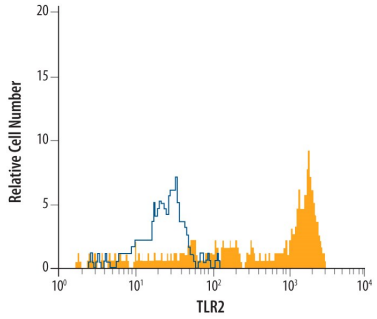
APPLICATIONS

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.*

	Recommended Concentration	Sample
Flow Cytometry	2.5 µg/10^6 cells	See Below
CyTOF-ready	Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.	
Neutralization	Measured by its ability to neutralize Pam_3CSK_4-induced IL-8 secretion in the HEK293 human embryonic kidney cell line transfected with human TLR2. The Neutralization Dose (ND_{50}) is typically 0.03-0.15 µg/mL in the presence of 0.5 µg/mL The synthetic tripalmitoylated lipopeptide Pam_3CSK_4.	

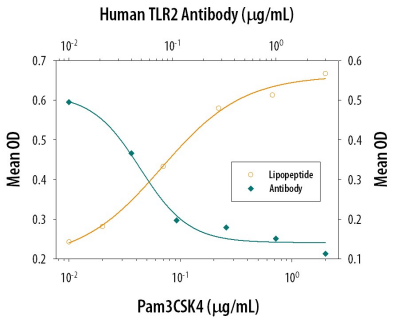
DATA

Flow Cytometry



Detection of TLR2 in Human Monocytes by Flow Cytometry. Human whole blood monocytes were stained with Mouse Anti-Human TLR2 Monoclonal Antibody (Catalog # MAB2616, filled histogram) or isotype control antibody (Catalog # MAB0041, open histogram), followed by Phycoerythrin-conjugated Anti-Mouse IgG $F(ab')_2$ Secondary Antibody (Catalog # F0102B).

Neutralization



IL-8 Secretion Induced by Pam_3CSK_4 and Neutralization by Human TLR2 Antibody. The synthetic tripalmitoylated lipopeptide Pam_3CSK_4 stimulates IL-8 secretion in the HEK293 human embryonic kidney cell line transfected with human TLR2, in a dose-dependent manner (orange line), as measured by the Human CXCL8/IL-8 Quantikine ELISA Kit (Catalog # D8000C). IL-8 secretion elicited by Pam_3CSK_4 (0.5 µg/mL) is neutralized (green line) by increasing concentrations of Mouse Anti-Human TLR2 Monoclonal Antibody (Catalog # MAB2616). The ND_{50} is typically 0.03-0.15 µg/mL.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

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BACKGROUND

Human toll-like receptor (TLR) family includes ten members that activate the innate immune response via an ability to recognize molecular structures found in a variety of microbial pathogens (1-3). All TLR family members are type I transmembrane proteins with a large number of extracellular leucine-rich repeats (LRRs) and a cytoplasmic Toll/IL-1 receptor (TIR) domain. Human TLR2 is synthesized as a 784 amino acid (aa) precursor (2) that contains a signal sequence (aa 1-18), an extracellular domain (aa 19-588) with approximately 20 LRRs, a transmembrane segment (aa 589-609), and a cytoplasmic TIR domain (aa 610-784). The receptor is expressed on a number of cell types including monocytes, dendritic cells, neutrophils, B cells endothelial cells, and hepatocytes (1, 2, 4). TLR2 functions as part of a heterodimeric complex with either TLR1 or TLR6, and possibly other co-receptors (1). These complexes recognize lipoproteins and glycolipids from gram-positive and gram-negative bacteria as well as mycoplasma and yeast. TLR2/TLR1 heterodimers bind triacylated lipopeptides, while the TLR2/TLR6 heterodimer preferentially recognizes diacylated lipopeptides (5). Upon ligand recognition, TLR2 delivers an activating signal via the associated adapter molecules, MyD88 and TIRAP (1, 6). TLR2 signaling results in dendritic cell maturation characterized by increased surface expression of class II MHC and the T cell costimulators, CD80 and CD86 (1, 2). Activation via TLR2 also results in production of a number of pro-inflammatory cytokines including TNF-α, IL-2, IL-6, IL-12, and MIP-2 (1-3).

References:

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4. Flo, T. *et al.* (2001) J. Leukoc. Biol. **69**:474.
5. Akira, S. (2003) Curr. Opin. Immunol. **15**:5.
6. Yamamoto, M. *et al.* (2002) Nature **420**:324.

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