

Anti-hIL-6-IgG

Neutralizing monoclonal antibody against human interleukin 6

Catalog code: mabg-hil6-3

<https://www.invivogen.com/anti-hil6-igg>

For research use only

Version 22B18-MM

PRODUCT INFORMATION

Contents

• 3 x 100 µg anti-hIL-6-IgG purified monoclonal antibody (mAb), provided azide-free and lyophilized

Target: Natural and recombinant human interleukin 6 (hIL-6)

Specificity: No cross-reactivity with murine IL-6

Clone: 3H3

Isotype: Mouse IgG1

Light chain type: Kappa

Immunogen: Human IL-6 protein

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.
- The absence of bacterial contamination (e.g. lipoproteins and endotoxins) has been confirmed using HEK-Blue™ TLR2 and HEK-Blue™ TLR4 cells.

BACKGROUND

Interleukin 6 (IL-6) is a multifunctional cytokine that plays an important role in the regulation of the immune response, hematopoiesis, and inflammation^{1,2}. IL-6 is secreted by many cell types, including endothelial cells, fibroblasts, osteoblasts and T cells. Furthermore, in response to specific microbial molecules, known as pattern recognition molecular patterns (PAMPs), macrophages can secrete IL-6 as a pro-inflammatory cytokine. IL-6 exerts its action by binding to the IL-6 receptor (IL-6R). The complex of IL-6 and IL-6R associates with the signal-transducing membrane protein gp130. This leads to the activation of a signaling cascade through the tyrosine kinases of the Janus family (JAK1, JAK2, and Tyk2) and the signal transducer and transcription activator 3 (STAT3) which binds elements of IL-6-inducible genes³.

1. Kang S. *et al.*, 2015. Therapeutic uses of antiinterleukin-6 receptor antibody. *Int. Immunol.* 27:21-9. 2. Akira S. *et al.*, 1990. Biology of multifunctional cytokines: IL 6 and related molecules (IL 1 and TNF). *FASEB J.* 4(11):2860-7. 3. Murray P., 2007. The JAK-STAT Signaling Pathway: Input and Output Integration *J. Immunol.* 178:2623-9.

TECHNICAL SUPPORT

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DESCRIPTION

Anti-hIL-6-IgG is a monoclonal antibody specific for human interleukin 6 (hIL-6). This antibody has been selected for its ability to efficiently neutralize the biological activity of hIL-6. Anti-hIL-6-IgG is produced in hybridomas and purified by affinity chromatography.

APPLICATIONS

Neutralization

Neutralization of IL-6-induced signaling by anti-hIL-6-IgG was determined after a 24 hour incubation by assessing the reporter gene expression with the appropriate detection reagent.

The exact concentration of antibody required to neutralize hIL-6 activity is dependent on the cytokine concentration, cell type, and growth conditions. InvivoGen has determined the neutralization dose for this antibody using recombinant hIL-6 and HEK-Blue™ IL-6 cells. These cells are HEK293 cells stably expressing the human IL-6R gene, and STAT3-inducible SEAP (secreted embryonic alkaline phosphatase) reporter gene.

Anti-hIL-6-IgG (5 ng-1 µg/ml) and a negative control antibody (e.g. Mouse Control IgG1 which targets *E. coli* β-galactosidase) were incubated with recombinant hIL-6 at 1 ng/ml for 30 min prior to the addition of the HEK-Blue™ IL-6 cells. Neutralization of IL-6-induced signaling by anti-hIL-6-IgG was determined after 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-6 Cells	IL-6 reporter cells	hkb-il6
Mouse Control IgG1	Isotype control antibody	mabg1-ctrlm
QUANTI-Blue™ Solution	SEAP detection reagent	rep-qbs
Recombinant human IL-6	Recombinant cytokine	rcyec-hil6