

# Anti-mTLR2-IgG

Purified monoclonal IgG antibody to mouse TLR2

Catalog # mabg-mtlr2

For research use only, not for diagnostic or therapeutic use

Version # 10C04-MM

## PRODUCT INFORMATION

### Content

100 µg purified monoclonal anti-mTLR2 IgG antibody (anti-mTLR2-IgG), provided lyophilized

**Clone:** C9A12

**Isotype:** Mouse IgG2a

**Formulation:** PBS pH 7.4

### 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 anti-mTLR2-IgG at -20°C. Lyophilized anti-mTLR2-IgG is stable for 1 year at -20°C.

- Resuspended anti-mTLR2-IgG is stable up to 3 months when stored at -20°C.

### Description

Anti-mTLR2-IgG (C9A12) is a monoclonal IgG isotype 2a antibody specific for mouse Toll-like receptor 2.

## 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

Anti-mTLR2-IgG can be used for neutralization of mTLR2, it blocks cellular activation induced by agonists that are recognized by TLR2, such as Pam3CSK4. Although this product has not been tested for use in other applications, this does not necessarily exclude its use in other techniques, such as flow cytometry.

### Application tested

Anti-mTLR2-IgG has been tested in neutralizing experiments. Neutralization experiments were performed in cells that naturally express or were transfected to express mouse TLR2, such as 293/mTLR2 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 10-1000 ng/ml anti-mTLR2-IgG (C9A12) and a control MAb TLR for 1 hour prior to the addition of 5 ng/ml Pam3CSK4. Neutralization of mTLR2 signaling by anti-mTLR2-IgG was determined after 24 hour incubation by assessing NF-κB-induced SEAP production using QUANTI-Blue™. QUANTI-Blue™ is a SEAP detection 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 620-655 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
Pam3CSK4	tlr1-pms
293/mTLR2	293-mtlr2
pUNO-mTLR2	puno-mtlr2
pNiFty-SEAP	pnifty-seap
QUANTI-Blue™	rep-qb-1

### TECHNICAL SUPPORT

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