Recombinant Human IFN-γ (rHuIFN-γ)

Acnovia Data Sheet

Catalog#/Size:	AC52381/100 μg.
Source:	*Escherichia coli.*
Molecular Weight:	Approximately 16.9kDa, a single non-glycosylated polypeptide chain containing 143 amino acids.
Description :	Accession # CAA31639, Gln24-Gln166, with an N terminal Met.
SDS-PAGE:	16.9 kDa, under reducing conditions.
Purity:	>95 %, as determined by SDS-PAGE, under reducing non-reducing conditions, visualized by coomassie staining.
Endotoxin:	Less than 0.01 EU/μg of rHuIFN-γ as determined by kinetic Limulus Amoebocyte Lysate (LAL) assay.
Biological Activity:	Recombinant human IFN-γ bioactivity is measured by inhibition of the proliferation of HT-29 cells, the EC50 for this effect is 8.342-14.89 ng/mL.
Physical Appearance:	Sterile Filtered White lyophilized (freeze-dried) powder.
Formulation:	Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose.
Reconstitution:	We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Reconstitute to a concentration of 0.1-1.0 mg/mL in **sterile distilled H_2O**. Stock solutions should be apportioned into working aliquots and stored at-20 ℃ to -70 ℃. Further dilutions should be made in appropriate buffered solutions. **Do not reconstitute in cell culture media directly**.
Shipping:	The product is shipped at 2 ℃ to 8 ° C. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage:	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** A minimum of 12 months from date of shipping when stored at -20 ℃ to -70 ℃ as supplied. 4 weeks at 2 ℃ to 8 ℃ under sterile conditions after reconstitution. 4 months at -20 ℃ to -70 ℃ under sterile conditions after reconstitution.
Usage:	Acnovia rHu IFN-γ product can be used for a variety of ex vivo cell culture applications such as research or further manufacturing.
Quality statement:	No animal- or human-derived materials were used for the manufacture of this product, unless otherwise stated in the respective Certificate of Origin.

Background:

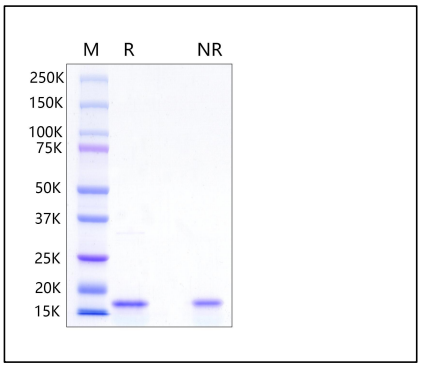
IFN-γ is a homodimer glycoprotein formed by antiparallel association of two 21–24-kD subunits not covalently linked. Each subunit has six alpha helices held together by short nonhelical sequences that is primarily produced by natural killer (NK) cells, T cells, and NK T cells. However, IFN-γ is also secreted by other cells such as B cells, macrophages, and dendritic cells (DCs). IFN-γ plays essential and unique immune and biological roles beyond its well-known antiviral function. As the sole type II class IFN, the biologically active form of IFN-γ is a dimer. A primary role for IFN-γ is the activation of macrophages to increase phagocytosis, tumoricidal properties, and intracellular killing of pathogens, particularly bacteria and fungi. IFN-γ induces macrophage production of a variety of inflammatory mediators and reactive oxygen and nitrogen intermediates.

Application References:

1.Kak, Gunjan, Raza, Mohsin and Tiwari, Brijendra K. "Interferon-gamma (IFN-γ): Exploring its implications in infectious diseases" Biomolecular Concepts, vol. 9, no. 1, 2018, pp. 64-79.

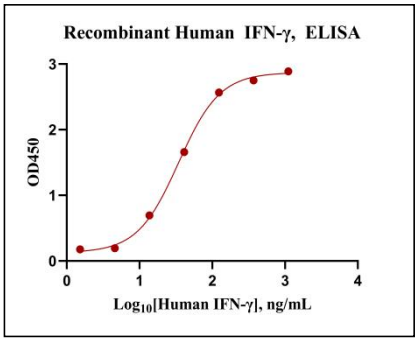
2.Heekyong Bae, Alec T. Barlow, Howard Young, Julio C. Valencia, Interferon γ: An Overview of Its Functions in Health and Disease,Editor(s): Michael J.H. Ratcliffe, Encyclopedia of Immunobiology, Academic Press, 2016, Pages 494-500.

DATA:



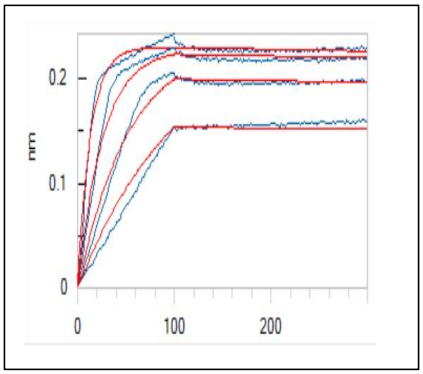
SDS-PAGE

Recombinant Human IFN-γ Protein SDS-PAGE 1μg/lane of Recombinant Human IFN-γ (Catalog #AC52381) was resolved with SDS-PAGE under reducing(R)and non-reducing (NR) conditions visualized by coomassie staining showing a single band at about 16 kDa.



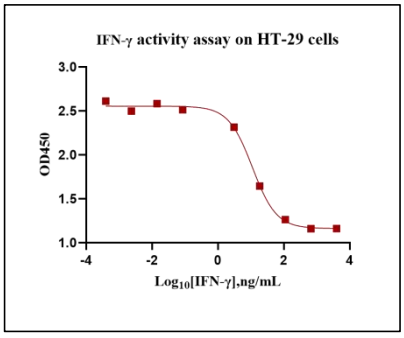
Bioactivity-ELISA

Immobilized Recombinant Human IFN-γ (Catalog #AC52381) at 0.2μg/well can bind Human IFN-γ R1 with a linear range of 31.0 to 38.37 ng/mL.



Bioactivity-BLI

Loaded Human IFN-γ R1, can bind Recombinant Human IFN-γ (Catalog #AC52381) with an affinity constant of 0.051nM as determined in BLI assay (Octet®R8).



Bioactivity-Cell based assay

Recombinant human IFN-γ bioactivity is measured by inhibition of the proliferation of HT-29 cells, the EC50 for this effect is 8.342-14.89 ng/mL.