

DESCRIPTION

Source Mouse myeloma cell line, NS0-derived mouse IL-28A/IFN-lambda 2 protein
Asp20-Val193, with a C-terminal 6-His tag
Accession # NP_001019844

N-terminal Sequence Analysis Asp20

Predicted Molecular Mass 20.5 kDa

SPECIFICATIONS

SDS-PAGE 25 kDa and 30 kDa, reducing conditions

Activity Measured in an anti-viral assay using HepG2 human hepatocellular carcinoma cells infected with encephalomyocarditis (EMC) virus. Sheppard, P. *et al.* (2003) *Nat. Immunol.* **4**:63. The ED₅₀ for this effect is 0.0800-0.800 ng/mL.

Endotoxin Level <0.10 EU per 1 µg of the protein by the LAL method.

Purity >95%, by SDS-PAGE under reducing conditions and visualized by silver stain.

Formulation Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution Reconstitute at 100 µg/mL in sterile PBS.

Shipping The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.

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.
- 3 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

IL-28A (also named interferon-λ2, IFN-λ2), IL-28B (IFN-λ3) and IL-29 (IFN-λ1) are type III interferons that are class II cytokine receptor ligands (1 - 4). They are distantly related to members of the IL-10 family and type I IFN family (1 - 4). Mouse IL-28A cDNA encodes a 193 amino acid (aa) protein with a 19 aa signal peptide and a 174 aa mature protein that lacks N-glycosylation sites. Mature mouse IL-28A shares 81% and 66% aa sequence identity with rat and human IL-28A, respectively, and functions across species (5). Mouse IL-28A and IL-28B share 97% aa identity; the mouse lacks a functional IL-29 gene (4). Type III interferons are widely expressed, but are mainly produced by antigen presenting cells in response to viruses and double-stranded RNA that interact with Toll-like receptors or RIG-1 family helicases (2 - 6). They signal through a widely expressed receptor that is a heterodimer of the IL-10 receptor β (IL-10 Rβ) and IL-28 receptor α (IL-28 Rα; also called IFN-λ R1) (2, 3, 7, 9). Interaction of either type I or type III IFNs with their receptors activates similar pathways, including JAK tyrosine kinase activation, STAT phosphorylation and formation of the IFN-stimulated regulatory factor 3 (ISGF-3) transcription factor complex (1 - 3). Both type I and III IFNs induce antiviral activity and upregulate MHC class I antigen expression (2 - 6). Cell lines responsive to type III IFNs are also responsive to type I IFNs, but in general, higher concentrations of type III IFNs are needed for similar *in vitro* responses (8). *In vivo*, however, type III IFNs enhance levels of IFN-γ in serum, suggesting that the robust antiviral activity of type III IFNs may stem in part from activation of the immune system (5, 7). Anti-proliferative and antitumor activity *in vivo* has also been shown for type III IFNs (9 - 11).

References:

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