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ELISA Kits (</us/en/home/life-science/antibodies/immunoassays/elisa-kits.html>) › IFN gamma ELISA Kits ([/immunoassays/elisa/target/IFN gamma](/immunoassays/elisa/target/IFN%20gamma))

Invitrogen

Human IFN gamma ProQuantum Immunoassay Kit

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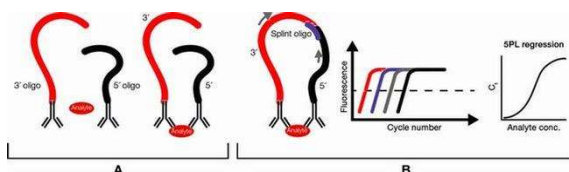
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FIGURE 1 / 4
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Human IFN gamma ProQuantum Immunoassay Kit

How ProQuantum immunoassays
work

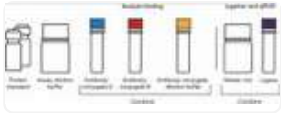
(A) Antibody-antigen binding:
Antibodies bind to two separate
epitopes on the antigen (during a 1-
hr incubation), which brings the two
conjugated oligonucleotides into
close proximity. (B) Ligation and
amplification of signal (in a qPCR
instrument): DNA ligase and a third
splint oligonucleotide connector





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are added to ligate the two ends of the conjugated oligonucleotides, creating a 100-base DNA template. Once the ligase is inactivated at 95°C, the sample is amplified through 40 cycles of annea... View More



Product Specifications

Analytical sensitivity	<0.01 pg/mL	
Assay range	0.0128 - 5000 pg/mL	
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Sample type/volume	Serum	2-5 µL
	Supernatant	2-5 µL
	Plasma	2-5 µL
Hands-on time	30 min	
Time-to-result	2 hr	
Homogenous (no wash)	Yes	
Instrument	qPCR Instruments	
Product size	96 Tests	
Contents	Assay Dilution Buffer Antibody-Conjugate A Antibody-Conjugate B Antibody-Conjugate Dilution Buffer Standard Master Mix Ligase	
Shipping conditions	Dry ice	
Storage	-20°C	
Protein name	IFN gamma	
Species (tested)	Human	
Assay kit format	Proximity-based Immunoassay	
Label or dye	FAM™	

About This Kit

The ProQuantum Human IFN-γ Immunoassay Kit is designed to provide highly sensitive quantitative measurements of human IFN-γ protein in small sample volumes. Utilizing proximity ligation assay (PLA) technology, the assay combines the analyte specificity of high-affinity antibody-antigen binding with the signal detection and amplification capabilities of

real-time PCR to achieve a simple yet powerful next-generation protein quantitation. The user-friendly workflow combined with intuitive Cloud-Quantum analytics enables sample-to-answer in just 2 hours.

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- High sensitivity-detect low levels of protein with greater sensitivity than traditional methods
- Broad dynamic range- ≥ 5 logarithmic units, minimizing sample dilutions to ensure they fall within the range
- Small sample consumption-use 2-5 μL of sample (compared to 75 μL for triplicate wells with other methods)
- Fast, easy workflow-2 hours from sample to answer, with no wash steps
- No proprietary instrument to purchase-runs on any real-time PCR instrument

ProQuantum immunoassays utilize a matched pair of target-specific antibodies, each conjugated to a DNA oligonucleotide. During antibody-analyte binding, the two DNA oligos are brought into close proximity, which allows for ligation of the two strands and subsequent creation of a template strand for amplification. This platform leverages the sensitivity and large dynamic range of Applied Biosystems TaqMan real-time PCR technology (Figure 1).

The assay workflow is fast and easy-2 steps in 2 hours. There are a total of 7 components in each kit (Figure 2). First, mix the antibody-conjugates, dilute the sample, and create the standard curve in a working plate. Then, using a multi-channel pipette, add the antibody-conjugates and sample (or standard) into the wells of a PCR plate and incubate for 1 hour. Combine the master mix and ligase and add to the wells of the PCR plate, then run the plate on any qPCR instrument. After the run is complete, import the results file into the ProQuantum cloud-based software at <https://apps.thermofisher.com/apps/proquantum>. Using this software, the data can be analyzed easily to obtain protein concentration values. The software allows you to set up standard curves, design plate layouts, set up customized assay instructions, and obtain robust statistical group-wise comparisons.

Target information

IFN gamma (Interferon gamma, Type II interferon) is a macrophage activation factor, and immune interferon that is produced primarily by T-lymphocytes and natural killer cells in response to antigens, mitogens, Staphylococcus enterotoxin B, phytohemagglutinin and other cytokines. IFN gamma is a dimeric protein consisting of two 146 amino acid subunits. IFN gamma is a glycoprotein that exists, functionally, as a homodimer of approximately 45 kDa. On SDS-PAGE, IFN gamma appears as a combination of 25, 20 and minor 15.5 kDa bands as a result of differential glycosylation. The biological activity of the IFN gamma

homodimer is highly species specific. Human IFN gamma does not show cross-reactivity with mouse. IFN gamma function includes the following: antiviral activity, antiproliferative activity, induction of class I and II MHC, macrophage activation, and enhanced immunoglobulin secretion by B lymphocytes. IFN gamma is involved in cytokine regulation and also acts synergistically with other cytokines. Activation of IFN gamma takes place through binding of IFN gamma receptor I and II, and activating the JAK-STAT pathway. IFN gamma does not show any homology with IFN alpha or IFN beta but human IFN gamma shows about 40% sequence homology with mouse IFN gamma. IFN gamma is upregulated by IL2, FGF basic, EGF and downregulated by vitamin D3 or DMN. IFN gamma gene mutations are associated with aplastic anemia.

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Bioinformatics

Gene aliases : IFG, IFI, IFNG

Gene ID : (Human) 3458

(<https://www.ncbi.nlm.nih.gov/gene?term=3458>)

Gene symbol : IFNG

Protein Aliases : IFN-gamma, Immune interferon, Interferon gamma, interferon, gamma

UniProt ID (Human) P01579

(<https://www.uniprot.org/uniprot/P01579>)

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Safety Data Sheets

SDS

Product Information

Manuals (2)

ProQuantum Technical Guide (https://assets.thermofisher.com/TFS-Assets%2FMSG%2Fmanuals%2FMAN0017048_proquantum_technical_guide_UG.pdf)

Product Sheet: ProQuantum (https://assets.thermofisher.com/TFS-

Human IFNγ Immunoassay Kit Assets%2FMSG%2Fmanuals%2FMAN0017139-A35576_proquantum_Hu_IFNγ_PI.pdf)

Scientific Resources

Reference Materials (2)

(https://assets.thermofisher.com/TFS-Assets//Reference-Materials/LULL- 537)

ProQuantum High-Sensitivity Immunoassay Kits Green Fact Sheet (https://assets.thermofisher.com/TFS-

Assets%2FBID%2FReference-Materials%2Fproquantum-high-sensitivity-immunoassay-fact-sheet.pdf)

Brochures (1)

Brochure: ProQuantum high-sensitivity immunoassays (https://assets.thermofisher.com/TFS-

Assets%2FMSG%2Fbrochures%2Fproquantum-high-sensitivity-immunoassay-protein-quantitation-brochure.pdf)

Flyers (1)

ProQuantum high-sensitivity immunoassay フライヤー (https://assets.thermofisher.com/TFS-Assets%2FBID%2FFlyers%2Fproquantum-flyer-ja.pdf)

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