Human IFN gamma High Sensitivity ELISA Kit ab236895

**Overview**

**Product name**
Human IFN gamma High Sensitivity ELISA Kit

**Detection method**
Colorimetric

**Precision**

<table>
<thead>
<tr>
<th>Sample</th>
<th>n</th>
<th>Mean</th>
<th>SD</th>
<th>CV%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supernatant</td>
<td>5</td>
<td></td>
<td></td>
<td>2.6%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sample</th>
<th>n</th>
<th>Mean</th>
<th>SD</th>
<th>CV%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supernatant</td>
<td>3</td>
<td></td>
<td></td>
<td>5.3%</td>
</tr>
</tbody>
</table>

**Sample type**
Cell culture supernatant, Saliva, Serum, EDTA Plasma, Cit plasma

**Assay type**
Sandwich (quantitative)

**Sensitivity**
2 pg/ml

**Range**
12.5 pg/ml - 1600 pg/ml

**Recovery**

<table>
<thead>
<tr>
<th>Sample type</th>
<th>Average %</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cell culture supernatant</td>
<td>100</td>
<td>98% - 101%</td>
</tr>
<tr>
<td>Saliva</td>
<td>90</td>
<td>87% - 92%</td>
</tr>
<tr>
<td>Serum</td>
<td>128</td>
<td>122% - 133%</td>
</tr>
<tr>
<td>Cell culture media</td>
<td>94</td>
<td>91% - 97%</td>
</tr>
<tr>
<td>EDTA Plasma</td>
<td>115</td>
<td>109% - 120%</td>
</tr>
<tr>
<td>Cit plasma</td>
<td>121</td>
<td>120% - 121%</td>
</tr>
</tbody>
</table>
Assay time: 1h 30m
Assay duration: One step assay
Species reactivity: Reacts with: Human

Human IFN gamma High Sensitivity ELISA Kit (ab236895) is a single-wash 90 min sandwich ELISA designed for the quantitative measurement of IFN gamma protein in cit plasma, edta plasma, saliva, serum, and cell culture supernatant. It uses our proprietary SimpleStep ELISA® technology. Quantitate Human IFN gamma with 2 pg/ml sensitivity.

SimpleStep ELISA® technology employs capture antibodies conjugated to an affinity tag that is recognized by the monoclonal antibody used to coat our SimpleStep ELISA® plates. This approach to sandwich ELISA allows the formation of the antibody-analyte sandwich complex in a single step, significantly reducing assay time. See the SimpleStep ELISA® protocol summary in the image section for further details. Our SimpleStep ELISA® technology provides several benefits:

- Single-wash protocol reduces assay time to 90 minutes or less
- High sensitivity, specificity and reproducibility from superior antibodies
- Fully validated in biological samples
- 96-wells plate breakable into 12 x 8 wells strips

A 384-well SimpleStep ELISA® microplate (ab203359) is available to use as an alternative to the 96-well microplate provided with SimpleStep ELISA® kits.

Platform
Pre-coated microplate (12 x 8 well strips)

Properties

Storage instructions: Store at +4°C. Please refer to protocols.

<table>
<thead>
<tr>
<th>Components</th>
<th>1 x 96 tests</th>
</tr>
</thead>
<tbody>
<tr>
<td>10X Human IFN gamma High Sensitivity Capture Antibody</td>
<td>1 x 600µl</td>
</tr>
<tr>
<td>10X Human IFN gamma High Sensitivity Detector Antibody</td>
<td>1 x 600µl</td>
</tr>
<tr>
<td>10X Wash Buffer PT (ab206977)</td>
<td>1 x 20ml</td>
</tr>
<tr>
<td>Antibody Diluent 4BI</td>
<td>1 x 6ml</td>
</tr>
<tr>
<td>Human IFN gamma High Sensitivity Lyophilized Recombinant Protein</td>
<td>2 vials</td>
</tr>
<tr>
<td>Plate Seals</td>
<td>1 unit</td>
</tr>
<tr>
<td>Sample Diluent 50BP</td>
<td>1 x 20ml</td>
</tr>
<tr>
<td>Sample Diluent NS (ab193972)</td>
<td>1 x 50ml</td>
</tr>
<tr>
<td>SimpleStep Pre-Coated 96-Well Microplate (ab206978)</td>
<td>1 unit</td>
</tr>
</tbody>
</table>
Function

Produced by lymphocytes activated by specific antigens or mitogens. IFN-gamma, in addition to having antiviral activity, has important immunoregulatory functions. It is a potent activator of macrophages, it has antiproliferative effects on transformed cells and it can potentiate the antiviral and antitumor effects of the type I interferons.

Tissue specificity

Released primarily from activated T lymphocytes.

Involvement in disease

In Caucasians, genetic variation in IFNG is associated with the risk of aplastic anemia (AA) [MIM:609135]. AA is a rare disease in which the reduction of the circulating blood cells results from damage to the stem cell pool in bone marrow. In most patients, the stem cell lesion is caused by an autoimmune attack. T-lymphocytes, activated by an endogenous or exogenous, and most often unknown antigenic stimulus, secrete cytokines, including IFN-gamma, which would in turn be able to suppress hematopoiesis.

Sequence similarities

Belongs to the type II (or gamma) interferon family.

Post-translational modifications

Proteolytic processing produces C-terminal heterogeneity, with proteins ending alternatively at Gly-150, Met-157 or Gly-161.

Cellular localization

Secreted.

SimpleStep ELISA technology allows the formation of the antibody-antigen complex in one single step, reducing assay time to 90 minutes. Add samples or standards and antibody mix to wells all at once, incubate, wash, and add your final substrate. See protocol for a detailed step-by-step guide.

Standard Curve comparison between Human IFN gamma SimpleStep ELISA kit and traditional ELISA kit from leading competitor. SimpleStep ELISA kit shows increased sensitivity.
Example of human IFN gamma standard curve in Sample Diluent NS.

Example of human IFN gamma standard curve in Sample Diluent 50BP.

Interpolated concentrations of native IFN gamma in human PHA-M stimulated PBMC cell culture supernatant samples.

The concentrations of IFN gamma were measured in duplicates, interpolated from the IFN gamma standard curves and corrected for sample dilution. Undiluted samples are as follows: PBMC supernatant 50%. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean IFN gamma concentration was determined to be 1102 pg/mL in neat PHA-M stimulated PBMC cell culture supernatant.
Serum from ten individual healthy human female donors was measured in duplicate. Interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean IFN gamma concentration was determined to be 33.5 pg/mL with a range of non-detectable – 33.5 pg/mL.

Comparison of Interferon gamma in unstimulated and PHA-M stimulated PBMC cell culture supernatants.

Human PBMCs were cultured for 46 hours in the presence or absence of 1.5% PHA-M. The concentrations of Interferon gamma were measured in three different dilutions of the supernatant samples in duplicates and interpolated from the Interferon gamma standard curve. The interpolated values are plotted (mean +/- SD, n=3). The mean Interferon gamma concentration was determined to be 1,073 pg/mL in PHA-M stimulated PBMC cell culture supernatant, and undetectable in unstimulated PBMC cell culture supernatant and RPMI1640 media containing 10% FBS (not shown).

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