**Product datasheet**

**Human IgG2 ELISA Kit ab202402**

**Overview**

- **Product name**: Human IgG2 ELISA Kit
- **Detection method**: Colorimetric
- **Precision**
  - **Intra-assay**
    - Sample: Serum
      - n: 8
      - Mean: 
      - SD: 
      - CV%: 5.3%
  - **Inter-assay**
    - Sample: Serum
      - n: 3
      - Mean: 
      - SD: 
      - CV%: 4.3%
- **Sample type**: Cell culture supernatant, Saliva, Milk, Urine, Serum, Heparin Plasma, EDTA Plasma, Citrate Plasma
- **Assay type**: Sandwich (quantitative)
- **Sensitivity**: 750 pg/ml
- **Range**: 1.56 ng/ml - 100 ng/ml
- **Recovery**
  - **Sample specific recovery**
    - Sample type: Saliva
      - Average %: 104
      - Range: 93% - 124%
    - Milk
      - Average %: 90
      - Range: 86% - 94%
    - Urine
      - Average %: 96.5
      - Range: 90% - 101%
    - Serum
      - Average %: 99.7
      - Range: 97.4% - 102.4%
    - Heparin Plasma
      - Average %: 101.3
      - Range: 97.4% - 107.4%
<table>
<thead>
<tr>
<th>Sample type</th>
<th>Average %</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDTA Plasma</td>
<td>102.5</td>
<td>98% - 105%</td>
</tr>
<tr>
<td>Citrate Plasma</td>
<td>107.5</td>
<td>103% - 110%</td>
</tr>
</tbody>
</table>

**Assay time**
1h 30m

**Assay duration**
One step assay

**Species reactivity**
- **Reacts with:** Human
- **Does not react with:** Mouse, Rat, Rabbit, Goat, Guinea pig, Cow, Dog, Pig

**Product overview**

Human IgG2 *in vitro* SimpleStep ELISA® (Enzyme-Linked Immunosorbent Assay) kit is designed for the quantitative measurement of IgG2 protein in human serum, plasma, milk, urine, saliva and cell culture supernatants.

The SimpleStep ELISA® employs an affinity tag labeled capture antibody and a reporter conjugated detector antibody which immunocapture the sample analyte in solution. This entire complex (capture antibody/analyte/detector antibody) is in turn immobilized via immunoaffinity of an anti-tag antibody coating the well. To perform the assay, samples or standards are added to the wells, followed by the antibody mix. After incubation, the wells are washed to remove unbound material. TMB substrate is added and during incubation is catalyzed by HRP, generating blue coloration. This reaction is then stopped by addition of Stop Solution completing any color change from blue to yellow. Signal is generated proportionally to the amount of bound analyte and the intensity is measured at 450 nm. Optionally, instead of the endpoint reading, development of TMB can be recorded kinetically at 600 nm.

**Notes**

Immunoglobulin G (IgG) is a glycoprotein molecule which belongs to the immunoglobulin family of proteins known as antibodies. Immunoglobulins are the key component of humoral immunity. IgG has an approximate molecular weight of about 150kDa and it is composed of four peptide chains: two identical heavy chains (γ) of about 50kDa and two identical light chains (κ) of about 25kDa each. The heavy chains are linked to each other and to the light chain by disulfide bonds. At the N terminus, both the heavy and the light chain contain variable regions (VH and VL) which account for antibody diversity. At the C terminus, both chains contain constant regions (CH and CL) but only CH mediates effector functions. Structurally the IgG molecule may be divided into: (1) the Fragment antigen binding region (Fab) containing the VL, VH, CL and CH2 all of which shape the antigen binding site and (2) the Fragment crystallizable region (Fc) containing CH domains 2 – 4 which stabilize the antibody and bind to the Fc receptor on the surface of macrophages, neutrophils, natural killer cells as well as to complement proteins to mediate therefore physiological effects.

IgG is synthesized and secreted by plasma B cells in response to an immunogen after recognition of specific epitopes on the antigen and it is generated following class switching and maturation of an antibody response, thus providing immune protection. There are four subclasses of IgG in humans (IgG 1, 2, 3, 4) with variable affinity to Fc receptors and complement. The levels of IgG are generally considered to be indicative of an individual’s immune status and are found decrease in conditions such as hypogammaglobulinemia and X-linked agammaglobulinemia. IgG accounts for 75% of the total human protein and can be found in serum, lymphatic fluid, cerebrospinal fluid, colostrum, milk, urine, saliva, tissues, sweat and skin sebum.

IgG2, the second largest part of IgG isotypes in humans, comprises 20-25% of the main subclass and is the prevalent immune response against carbohydrate-/polysaccharide antigens. Among all IgG isotypes, a deficiency in IgG2 is the most common one and associated with recurring
airway/respiratory infections caused by encapsulated bacteria such as pneumococci and/or Haemophilus influenza type B.

**Tested applications**

Suitable for: Sandwich ELISA

**Platform**

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 IgG2 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 CPI - HAMA Blocker (ab193969)</td>
<td>1 x 6ml</td>
</tr>
<tr>
<td>Human IgG2 Capture Antibody (Lyophilized)</td>
<td>1 vial</td>
</tr>
<tr>
<td>Human IgG2 Lyophilized Purified Protein</td>
<td>2 vials</td>
</tr>
<tr>
<td>Plate Seals</td>
<td>1 unit</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>
<tr>
<td>Stop Solution</td>
<td>1 x 12ml</td>
</tr>
<tr>
<td>TMB Development Solution</td>
<td>1 x 12ml</td>
</tr>
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</table>

**Applications**

Our Abpromise guarantee covers the use of ab202402 in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

<table>
<thead>
<tr>
<th>Application</th>
<th>Abreviews</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sandwich ELISA</td>
<td></td>
<td>Use at an assay dependent concentration.</td>
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</tbody>
</table>

**Images**
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.

Background-subtracted data values (mean +/- SD) are graphed.

Native human IgG2 protein was measured in citrate plasma (1:300,000), EDTA plasma (1:200,000), and heparin plasma (1:300,000) in a 2 fold dilution series in Sample Diluent NS. The interpolated dilution factor corrected values are graphed (mean +/- SD).
Native human IgG2 protein was measured in milk (1:800), urine (1:30), and saliva (1:400) in a 2-fold dilution series in Sample Diluent NS. The interpolated dilution factor corrected values are graphed (mean +/- SD).

Ten individual healthy male donors were evaluated for the presence of IgG2 in serum using this assay. Results were interpolated from the standard curve in Sample Diluent NS and corrected by sample dilution (1:500,000). In the 10 individual donors, the mean level of IgG2 is 5.6 mg/mL with a range of 2.5 – 9.1 mg/mL and a standard deviation of 2.16 mg/mL.

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