# Human IL-29/IFN-λ1 Antibody

Monoclonal Mouse $IgG_{2A}$ Clone # 247801

Catalog Number: MAB15981

## DESCRIPTION

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|---|---|
| **Species Reactivity** | Human |
| **Specificity** | Detects human IL-29/IFN-λ1 in ELISAs. In sandwich immunoassays, 100% cross-reactivity with recombinant human (rh) IL-28B/IFN-λ3 and 20% with rhIL-28A is observed. No cross-reactivity or interference was observed with rhIFN-αA, rhIFN-αB2, rhIFN-αG, rhIFN-αI, or rhIFN-β1A. |
| **Source** | Monoclonal Mouse $IgG_{2A}$ Clone # 247801 |
| **Purification** | Protein A or G purified from hybridoma culture supernatant |
| **Immunogen** | Mouse myeloma cell line NS0-derived recombinant human IL-29/IFN-λ1<br>Gly20-Thr200<br>Accession # Q8IU54 |
| **Endotoxin Level** | <0.10 EU per 1 µg of the antibody by the LAL method. |
| **Formulation** | Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.<br>*Small pack size (-SP) is supplied as a 0.2 µm filtered solution in PBS. |

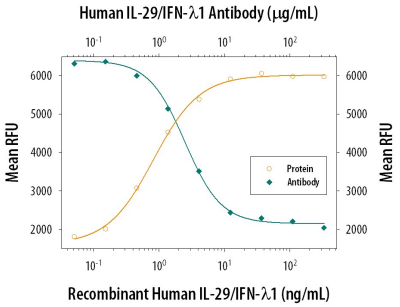
## APPLICATIONS

**Please Note:** *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

| ***IL-29/IFN-λ1 Sandwich Immunoassay*** | | **Reagent** |
|---|---|---|
| **ELISA Capture** | 2-8 µg/mL | Human IL−29/IFN−λ1 Antibody (Catalog # MAB15981) |
| **ELISA Detection** | 0.1-0.4 µg/mL | Human IL−29/IFN−λ1 Biotinylated Antibody (Catalog # BAF1598) |
| **Standard** | | Recombinant Human IL−29/IFN−λ1 (Catalog # 1598-IL) |
| **Neutralization** | Measured by its ability to neutralize IL−29/IFN−λ1 inhibition of EMCV-induced cytopathy in the HepG2 human hepatocellular carcinoma cell line. Sheppard, P. *et al.* (2003) Nat. Immunol. **4**:63. The Neutralization Dose ($ND_{50}$) is typically 1-4 µg/mL in the presence of 40 ng/mL Recombinant Human IL−29/IFN−λ1. | |

## DATA

**Neutralization**




**IL-29/IFN-λ1 Inhibition of EMCV-induced Cytopathy and Neutralization by Human IL-29/IFN-λ1 Antibody.** Recombinant Human IL-29/IFN-λ1 (Catalog # 1598-IL) reduces the Encephalomyocarditis Virus (EMCV)-induced cytopathy in the HepG2 human hepatocellular carcinoma cell line in a dose-dependent manner (orange line). Inhibition of EMCV activity elicited by Recombinant Human IL-29/IFN-λ1 (40 ng/mL) is neutralized (green line) by increasing concentrations of Mouse Anri-Human IL-29/IFN-λ1 Monoclonal Antibody (Catalog # MAB15981). The $ND_{50}$ is typically 1-4 µg/mL.

## PREPARATION AND STORAGE

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| **Reconstitution** | Reconstitute at 0.5 mg/mL in sterile PBS. |
| **Shipping** | The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.<br>*Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C |
| **Stability & Storage** | **Use a manual defrost freezer and avoid repeated freeze-thaw cycles.**<br>● 12 months from date of receipt, -20 to -70 °C as supplied.<br>● 1 month, 2 to 8 °C under sterile conditions after reconstitution.<br>● 6 months, -20 to -70 °C under sterile conditions after reconstitution. |



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## BACKGROUND

IL-28A, IL-28B, and IL-29, also named interferon-λ2 (IFN-λ2), IFN-λ3, and IFN-λ1, respectively, are class II cytokine receptor ligands that are distantly related to members of the IL-10 family (11-13% aa sequence identity) and the type I IFN family (15-19% aa sequence identity) (1-3). The genes encoding these three cytokines are localized to chromosome 19 and each is composed of multiple exons. The exon organization of these genes is also found in the IL-10 family genes but is distinct from the type I IFNs, which are encoded within a single exon, The expression of IL-28A, B, and IL-29 is induced by virus infection or double-stranded RNA. All three cytokines exert bioactivities that overlap those of type I IFNs, including antiviral activity and up-regulation of MHC class I antigen expression. The three proteins signal through the same heterodimeric receptor complex that is composed of the IL-10 receptor β (IL-10 Rβ) and a novel IL-28 receptor α (IL-28 Rα, also known as IFN-λ R1). Ligand binding to the receptor complex induces Jak kinase activation and STAT1 and STAT2 tyrosine phosphorylation. The phosphorylated STAT1 and STAT2 complex with IFN-regulatory factor 9 (IRF-9) to form the IFN-stimulated regulatory factor 3 (ISGF-3) transcription factor complex that is translocated to the nucleus. ISGF-3 binds to the IFN-stimulated response element (ISRE) present in the regulatory region of the target genes. Human IL-29 cDNA encodes a 200 amino acid (aa) residue precursor protein with a putative 19 aa signal peptide and a 181 aa mature protein, which is a monomer in solution. It shares 67% and 69% aa sequence identity with human IL-28A and IL-28B, respectively.

**References:**

1. Vilcek, J. (2003) Nature Immunol. **4**:8.
2. Sheppard, P. *et al*. (2003) Nature Immunol. **4**:63.
3. Kotenko, S.V. *et al*. (2003) Nature Immunol. **4**:69.



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