Human IL-28A/IFN-λ2 Antibody

Antigen Affinity-purified Polyclonal Goat IgG
Catalog Number: AF1587

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human IL-28A/IFN-λ2 in direct ELISAs and Western blots. In direct ELISAs and Western blots, approximately 60% cross-reactivity with human IL-28B/IFN-λ3 is observed. In direct ELISAs, approximately 30% cross-reactivity with recombinant human IL-29 and less than 5% cross-reactivity with recombinant mouse IL-28 is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	Mouse myeloma cell line NS0-derived recombinant human IL-28A/IFN-λ2 Val26-Val200 Accession # Q8IZJ0
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. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 µm filtered solution in PBS.

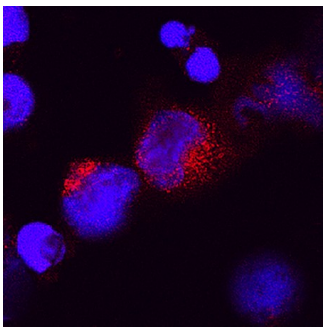
APPLICATIONS

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.*

	Recommended Concentration	Sample
Western Blot	0.1 µg/mL	Recombinant Human IL-28A/IFN-λ2 (Catalog # 1587-IL)
Immunocytochemistry	5-15 µg/mL	See Below
Neutralization	Measured by its ability to neutralize IL-28A/IFN-λ2 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 0.3-1.5 µg/mL in the presence of 0.1 µg/mL Recombinant Human IL-28A/IFN-λ2.	
ELISA	This antibody functions as an ELISA detection antibody when paired with Mouse Anti-Human IL-28A/IFN-λ2 Monoclonal Antibody (Catalog # MAB15872). *This product is intended for assay development on various assay platforms requiring antibody pairs. We recommend the Human IL-28A/IFN-lambda 2 DuoSet ELISA Kit (Catalog # DY1587) for convenient development of a sandwich ELISA.*	

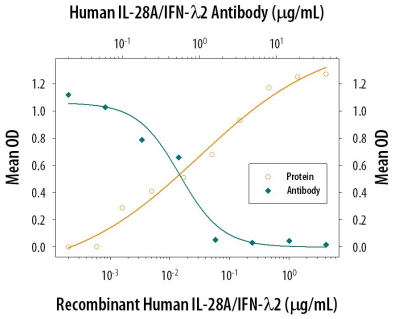
DATA

Immunocytochemistry



IL-28A/IFN-λ2 in Human PBMCs. IL-28A/IFN-λ2 was detected in immersion fixed human peripheral blood mononuclear cells (PBMCs) treated with calcium ionomycin and PMA using Goat Anti-Human IL-28A/IFN-λ2 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF1587) at 15 µg/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Goat IgG Secondary Antibody (red; Catalog # NL001) and counterstained with DAPI (blue). Specific staining was localized to cytoplasm. View our protocol for Fluorescent ICC Staining of Cells on Coverslips.

Neutralization



IL-28A/IFN-λ2 Inhibition of EMCV-induced Cytopathy and Neutralization by Human IL-28A/IFN-λ2 Antibody. Recombinant Human IL-28A/IFN-λ2 (Catalog # 1587-IL) reduces the Encephalomyocarditis Virus (EMCV)-induced cytopathy in the HepG2 human hepatocellular carcinoma cell line in a dose-dependent manner (orange line), as measured by crystal violet staining. Inhibition of EMCV activity elicited by Recombinant Human IL-28A/IFN-λ2 (0.1 µg/mL) is neutralized (green line) by increasing concentrations of Goat Anti-Human IL-28A/IFN-λ2 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF1587). The ND_{50} is typically 0.3-1.5 µg/mL.

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Global bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL +1 612 379 2956
USA TEL 800 343 7475 Canada TEL 855 668 8722 China TEL +86 (21) 52380373
Europe | Middle East | Africa TEL +44 (0)1235 529449

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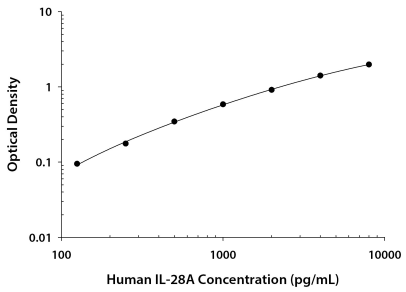
ELISA



Human IL-28A/IFN-λ2 ELISA Standard Curve. Recombinant Human IL-28A/IFN-λ2 protein was serially diluted 2-fold and captured by Mouse Anti-Human IL-28A/IFN-λ2 Monoclonal Antibody (Catalog # MAB15872) coated on a Clear Polystyrene Microplate (Catalog # DY990). Goat Anti-Human IL-28A/IFN-λ2 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF1587) was biotinylated and incubated with the protein captured on the plate. Detection of the standard curve was achieved by incubating Streptavidin-HRP (Catalog # DY998) followed by Substrate Solution (Catalog # DY999) and stopping the enzymatic reaction with Stop Solution (Catalog # DY994).

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.2 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *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.** • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 6 months, -20 to -70 °C under sterile conditions after reconstitution.

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 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 anti-viral 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 regions of the target genes. Human IL-28A cDNA encodes a 200 amino acid (aa) residue precursor protein with a putative 25 aa signal peptide. It shares 94% and 67% aa sequence identity with human IL-28B and human IL-29, 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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