# Recombinant Human IFN-alpha 21/IFNA21

Catalog Number: 11159-IF

## DESCRIPTION

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|---|---|
| **Source** | Chinese Hamster Ovary cell line, CHO-derived human IFN-alpha 21/IFNA21 protein<br>Cys24-Glu189<br>Accession # P01568.2 |
| **N-terminal Sequence Analysis** | Cys24 |
| **Predicted Molecular Mass** | 19 kDa |

## SPECIFICATIONS

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|---|---|
| **SDS-PAGE** | 18-22 kDa, under reducing conditions. |
| **Activity** | Measured in anti-viral assays using HeLa human cervical epithelial carcinoma cells infected with encephalomyocarditis (EMC) virus. Meager, A. (1987) in Lymphokines and Interferons, a Practical Approach. Clemens, M.J. *et al.* (eds): IRL Press. 129.<br>The $ED_{50}$ for this effect is 1.00-30.0 pg/mL. |
| **Endotoxin Level** | <0.10 EU per 1 µg of the protein by the LAL method. |
| **Purity** | >95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining. |
| **Formulation** | Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. |

## PREPARATION AND STORAGE

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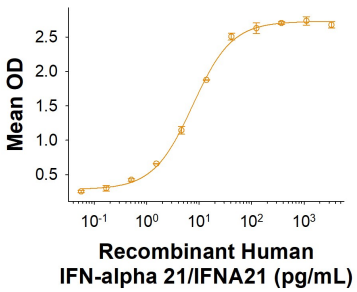
| **Reconstitution** | Reconstitute at 100 µg/mL in PBS. |
| **Shipping** | The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. |
| **Stability & Storage** | **Use a manual defrost freezer and avoid repeated freeze-thaw cycles.**<br>• 12 months from date of receipt, -20 to -70 °C as supplied.<br>• 1 month, 2 to 8 °C under sterile conditions after reconstitution.<br>• 3 months, -20 to -70 °C under sterile conditions after reconstitution. |

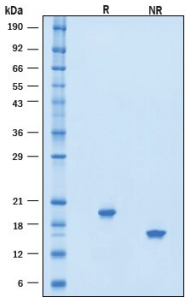
## DATA

**Bioactivity**




**Recombinant Human IFN-alpha 21/IFNA21 Protein Bioactivity.** Recombinant Human IFN-alpha 21/IFNA21 Protein (Catalog # 11159-IF) demonstrates anti-viral activity in HeLa human cervical epithelial carcinoma cells infected with encephalomyocarditis (EMC) virus. The $ED_{50}$ for this effect is 1.00-30.0 pg/mL.

**SDS-PAGE**




**Recombinant Human IFN-alpha 21/IFNA21 Protein SDS-PAGE.** 2 µg/lane of Recombinant Human IFN-alpha 21/IFNA21 Protein (Catalog # 11159-IF) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 18-22 kDa, under reducing conditions.



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## BACKGROUND

Interferons (IFN) are a family of cytokines with potent antiviral, anti-proliferative and immunomodulatory properties, classified based on their binding specificity to cell surface receptors (1). Human IFNA2 was originally cloned in the early '80s and now more than a dozen closely related IFN alpha subtypes have been identified in both the human and mouse genome, each sharing about 80% amino acid (aa) sequence homology (2-4). Structurally, type I IFNs belong to the class of five helical-bundle cytokines, with the IFNA subtypes containing 2 conserved disulfide bonds (5). There is not a mouse homolog for IFNA21, but mature human IFNA21 is identical to chimpanzee IFNA21. The type I IFNs bind to the interferon alpha receptor (IFNAR), which consists of two subunits: IFNAR1 (alpha -subunit) and IFNAR2 (beta -subunit) (6, 7). Individual IFNA subtypes are known to display unique efficacies to viral protection, with IFNA21 displaying intermediate activity inducing interferon stimulating genes (8). Further, human IFNA21 has shown weak anti-viral activity against viruses such as metapneumovirus (9).

**References:**

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3. Matsumiya, T. *et al.* (2007) J. Immunol. **179**:4542.
4. Schreiber, G. and J. Piehler (2015) Trends Immunol. **36**:139.
5. Wittling, M.C. *et al.* (2021) Front Immunol. **11**:605673.
6. van Pesch, V. *et al.* (2004) J. Virol. **78**:8219.
7. James, C.M. *et al.* (2007) Vaccine. **25(10):**1856.
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