Anti-hIL-1β-IgG

Neutralizing monoclonal antibody against human interleukin 1 beta

Catalog code: mabg-hil1b-3

https://www.invivogen.com/anti-hil1b-igg

For research use only, not for diagnostic or therapeutic use

Version 22D08-MM

PRODUCT INFORMATION

Contents: 3 x 100 µg Anti-hIL-1β-IgG purified monoclonal antibody (mAb) is provided azide-free and lyophilized.
Target: Natural and recombinant human interleukin 1β (hIL-1β)
Specificity: No cross-reactivity with human IL-1α, murine IL-1α, or murine IL-1β.
Clone: 4H5
Isotype: Mouse IgG1
Light chain type: Kappa
Immunogen: Human IL-1β
Formulation: 0.2 µm filtered solution in a sodium phosphate buffer with glycine, saccharose, and stabilizing agents
Applications: Block/neutralize

Antibody resuspension (0.1 mg/ml)

Add 1 ml of sterile water per 100 µg vial.

Storage and stability

- Product is shipped at room temperature. Upon receipt, store lyophilized antibody at -20 °C.
- Reconstituted antibody is stable for 1 month at 4 °C and for 1 year 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[1]. It participates in the generation of systemic and local responses to infection and injury[2]. IL-1β is produced by activated macrophages as a pro-protein, which is cleaved by caspase 1, an enzyme that is activated within the inflammasome multiprotein complex[3]. The resulting mature IL-1β is secreted and binds to the IL-1RI receptor triggering the formation of the IL-1R1/IL-1R3/MyD88 complex and inducing MyD88-mediated intracellular signaling. This leads to the activation of the transcription factor NK-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[4].

1. Dinarello C., 2018. Overview of the IL-1 family in innate inflammation and acquired immunity. Immunol Rev. 281(1): 8-27. **2. Sims J. & Smith D., 2010.** The IL-1 family: regulators of immunity. Nat Rev Immunol. 10(2):89-102. **3. O'Neill L., 2008.** The interleukin-1 receptor/Toll-like receptor superfamily: 10 years of progress. Immunol. Rev. 226:10–18. **4. Weber A. *et al.*, 2010.** Interleukin-1 (IL-1) pathway. Sci Signal. 3(105):cm1.

DESCRIPTION

Anti-hIL-1β-IgG is a monoclonal antibody against human interleukin 1β (hIL-1β). This antibody has been selected for its ability to efficiently neutralize the biological activity of hIL-1β. Anti-hIL-1β-IgG is produced in hybridomas and purified by affinity chromatography.

APPLICATIONS

Anti-hIL-1β-IgG is a neutralizing antibody, it blocks hIL-1β-induced cellular activation. Other applications have not been tested.

Neutralization

The exact concentration of antibody required to neutralize hIL-1β activity is dependent on the cytokine concentration, cell type, and growth conditions. InvivoGen has determined the neutralization dose for this antibody using recombinant hIL-1β and HEK-Blue™ IL-1β cells. These cells detect bioactive IL-1β by monitoring the activation of the NF-κB and AP-1 pathways. HEK-Blue™ IL-1β 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.
Anti-hIL-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 hIL-1β at 1 ng/ml for 30 min prior to the addition of the HEK-Blue™ IL-1β cells. Neutralization of IL-1β-induced signaling by anti-hIL-1β-IgG was determined after a 24-hour incubation by assessing SEAP production using QUANTI-Blue™ Solution, a SEAP detection reagent. QUANTI-Blue™ Solution 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.

RELATED PRODUCTS

Product	Description	Cat. Code
HEK-Blue™ IL-1β cells	IL-1β reporter cells	hkb-il1bv2
Mouse IgG1 Control	Isotype control antibody	mabg1-ctrlm
QUANTI-Blue™ Solution	SEAP detection reagent	rep-qbs
Recombinant human IL-1β	Recombinant cytokine	rcyec-hil1b

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