PRODUCT INFORMATION

Content
100 µg purified monoclonal anti-mTLR5 IgG antibody (anti-mTLR5-IgG) provided lyophilized

Clone: Q23D11
Isotype: Rat IgG2a
Formulation: 0.2 µm filtered solution in PBS with 5% saccharose

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-mTLR5-IgG at -20°C. Lyophilized anti-mTLR5-IgG is stable for 1 year at -20°C.
- Resuspended anti-mTLR5-IgG is stable up to 3 months when stored at -20°C.

Description
Anti-mTLR5-IgG (Q23D11) is a monoclonal IgG isotype 2a antibody specific for mouse Toll-like receptor 5.

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 and TLR13 in mice, the homolog of TLR10 being a pseudogene. TLR5 recognizes flagellin from both Gram-positive and Gram-negative bacteria. Activation of the receptor stimulates the production of proinflammatory cytokines, such as TNF-α, through signaling via the adaptor protein MyD88 and the serine kinase IRAK1,2. TLR5 can generate a proinflammatory signal as a homodimer suggesting that it might be the only TLR participating in flagellin recognition.1 However, TLR5 may require the presence of a co-receptor or adaptor molecule for efficient ligand recognition and/or signaling.

APPLICATIONS
Anti-mTLR5-IgG can be used for neutralization of mTLR5, it blocks cellular activation induced by agonists that are recognized by TLR5, such as flagellin. 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-mTLR5-IgG has been tested in neutralizing experiments. Neutralization experiments were performed in cells that naturally express or were transfected to express mouse TLR5, such as 293/mTLR5 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-kB-inducible ELAM-1 (E-selectin) promoter.2 Transfected cells were incubated with 10-1000 ng/ml anti-mTLR5-IgG (Q23D11) and a control MAb TLR for 1 hour prior to the addition of 100 ng/ml flagellin. Neutralization of mTLR5 signaling by anti-mTLR5-IgG was determined after 24 hour incubation by assessing NF-kB-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

RELATED PRODUCTS

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