

HUMAN INTERLEUKIN-28A/INTERFERON-LAMBDA 2, CARRIER FREE

Product Number: 11821-1

Lot Number:

Size: 25 µg

Description: Human Interleukin-28A/Interferon-Lambda 2 Carrier Free

Source: DNA sequence encoding human IL-28A [Met 1 - Val 200] [Kotenko, S.V. *et al.*, 2003, *Nat. Immunol.* 4(1):69 - 77] with a carboxyl-terminal polyhistidine tag was expressed in a mouse myeloma cell line, NS0.

Form: Lyophilized

Buffer: Phosphate-buffered saline (PBS)

Reconstitution: It is recommended that sterile PBS be added to the vial to prepare a stock solution of no less than 50µg/ml. The carrier-free protein should be used immediately upon reconstitution to avoid losses in activity due to non-specific binding to the inside surface of the vial. For long term storage as a dilute solution, a carrier protein (e.g. 0.1% HSA or BSA) should be added to the vial.

Endotoxin: < 1 EU/µg

Molecular Weight: Based on N-terminal sequencing, the mature recombinant IL-28A starts at Val 26 and has a calculated molecular mass of 20.8 kDa. As a result of glycosylation, the recombinant monomer migrates as an approximately 24 kDa protein in SDS-PAGE under reducing conditions.

Purity: > 97%

Synonyms: Hu IL-28A; Hu IFN-λ2

Accession #: NP_742150

Assays Used to Measure Bioactivity: Human HepG2 cells infected with encephalomyocarditis virus [Sheppard, P. *et al.*, 2003, *Nature Immunol.* 4:63]. The ED₅₀ for this effect is typically 10 - 50 ng/mL.

Shipping Conditions: Wet Ice

Physical State of Product During Shipping: Lyophilized

Special Conditions/Comments: After receipt, this product should be kept at -70 °C or below for retention of full activity. Upon reconstitution, this cytokine in the presence of a carrier protein can be stored under sterile conditions at 2 °C to 8 °C for one month or at -20 °C to -70 °C in a manual defrost freezer for three months without detectable loss of activity. Avoid repeated freeze-thaw cycles. For more information on protein handling, visit the PBL website at www.interferonsource.com.

Product Information: IL-28A, IL-28B, and IL-29, also named interferon- λ 2 (IFN- λ 2), IFN- λ 3, and IFN- λ 1, respectively, are newly identified 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 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 R β) and a novel IL-28 receptor α (IL-28 R α , 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 - 9.
2. Sheppard, P. *et al.*, 2003, *Nature Immunol.* 4:63 - 68.
3. Kotenko, S.V. *et al.*, 2003, *Nature Immunol.* 4:69 - 77.

For further product information visit www.interferonsource.com

Authorization

Released by: _____

Date:

This Product is for RESEARCH USE ONLY and is not for sale or use in any commercial kit or for use in the preparation of any commercial antibody. NOT FOR DIAGNOSTIC OR THERAPEUTIC USE, OR USE IN HUMANS.