Anti-hIFN-α-IgG

Neutralizing IgG monoclonal antibody to human interferon alpha 2

Catalog code: mabg-hifna-3

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

For research use only, not for diagnostic or therapeutic use

Version 22E06-MM

PRODUCT INFORMATION

Contents: 3 x 100 µg purified anti-hIFN-α-IgG antibody, provided azide-free and lyophilized
Target: Natural and recombinant human interferon-alpha 2 (hIFN-α2)
Specificity: Reacts with hIFN-α1, hIFN-α2, hIFN-α5, hIFN-α8, hIFN-α14, hIFN-α16, hIFN-α17 and hIFN-α21. Very weakly reacts with hIFN-α4 and hIFN-α10. Does not react with hIFN-α6 or hIFN-α7.
Clonality: Monoclonal antibody
Clone: H7WM116
Isotype: Human IgG1
Source: CHO cells
Formulation: 0.2 µm filtered solution in a sodium phosphate buffer with saccharose, glycine and stabilizing agents
Purity: Purified by affinity chromatography with protein G

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 when stored at 4 °C and for 1 year when stored 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. lipoproteins and endotoxins) has been confirmed using HEK-Blue™ TLR2 and HEK-Blue™ TLR4 cells.

BACKGROUND

Interferon-alpha (IFN-α) is a type I interferon that has both anti-viral and immunomodulatory activities[1]. IFN-α is produced primarily by plasmacytoid dendritic cells[2]. Thirteen different human IFN-α subtypes have been described. Although the reason for the multiple IFN-α subtypes is not fully understood, evidence suggests that they have distinct functions[3]. IFN-α binds to a ubiquitously expressed heterodimeric receptor composed of two chains (IFNAR1 and IFNAR2), resulting in the recruitment of JAK1 and TyK2. These kinases phosphorylate STAT1 and STAT2, leading to the formation of the IFN-stimulated gene factor 3 (ISGF3) complex, which binds to IFN-stimulated response elements (ISRE), thereby directly activating the transcription of IFN-stimulated genes (ISGs)[4].

1. Trinchieri G., 2010. Type I interferon: friend or foe? JEM 207(10):2053-2063. **2. Ivashkiv LB. & Donlin LT., 2014.** Regulation of type I interferon responses. Nat Rev Immunol. 14(1):36-49. **3. Gibbert K. *et al.*, 2013.** IFN-α subtypes: distinct biological activities in anti-viral therapy. Br J Pharmacol. 168(5):1048-58. **4. Theofilopoulos A. *et al.*, 2005.** Type I interferons (alpha/beta) in immunity and autoimmunity. Annu Rev Immunol. 23:307-36.

DESCRIPTION

Anti-hIFN-α-IgG is a monoclonal antibody for human interferon α 2 (hIFN-α2). It has been selected for its ability to efficiently neutralize the biological activity of hIFN-α2. This antibody reacts with hIFN-α1, hIFN-α2, hIFN-α5, hIFN-α8, hIFN-α14, hIFN-α16, hIFN-α17 and hIFN-α21. It reacts very weakly with hIFN-α4 and IFN-α10. It does not react with hIFN-α6 or hIFN-α7.
Anti-hIFN-α-IgG was generated by recombinant DNA technology. It has been produced in CHO cells and purified by affinity chromatography.

APPLICATIONS

Anti-hIFN-α-IgG is a neutralizing antibody, it blocks hIFN-α-induced cellular activation.

Neutralization

The exact concentration of antibody required to neutralize human IFN-α activity is dependent on the cytokine concentration, cell type and growth conditions. InvivoGen has determined the neutralization dose for this antibody using recombinant human IFN-α2 and HEK-Blue™ IFN-α/β cells. These cells are HEK293 cells stably expressing the human STAT2 and IRF9 genes, and an IFN-α/β-inducible SEAP (secreted embryonic alkaline phosphatase) reporter gene.

Procedure for neutralization using HEK-Blue™ IFN-α/β cells

1. Prepare a cell suspension at ~300,000 cells/ml.
2. Add 20 µl of Anti-hIFN-α-IgG or control antibody (10 ng-1 µg/ml final concentration) per well of a 96-well plate.
Note: We recommend using Anti-β-Gal-hIgG1 (which targets E. coli β-galactosidase) as a negative control.
3. Add 20 µl of recombinant human IFN-α2 (500 IU/ml final concentration).
4. Incubate 30 minutes at 37 °C.
5. Add 160 µl of cell suspension (~50,000 cells) per well.
6. Incubate overnight at 37 °C.
7. Add 20 µl of supernatant to 180 µl QUANTI-Blue™ Solution in a 96-well plate.
8. Incubate 1-3 hours at 37 °C.
9. Assess SEAP levels with the naked eye or spectrophotometrically by reading the optical density (OD) at 655 nm.

RELATED PRODUCTS

Product	Description	Cat. Code
Anti-β-Gal-hIgG1	Isotype control	bgal-mab1
HEK-Blue™ IFN-α/β Cells	IFN-α/β reporter cells	hkb-ifnab
QUANTI-Blue™ Solution	SEAP detection medium	rep-qb-1
Recombinant human IFN-α2b	Recombinant cytokine	rcyc-hifna2b

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