abcam

Product datasheet

# Human IgG ELISA Kit, Fluorescent ab229390

CatchPoint SimpleStep ELISA

5 Images

## Overview

**Product name** Human IgG ELISA Kit, Fluorescent

**Detection method** Fluorescent

**Precision**

Intra-assay

| Sample | n | Mean | SD | CV% |
|---|---|---|---|---|
| Serum | 8 | | | 6.4% |

Inter-assay

| Sample | n | Mean | SD | CV% |
|---|---|---|---|---|
| Serum | 3 | | | 14.7% |

**Sample type** Cell culture supernatant, Saliva, Milk, Urine, Serum, Cell culture extracts, Adherent cells, Tissue Extracts, Hep Plasma, EDTA Plasma, Cit plasma, Cerebral Spinal Fluid

**Assay type** Sandwich (quantitative)

**Sensitivity** 0.03 ng/ml

**Range** 0.03 ng/ml - 30 ng/ml

**Recovery**

Sample specific recovery

| Sample type | Average % | Range |
|---|---|---|
| Saliva | 89 | 80% - 106% |
| Milk | 89 | 83% - 94% |
| Urine | 87 | 82% - 93% |
| Serum | 101 | 88% - 125% |
| Cell culture media | 107 | 96% - 115% |
| Hep Plasma | 100 | 100% - 100% |

| Sample type | Average % | Range |
|---|---|---|
| EDTA Plasma | 90.17 | 87% - 93% |
| Cit plasma | 100 | 98% - 102% |
| Cerebral Spinal Fluid | 98 | 88% - 105% |

**Assay time** 1h 30m

**Assay duration** One step assay

**Species reactivity**

**Reacts with:** Human
**Does not react with:** Sheep, Goat, Cow

**Product overview**

IgG *in vitro* CatchPoint SimpleStep ELISA (Enzyme-Linked Immunosorbent Assay) kit is designed for the quantitative measurement of IgG protein in humanserum, plasma, milk, saliva, urine, cell culture supernatants, and tissue extracts.

This CatchPoint SimpleStep ELISA kit has been **optimized for Molecular Devices Microplate Readers**. Click **here** for a list of recommended Microplate Readers.
If using a Molecular Devices' plate reader supported by SoftMax® Pro software, a preconfigured protocol for these CatchPoint SimpleStep ELISA Kits is available with all the protocol and analysis settings at **www.softmaxpro.org**.

The CatchPoint 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. CatchPoint HRP Development Solution containing the Stoplight Red Substrate is added. During incubation, the substrate is catalyzed by HRP generating a fluorescent product. Signal is generated proportionally to the amount of bound analyte and the intensity is measured in a fluorescence plater reader at 530/570/590 nm Excitation/Cutoff/Emission.

**Notes**

Immunoglubulin 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 increased in all types of infections, liver disease, severe malnutrition, dysproteinemia and rheumatoid arthritis. It is decrease in conditions such as hypogammaglobulinemia, X-linked agammaglobulinemia, lymphoid aplasia and chronic lymphoblastic leukemia. IgG accounts for 75% of the total human protein and can be found in serum, lymphatic fluid, cerebrospinal fluid, colostrum, milk, urine, saliva, sweat and body tissues. IgG has been shown to bind some bacterial strains from cutaneous microbiota.

The Fc portion of human IgG is frequently used as the basis of prolonged pharmacokinetics as it is used as a fusion partner to extend the half-life of fusion proteins.

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It is the responsibility of our customers to check the necessity of application of REACH Authorisation, and any other relevant authorisations, for their intended uses.

