Anti-mIL-1β-IgG
Neutralizing monoclonal mouse antibody against mouse interleukin-1 beta

Catalog # mabg-mil1b, mabg-mil1b-5

For research use only, not for diagnostic or therapeutic use
Version # 15F02-MM

PRODUCT INFORMATION

Content: Anti-mIL-1β-IgG purified antibody is provided azide-free and lyophilized. It is available in two pack sizes:
- 100 µg: mabg-mil1b
- 5 x 100 µg: mabg-mil1b-5

Target: natural and recombinant mouse IL-1β (mIL-1β)

Specificity: no cross-reactivity with mouse IL-1α, human IL-1α, or human IL-1β

Clone: 7E3

Isotype: Mouse IgG1

Immunogen: Mouse IL-1β protein expressed in Swiss mice following DNA immunization

Formulation: 0.2 µm filtered solution in sodium phosphate buffer with glycine, saccharose and stabilizing agents

Antibody resuspension
Add 1 ml of sterile water per vial to obtain a concentration of 0.1 mg/ml.

Storage
- Product is shipped at room temperature. Store lyophilized antibody at -20 °C. Product is stable for at least 1 year.
- Reconstituted antibody is stable for 1 month when stored at 4 °C and for 1 year when aliquotted and stored at -20 °C. Avoid repeated freeze-thaw cycles.

Quality control
- This product has been validated for neutralization using cellular assays.
- The absence of bacterial contamination (e.g. lipoproteins and endotoxins) has been confirmed using HEK-Blue™ TLR2 and HEK-Blue™ TLR4 cells.

BACKGROUND

Interleukin-1 beta (IL-1β) is a secreted pro-inflammatory cytokine. It participates in the generation of systemic and local responses to infection and injury. IL-1β is produced by activated macrophages as a proprotein, which is cleaved by caspase 1, an enzyme that is activated within the inflammasome multiprotein complex. The resulting mature IL-1β is secreted and binds to the IL-1R1 receptor inducing MyD88-mediated intracellular signaling. This leads to the activation of the transcription factor NF-κB signaling, and the JNK and p38 mitogen-activated protein kinase pathways, which induce the expression of inflammatory cytokines and chemokines, such as IL-6 and IL-8.


DESCRIPTION

Anti-mIL-1β-IgG is a fully mouse monoclonal antibody specific against mIL-1β. This autoantibody was raised in mice by a proprietary method designed to induce the production of anti-cytokine antibodies directly in the animal. Anti-mIL-1β-IgG has been selected for its ability to efficiently neutralize the biological activity of mIL-1β. This antibody is produced in hybridomas and purified by affinity chromatography.

APPLICATIONS

Anti-mIL-1β-IgG is a neutralizing antibody, it blocks mIL-1β-induced cellular activation in vitro, as described below. Furthermore, as anti-mIL-1β-IgG is a mouse anti-mouse antibody, it could be used for neutralization assays in vivo.

Neutralization
The exact concentration of antibody required to neutralize mIL-1β activity is dependent on the cytokine concentration, cell type and growth conditions. InvivoGen has determined the neutralization dose for this antibody using recombinant mIL-1β and HEK-Blue™ IL-1β cells. These cells endogenously express the human IL-1 receptor and were stably transfected with an NF-κB and AP-1 inducible SEAP (secreted embryonic alkaline phosphatase) reporter gene. As a result, HEK-Blue™ IL-1β cells allow to detect human and mouse IL-1β by monitoring the activation of the NF-κB and AP-1 pathways. Anti-mIL-1β-IgG (10 ng - 1 µg/ml) and a negative control antibody (e.g. Mouse IgG1 Control which targets E. coli β-galactosidase) were incubated with recombinant mIL-1β (10 ng/ml) for 30 min prior to the addition of the HEK-Blue™ IL-1β Cells. Neutralization of IL-1β-induced signaling by anti-mIL-1β-IgG was determined after a 24-hour incubation by assessing SEAP production using QUANTI-Blue™, a SEAP detection reagent. QUANTI-Blue™ turns blue following cytokine stimulation but remains pink if neutralization occurs. SEAP levels can be assessed by the naked eye or spectrophotometrically by reading the optical density at 620-655 nm.

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