

EasyGo™ Human IgG One-Step ELISA Kit

[Catalog No] EK171EGA

[SIZE] 48T/96T

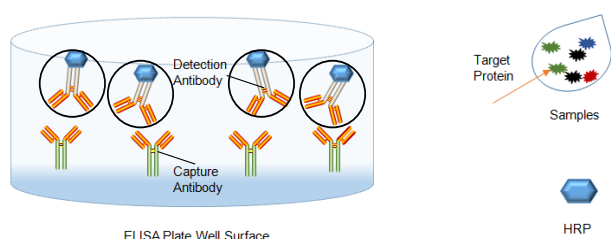
[INTENDED USE] For the quantitative determination of human Immunoglobulin G (IgG) concentrations in serum and plasma.

[INTRODUCTION]

Immunoglobulin G (IgG) is a type of antibody. It is a protein complex composed of four peptide chains — two identical heavy chains and two identical light chains arranged in a Y-shape typical of antibody monomers. Each IgG has two antigen binding sites. IgG is the main type of antibody found in blood and extracellular fluid allowing it to control infection of body tissues. IgG molecules are created and released by plasma B cells. IgG is the only isotype that has receptors to facilitate passage through the human placenta, thereby providing protection to the fetus in utero.

IgG antibodies are extracted from donated blood plasma and used as a therapeutic known as intravenous immunoglobulin (IVIG). This is used to treat immune deficiencies, autoimmune disorders, and infections.

[PRINCIPLE OF THE ASSAY]



Human IgG ELISA Kit is based on the quantitative sandwich enzyme-linked immunosorbent assay technique to measure concentration of human IgG in the samples. A monoclonal antibody specific for human IgG has been immobilized onto microwells, and one pellet of the HRP-linked detect antibody specific for IgG (light yellow) is pre-placed in the microwells, sealed by the adhesive film. Standard or samples are pipetted into the wells, then IgG present is bound by the immobilized antibody and detect antibody. After washing, substrate solution reacts with HRP and color develops in proportion to the amount of IgG bound by the immobilized antibody. The color development is stopped by addition of acid and the optical density value is measured by microplate reader.

[MATERIALS PROVIDED]

PART	PART #	EK171EGA-48	EK171EGA-96
Coated Microplate	EK171EGAP	48T	96T
Standard	EK171EGAS	1vial	2vials
TMB	E0230	6 mL	11 mL
Stop Solution	E0300	11 mL	11 mL
Washing Buffer (20x)	E0281	11 mL	11 mL
Assay Buffer (10x)	E0310	10 mL	15 mL

Note: Components from reagent kits of different batch numbers must not be used interchangeably.

OTHER SUPPLIES REQUIRED

- 1) Microplate reader capable of measuring absorbance at 450 nm, with correction wavelength set at 570 nm or 630 nm.
- 2) Pipettes and pipette tips.

3) 50 µl to 300 µl adjustable multichannel micropipette with disposable tips.

4) Multichannel micropipette reservoir.

5) Beakers, flasks, cylinders necessary for preparation of reagents.

6) Deionized or distilled water.

7) Polypropylene test tubes for dilution.

[STORAGE]

Store at 2-8°C; refer to the kit label for expiration date.

For opened kits:

Pre-coated microplate: Can be stored at 2-8°C for approximately 1 month (return unused strips to the aluminum foil bag and reseal).

Standard: Can be stored at -20°C for approximately 1 month (discard after single-use reconstitution).

Other components: Can be stored at 2-8°C for approximately 1 month.

[SAMPLE PREPARATION]

Normal serum and plasma samples require a 1,000,000-fold dilution. A suggested 1,000,000-fold dilution is three-step dilution: first, 5 µl sample + 495 µl Assay Buffer (1x); next, 5 µl Mix I + 495 µl Assay Buffer (1x); then, 5 µl Mix II + 495 µl Assay Buffer (1x).

[SAMPLE COLLECTION AND STORAGE]

1) **Serum** – Use a serum separator tube (SST) and allow samples to clot for 30 minutes before centrifugation for 10 minutes at 1,000 × g. Remove serum and assay freshly prepared samples immediately or aliquot and store samples at ≤ -20°C for later use. Avoid repeated freeze-thaw cycles.

2) **Plasma** – Collect plasma using EDTA, citrate or heparin as anticoagulant. Centrifuge at 1,000 × g within 30 minutes of collection. Assay freshly prepared samples immediately or aliquot and store samples at ≤ -20°C for later use. Avoid repeated freeze-thaw cycles.

3) Other biological samples might be suitable for use in the assay. Serum and plasma were tested with this assay. Dilution with Assay Buffer (1x) may be needed.

Note: Samples containing a visible precipitate must be clarified prior to use in the assay. Do not use grossly hemolyzed or lipemic specimens.

If samples are to be run within 24 hours, they may be stored at 2 to 8°C. For longer storage, aliquot samples and store frozen at -20°C. Avoid repeated freeze-thaw cycles.

[REAGENT PREPARATION]

Bring all reagents and samples to room temperature before use.

If crystals form in the Buffer Concentrates, warm and gently stir them until completely dissolved.

Washing Buffer (1x)

Pour entire contents (50 ml) of the **Washing Buffer (20x)** into a clean 1,000 ml graduated cylinder. Bring to final volume of 1,000 ml with pure or deionized water.

Mix gently to avoid foaming.

Transfer to a clean wash bottle and store at 2 to 25°C. Washing Buffer (1x) is stable for 30 days.