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

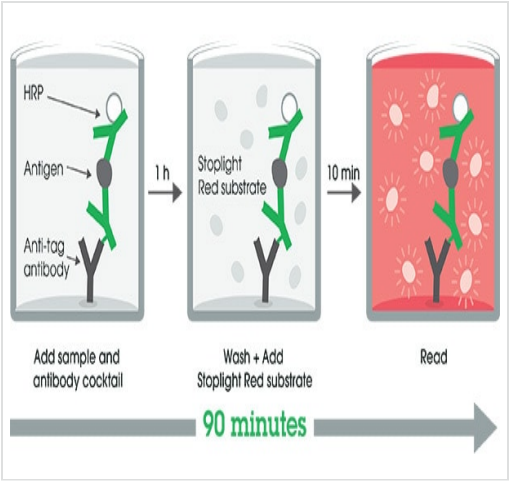
## Properties

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

| Components | 1 x 96 tests |
|---|---|
| 100X Stoplight Red Substrate | 1 x 120µl |
| 10X Human IgG Capture Antibody | 1 x 600µl |
| 10X Human IgG Detector Antibody | 1 x 600µl |
| 10X Wash Buffer PT (ab206977) | 1 x 20ml |
| 500X Hydrogen Peroxide ($H_2O_2$, 3%) | 1 x 50µl |
| 5X Cell Extraction Buffer PTR (ab193970) | 1 x 10ml |
| Antibody Diluent CP | 1 x 6ml |
| Human IgG Lyophilized Purified Protein | 2 vials |
| Plate Seals | 1 unit |
| Sample Diluent NS (ab193972) | 1 x 50ml |
| SimpleStep Pre-Coated Black 96-Well Microplate | 1 unit |
| Stoplight Red Substrate Buffer | 1 x 12ml |

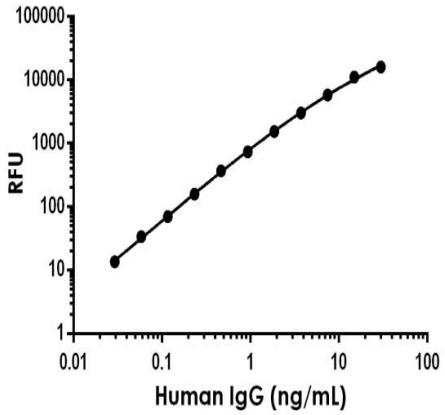
**Cellular localization** Secreted

## Images



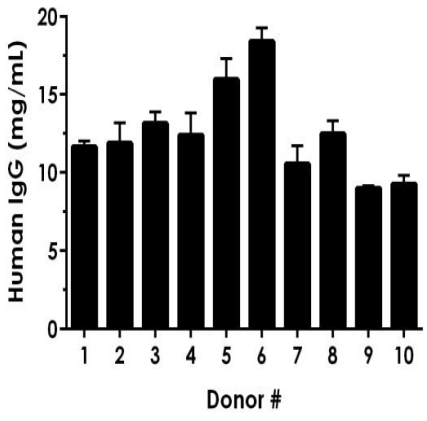

SimpleStep ELISA technology allows the formation of the antibody-antigen complex in one single step, reducing assay time to 90 minutes. Add samples or standards and antibody mix to wells all at once, incubate, wash, and add your final substrate. See protocol for a detailed step-by-step guide.

Other - Human IgG ELISA Kit, Fluorescent (ab229390)



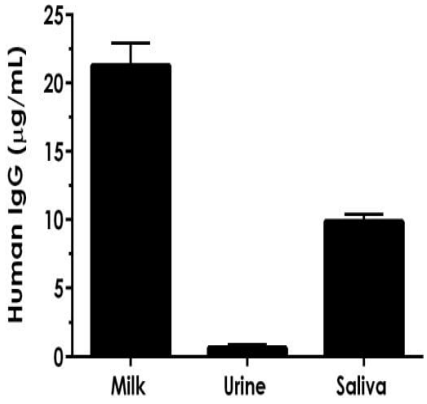

Background-subtracted data values (mean +/- SD) are graphed.

Example of human IgG standard curve in Sample Diluent NS.



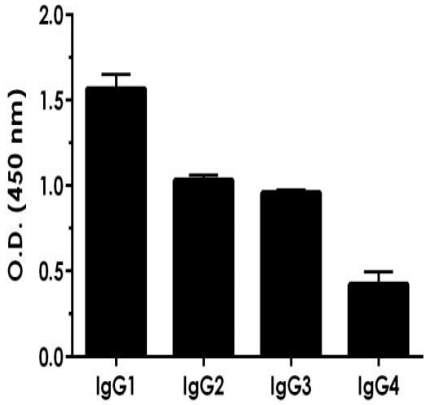

Ten individual healthy donors were evaluated for the presence of IgG in serum using this assay. Results were interpolated from the standard curve in Sample Diluent NS and corrected for sample dilution ($1:5x10^6$). The mean level of IgG was found at 12.5 mg/mL with a range of 9 – 18.4mg/mL.

IgG levels in individual healthy donors.




Comparison of IgG levels in human milk, urine and saliva.

Bodily fluids from 3 different donors were evaluated for the presence of IgG using this assay. Results were interpolated from the standard curve in sample diluent NS and corrected for sample dilution (1:2.5x$10^4$). The mean levels in Milk were found at 20.7 µg/mL, in Urine at 0.8 µg/mL and in Saliva at 11.1 µg/mL.




IgG1-4 isotypes are detected by this kit.

Human IgG1, IgG2, IgG3 and IgG4 were tested at 5ng/mL.



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