Recombinant Human IL-28B/IFN-λ3

Catalog Number: 5259-IL

DESCRIPTION

Source	Chinese Hamster Ovary cell line, CHO-derived Arg30-Val200, with the variant of Lys74Arg and a C-terminal 6-His tag Accession # AAN28264
N-terminal Sequence Analysis	Arg30
Predicted Molecular Mass	20.1 kDa

SPECIFICATIONS

SDS-PAGE	22 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 ED_{50} for this effect is typically 1-5 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, NaCl and EDTA with BSA as a carrier protein. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 100 µg/mL in sterile PBS containing at least 0.1% human or bovine serum albumin.
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-28B (also named interferon-λ3, IFN-λ3), IL-28A (IFN-λ2) 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). Human IL-28B cDNA encodes a 200 amino acid (aa) protein with a 25 aa signal peptide and a 175 aa mature protein that lacks N-glycosylation sites. Mature human IL-28B shares 64% and 75% aa sequence identity with mouse and canine IL-28B, respectively, and is active across species (5). Human IL-28B shares 94% and 69% aa identity with human IL-28A and IL−29, respectively (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 anti−viral activity and up−regulate 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 anti-viral 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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