

## Recombinant Human IL-29/IFN-lambda 1

### Information

Accession #	Q8IU54
Alternate Names	Human IL29; IFNL1; IFN-lambda 1; IFN-lambda-1; IL29; IL-29; interferon lambda-1
Source	Human embryonic kidney cell, HEK293-derived human IL-29/IFN-lambda 1 protein
Protein sequence	Gly20-Thr200
M.Wt	20.0 kDa
Appearance	Solution protein.
Stability & Storage	Avoid repeated freeze-thaw cycles. It is recommended that the protein be aliquoted for optimal storage. 12 months from date of receipt, -20 to -70 °C as supplied.
Concentration	0.2 mg/mL
Formulation	Dissolved in sterile PBS buffer.
Reconstitution	We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. This solution can be diluted into other aqueous buffers.
Biological Activity	Measured in an anti-viral assay using HepG2 human hepatocellular carcinoma cells infected with encephalomyocarditis (EMC) virus. The EC50 for this effect is 1-5 ng/mL.
Shipping Condition	Shipping with dry ice.
Handling	Centrifuge the vial prior to opening.
Usage	For Research Use Only! Not to be used in humans.

### Quality Control

Purity	> 95%, determined by SDS-PAGE.
Endotoxin	<0.010 EU per 1 ug of the protein by the LAL method.

### Description

Interleukin-29(IL-29/IFN-lambda 1), IL-28A and IL-28B, also named interferon-lambda 2 (IFN-lambda 2), IFN-lambda 3, and IFN-lambda 1, 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) <sup>[1-3]</sup>. 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 beta (IL-10 R beta) and a novel IL-28 receptor alpha (IL-28 R alpha, also known as IFN-lambda 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.

## Reference

- [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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**[www.apexbt.com](http://www.apexbt.com)**

7505 Fannin street, Suite 410, Houston, TX 77054.

Tel: +1-832-696-8203 | Fax: +1-832-641-3177 | Email: [info@apexbt.com](mailto:info@apexbt.com)