

HUMAN INTERLEUKIN-29/INTERFERON-LAMBDA 1

Product Number: **11825-1**

Lot Number:

Size: **25 µg**

Description: Human Interleukin-29/Interferon-Lambda 1

Source: DNA sequence encoding the signal peptide from human CD33 was fused to the carboxyl terminally polyhistidine-tagged mature human IL-29 (Gly 20 - Thr 200) (Sheppard, P. et al., 2003, *Nat. Immunol.* 4(1):63 - 68). The chimeric protein was expressed in a mouse myeloma cell line, NS0.

Form: Lyophilized

Buffer: Phosphate-buffered saline (PBS) containing 50µg of bovine serum albumin (BSA) per 1 µg of cytokine

Reconstitution: It is recommended that sterile PBS containing at least 0.1% human serum albumin or bovine serum albumin be added to the vial to prepare a stock solution of no less than 10µg/ml.

Endotoxin: < 1 EU/µg

Molecular Weight: Based on N-terminal sequencing, the mature recombinant IL-29 starts at Gly 20 and has a calculated molecular mass of 21.4 kDa. As a result of glycosylation, the recombinant monomer migrates as an approximately 26-35kDa protein in SDS-PAGE under reducing conditions.

Purity: > 95%

Synonyms: Hu IL-29; Hu IFN-λ1

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 1- 5 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 can be stored under sterile conditions at -20 °C to -70 °C in a manual defrost freezer for three months without detection 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 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 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 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 - 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.