

# MAb hTLR2

Purified monoclonal antibody to human TLR2

Catalog # mab-htrl2

For research use only, not for diagnostic or therapeutic use

Version # 06E18-MT

## PRODUCT INFORMATION

### Content

100 µg purified monoclonal anti-hTLR2 antibody (MAb-hTLR2), provided lyophilized

**Clone:** TL2.1

**Isotype:** Mouse IgG2a

**Formulation:** PBS pH 7.4, 0.05% sodium azide

### Antibody resuspension

Add 1 ml of sterile water to obtain a concentration of 0.1 mg/ml.

### Storage

- Product is shipped at room temperature. Store lyophilized MAb-hTLR2 at -20°C. Product is stable for 1 year.

- Resuspended MAb-hTLR2 is stable up to 1 year when stored at -20°C.

### Description

MAb hTLR2 (TL2.1) is a monoclonal antibody specific for human Toll-like receptor 2 (TLR2, CD282). MAb hTLR2 is a blocking antibody that has been used to study the role of TLR2 as a pattern recognition receptor in microbial molecules induced cytokine production from human peripheral blood mononuclear cells. MAb hTLR2 can be utilized for immunoprecipitation of human TLR2 (~90 kDa). The antibody is cross reactive with cynomolgus monkey, rhesus monkey and marmoset monkey.

## BACKGROUND

Toll-Like receptors (TLRs) play a critical role in early innate immunity to invading pathogens by sensing microorganisms. These evolutionary conserved receptors recognize highly conserved structural motifs only expressed by microbial pathogens, called pathogen-associated microbial patterns (PAMPs). Stimulation of TLRs by PAMPs initiates a signaling cascade leading to the secretion of proinflammatory cytokines following NF-κB activation. To date ten human and twelve murine TLRs have been characterized, TLR1 to TLR10 in humans, and TLR1 to TLR9, TLR11, TLR12 (aka TLR11) and TLR13 in mice, the homolog of TLR10 being a pseudogene.

TLR2 is involved in the recognition of a wide array of microbial molecules. TLR2 recognizes lipoteichoic acid and lipoprotein from gram-positive bacteria, lipoarabinomannan from mycobacteria, and zymosan from yeast cell wall. Moreover, TLR2 participates in the recognition of some types of LPS. TLR2 is known to heterodimerize with other TLRs, a property believed to extend the range of microbial molecules that TLR2 can recognize. TLR2 cooperates with TLR6 in response to diacylated mycoplasmal lipopeptide<sup>1</sup>, and associates with TLR1 to recognize triacylated lipopeptides<sup>2</sup>. Furthermore, pathogen recognition by TLR2 is strongly enhanced by CD14<sup>3</sup>.

## APPLICATIONS

MAb hTLR2 (TL2.1) can be used for flow cytometry, immunoprecipitation, immunohistochemical staining of frozen tissue sections and Western blotting. Furthermore, MAb TLR2 is useful for neutralization of TLR2, it blocks TLR2 agonists induced cellular activation.

### Applications tested

MAb hTLR2 has been tested in neutralizing experiments.

Neutralization experiments were performed in cells that naturally express or were transfected to express human TLR2, such as HEK293 or THP1 cells. These cells were further transfected with pNiFty-SEAP, a plasmid that expresses a secreted embryonic alkaline phosphatase (SEAP) gene under the control of an NF-κB-inducible ELAM-1 (E-selectin) promoter<sup>4</sup>. Transfected cells were incubated with 10-100 ng/ml MAb hTLR2 (TL2.1) and a control MAb TLR for 10 min prior to the addition of 5 ng/ml Pam3CSK4. Neutralization of TLR2 signaling by MAb hTLR2 was determined after 24 hour incubation by assessing NF-κB-induced SEAP production using HEK-Blue™ Detection. HEK-Blue™ Detection is a SEAP detection cell culture medium that turns blue following TLR stimulation but remains pink if neutralization occurs. SEAP levels can be assessed by the naked eye or spectrophotometrically by reading the OD at 655 nm.

### References

1. Girard R *et al.*, 2003. Lipopolysaccharides from Legionella and Rhizobium stimulate mouse bone marrow granulocytes via Toll-like receptor 2. *J Cell Sci.* 116(Pt 2):293-302.
2. Ozinsky A. *et al.*, 2000. The repertoire for pattern recognition of pathogens by the innate immune system is defined by cooperation between toll-like receptors. *Proc Natl Acad Sci USA.* 97(25):13766-71.
3. Lotz S. *et al.*, 2004. Highly purified lipoteichoic acid activates neutrophil granulocytes and delays their spontaneous apoptosis via CD14 and TLR2. *J Leukoc Biol.* 75(3):467-77.
4. Schindler U. & Baichwal VR., 1994. Three NF-κB binding sites in the human E-selectin gene required for maximal tumor necrosis factor alpha-induced expression. *Mol Cell Biol.* 14(9):5820-5831.

## RELATED PRODUCTS

Product	Catalog Code
PAb hTLR2 (polyclonal)	pab-htrl2
PAb hTLR1 (polyclonal)	pab-htrl1
PAb hTLR6 (polyclonal)	pab-htrl6
293/hTLR2	293-htrl2
293/hTLR2-CD14	293-htrl2cd14
pUNO-hTLR2 (human gene)	puno-htrl2
pNiFty-SEAP	pnifty-seap
HEK-Blue™ Detection	hb-det-1
TLR2 Agonist Kit	tlrl-kit2

### TECHNICAL SUPPORT

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