Assay Buffer (1x)

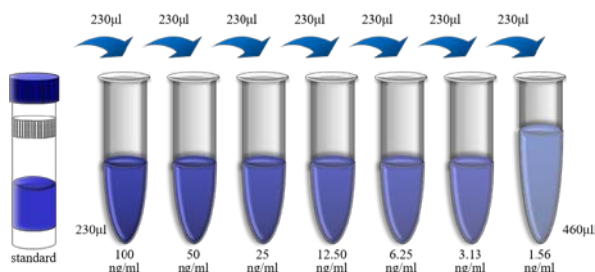
Pour the entire contents (5 ml) of the Assay Buffer (10x) into a clean 100 ml graduated cylinder. Bring to final volume of 50 ml with distilled water. Mix gently to avoid foaming.

Store at 2 to 8°C. Assay Buffer (1x) is stable for 30 days.

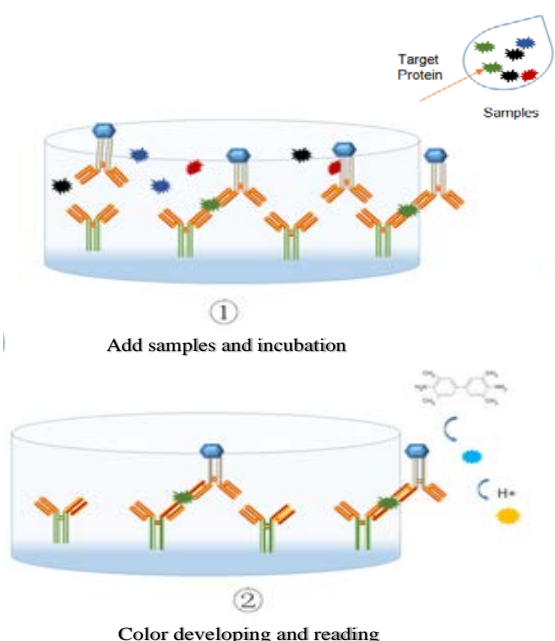
Human IgG Standard: Reconstitute **Human IgG Standard** by addition of distilled water. Reconstitution volume is stated on the label of the standard vial. Swirl or mix gently to insure complete and homogeneous solubilization (concentration of reconstituted standard = 200 ng/ml).

Allow the standard to reconstitute for 10 - 30 minutes. Mix well prior to making dilutions. Use polypropylene tubes.

- **For serum/plasma samples**, mixing concentrated human IgG standard (230 µl) with 230 µl of Standard Diluent creates the high standard (100 ng/ml). Pipette 230 µl of Standard Diluent into each tube. Use the high standard to produce a 1:1 dilution series (scheme below). Mix each tube thoroughly before the next transfer. Standard Diluent serves as the zero standard (0 pg/ml).



[ASSAY PROCEDURE]



Bring all reagents and samples to room temperature before use.

1) Prepare all reagents including microplate, samples, standards and working solution as described in the previous sections.

2) Remove excess microplate strips and return them to the foil pouch containing the desiccant pack, and reseal for further use. **In any case, avoid touching the inner surface of the microwells and gently tap the plate to ensure that the pellets on the bottom of the microwells. Do not discard the pellets.**

3) Adding Standard: Add 100 µL of 2-fold diluted Standard to Standard well. Add 100 µL of Standard Diluent to Blank well. **The standards/samples can be added directly from the middle opening of the plate adhesive film.**

4) Adding Samples: Add 100 µl of prediluted sample to the sample well.

5) Incubation: Incubate at 37°C for 1 hour, or at room temperature (25°C ±3°C) for 2 hours, on a microplate shaker set at 300-500 rpm.

6) Washing: Removing the plate adhesive film. Aspirate each well and wash by filling each well with 300µL of Washing Buffer (1x), repeating the process 3 times for a total four washes with 60 seconds interval. Complete removal of liquid at each step is essential to good performance. After the last wash, remove any remaining Wash Buffer by aspirating or decanting. Invert the plate and blot it against clean

paper towels.

7) Adding Substrate Solution: Add 100 µL of Substrate Solution to each well. Incubate for 10±5 minutes at room temperature (25±3°C). **Protect from light.**

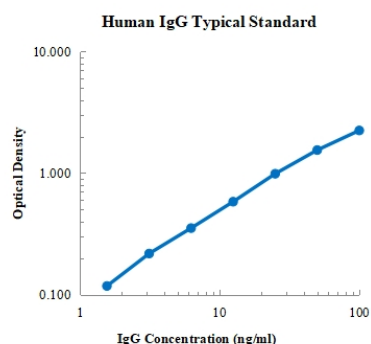
8) Stopping: Add 100 µL of Stop Solution to each well. The color will turn yellow. If the color in the well is green or if the color change does not appear uniform, gently tap the plate to ensure thorough mixing.

9) Reading: Measure the optical density value within 30 minutes by microplate reader set to 450 nm. If wavelength correction is available, set to 570 nm or 630 nm. If wavelength correction is not available, subtract readings at 570 nm or 630 nm from the readings at 450 nm. This subtraction will correct for optical imperfections in the plate. Reading directly at 450 nm without correction may generate higher concentration than true value.

[TYPICAL DATA]

A standard curve must be run within each assay. The following standard curve is provided for demonstration only.

ng/mL	O.D.	Average	Corrected
0.00	0.059	0.056	0.058
1.56	0.176	0.174	0.175
3.125	0.281	0.270	0.276
6.25	0.404	0.417	0.411
12.50	0.654	0.625	0.640
25.00	1.053	1.037	1.045
50.00	1.576	1.633	1.605
100.00	2.362	2.236	2.299



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