

Anti-hIL-1 α -IgG

Neutralizing monoclonal antibody against human interleukin-1alpha

Catalog code: mabg-hil1a-3

<https://www.invivogen.com/anti-hil1a-igg>

For research use only, not for diagnostic or therapeutic use

Version 22D12-MM

PRODUCT INFORMATION

Contents: 3 x 100 μ g Anti-hIL-1 α -IgG purified monoclonal antibody (mAb) is provided azide-free and lyophilized.

Target: Natural and recombinant human interleukin-1 alpha (IL-1 α)

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

Clone: 7D4

Isotype: Mouse IgG1

Light chain type: Kappa

Immunogen: Human IL-1 α

Purification: Affinity chromatography

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

Antibody resuspension (0.1 mg/ml)

Add 1 ml of sterile water per 100 μ g 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 when stored at 4°C and for 1 year at -20°C. Avoid repeated freeze-thaw cycles.

Quality control

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

BACKGROUND

Interleukin-1 alpha (IL-1 α) is a secreted pro-inflammatory cytokine produced primarily by activated macrophages¹. IL-1 α is synthesized as a pro-cytokine, which is enzymatically cleaved into the mature secreted form by calpain, a calcium-dependent protease². In contrast to other cytokines, both the precursor and mature forms of IL-1 α are biologically active. IL-1 α plays a central role in the regulation of immune responses and inflammation. IL-1 α binds to the interleukin-1 receptor, leading to the activation of NF- κ B 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-8³.

1. Dinarello C., 2018. Overview of the IL-1 family in innate inflammation and acquired immunity. *Immunol Rev.* 281(1): 8-27. 2. Dinarello C., 2009. Immunological and inflammatory functions of the interleukin-1 family. *Annu. Rev. Immunol.* 27:519-550. 3. Weber A. et al., 2010. Interleukin-1 (IL-1) pathway. *Sci Signal.* 3(105):cm1.

DESCRIPTION

Anti-hIL-1 α -IgG is a monoclonal mouse IgG1 antibody against human interleukin-1alpha (hIL-1 α). Anti-hIL-1 α -IgG has been selected for its ability to efficiently neutralize the biological activity of hIL-1 α . Anti-hIL-1 α -IgG is produced in hybridomas and purified by affinity chromatography.

APPLICATIONS

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

Neutralization

The exact concentration of antibody required to neutralize hIL-1 α activity is dependent on the cytokine concentration, cell type and growth conditions.

InvivoGen has determined the neutralization dose for this antibody using recombinant hIL-1 α and HEK-Blue™ IL-1 β cells, which respond to both IL-1 β and IL-1 α . These cells are HEK293 cells stably expressing an NF- κ B-inducible SEAP (secreted embryonic alkaline phosphatase) reporter gene.

Anti-hIL-1 α -IgG (1 ng- 1 μ g/ml) and a control antibody (e.g. [Mouse IgG1 Control](#) which targets *E. coli* β -galactosidase) were incubated with recombinant hIL-1 α (300 pg-1 ng/ml) for 30 min prior to the addition of the HEK-Blue™ IL-1 β cells. Neutralization of IL-1 α -induced signaling by anti-hIL-1 α -IgG was determined after 24 hour incubation by assessing SEAP production using [QUANTI-Blue™ Solution](#). In this assay, this SEAP detection medium turns blue following cytokine stimulation but remains pink if neutralization occurs. SEAP levels can be assessed spectrophotometrically by reading the OD at 620-655 nm.

RELATED PRODUCTS

Product	Description	Cat. Code
HEK-Blue IL-1 β cells	IL-1 β reporter cells	hkb-il1bv2
Mouse IgG1 Control	Anti- β -Gal-mIgG1	mabg1-ctrlm
QUANTI-Blue™ Solution	SEAP detection medium	rep-qbs

TECHNICAL SUPPORT

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