

Anti-mIL-1 α -IgG

Neutralizing monoclonal antibody against murine interleukin 1 alpha

Catalog code: mabg-mil1a, mabg-mil1a-5

<https://www.invivogen.com/anti-mil1a-igg>

For research use only, not for diagnostic or therapeutic use

Version 22D15-MM

PRODUCT INFORMATION

Contents: Anti-mIL-1 α -IgG purified monoclonal antibody (mAb) is provided azide-free and lyophilized. It is available in two pack sizes:

- 100 μ g: mabg-mil1a
- 5 x 100 μ g: mabg-mil1a-5

Target: Natural and recombinant murine interleukin 1 α (mIL-1 α)

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

Clone: 6H7

Isotype: Mouse IgG1

Light chain type: Kappa

Immunogen: Murine IL-1 α

Formulation: 0.2 μ m 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 μ g vial.

Storage and stability

- Product is shipped at room temperature. Upon receipt, store lyophilized antibody at -20 $^{\circ}$ C.
- Reconstituted antibody is stable for 1 month at 4 $^{\circ}$ C and for 1 year at -20 $^{\circ}$ 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 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-mIL-1 α -IgG is a fully mouse monoclonal antibody specific against mIL-1 α . 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-1 α -IgG has been selected for its ability to efficiently neutralize the biological activity of mIL-1 α . This antibody is produced in hybridomas and purified by affinity chromatography.

APPLICATIONS

Anti-mIL-1 α -IgG is a neutralizing antibody, it blocks mIL-1 α -induced cellular activation *in vitro*, as described below. Furthermore, as anti-mIL-1 α -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-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 mIL-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-mIL-1 α -IgG (10 ng-1 μ g/ml) and a negative control antibody (e.g. Mouse IgG1 Control which targets *E. coli* β -galactosidase) were incubated with recombinant mIL-1 α at 10-30 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-mIL-1 α -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-1 β cells	IL-1 β reporter cells	hkb-il1bv2
Mouse IgG1 Control	Isotype control antibody	mabg1-ctrlIm
QUANTI-Blue™ Solution	SEAP detection reagent	rep-qbs

TECHNICAL SUPPORT

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