

Version 2a Last updated 10 December 2024

# ab273151

## Human IgG ELISA kit - 30 minutes

View ab273151

Human IgG ELISA kit - 30 minutes datasheet:

[www.abcam.com/ab273151](http://www.abcam.com/ab273151)

(use [www.abcam.cn/ab273151](http://www.abcam.cn/ab273151) for China, or [www.abcam.co.jp/ab273151](http://www.abcam.co.jp/ab273151) for Japan)

For characterizing Human IgG in cell culture supernatants and serum.

This product is for research use only and is not intended for diagnostic use.

## Table of Contents

1. Overview	1
2. Protocol Summary	2
3. Precautions	3
4. Storage and Stability	3
5. Limitations	4
6. Materials Supplied	4
7. Materials Required, Not Supplied	5
8. Technical Hints	6
9. Reagent Preparation	7
10. Sample Preparation	8
11. Assay Procedure	9
12. Calculations	10
13. Typical Data	11
14. Performance Characteristics	12
15. Notes	13

## Technical Support

## 1. Overview

The Human IgG quantification Kit (ab273151) provides a rapid and easy method (one step ELISA) for the quantitative determination of human IgG in cell culture supernatant and serum. The kit includes ready-to-use reagents necessary to analyze 89 samples in less than 30 minutes.

A polyclonal antibody specific to the gamma heavy chain of human IgG is pre-coated onto microwells. Samples and standards are pipetted into microwells and human IgG present in the sample are bound by the capture antibody. Then, a HRP (horseradish peroxidase) conjugated anti-human IgG (H+L) antibody is pipetted and incubated simultaneously with samples. After washing microwells in order to remove any non specific binding, the ready to use substrate solution (TMB) is added to microwells and color develops proportionally to the amount of human IgG in the sample. Color development is then stopped by addition of stop solution. Absorbance is measured at 450 nm.

## 2. Protocol Summary

Prepare all reagents and samples as instructed



Add 20  $\mu\text{L}$  of sample to each well of the strip



Immediately add 100  $\mu\text{L}$  of peroxidase conjugated anti-Human IgG to each well. Incubate for 15 mins



Remove solution and wash three times in wash solution



Add TMB substrate to each well (100  $\mu\text{L}$ )



After 10 minutes add 100  $\mu\text{L}$  Stop solution



Results can be directly seen or read at 450nm and 620nm.

### 3. Precautions

**Please read these instructions carefully prior to beginning the assay.**

- All kit components have been formulated and quality control tested to function successfully as a kit.
- We understand that, occasionally, experimental protocols might need to be modified to meet unique experimental circumstances. However, we cannot guarantee the performance of the product outside the conditions detailed in this protocol booklet.
- Reagents should be treated as possible mutagens and should be handled with care and disposed of properly. Please review the Safety Datasheet (SDS) provided with the product for information on the specific components.
- Observe good laboratory practices. Gloves, lab coat, and protective eyewear should always be worn. Never pipet by mouth. Do not eat, drink or smoke in the laboratory areas.
- All biological materials should be treated as potentially hazardous and handled as such. They should be disposed of in accordance with established safety procedures.

### 4. Storage and Stability

**Store kit at 4°C immediately upon receipt. Kit has a storage time of 12 months from receipt.**

Refer to list of materials supplied for storage conditions of individual components. Observe the storage conditions for individual prepared components in the Materials Supplied section.

## 5. Limitations

- Assay kit intended for research use only. Not for use in diagnostic procedures.
- Do not mix or substitute reagents or materials from other kit lots or vendors. Kits are QC tested as a set of components and performance cannot be guaranteed if utilized separately or substituted.

## 6. Materials Supplied

Item	1 x96 tests	10 X 96 tests	Storage Condition
Pre-coated microwells strips	12 strips of 8 microwells	120 strips of 8 microwells	+4°C
Sample Diluent	30 mL	500 mL	+4°C
Detection antibody	12 mL	120 mL	+4°C
TMB Substrate	12 mL	120mL	+4°C
Stop Solution	12 mL	120 mL	+4°C
Human IgG standards 0 – 16 – 62 – 125 – 250 – 500 – 1000 ng/ml	7 X 0.3 mL	7 X 1 mL	+4°C

**Note:** This ELISA kit will soon contain the “Easy View” colored reagents. The Standard diluent buffer will now be red, and the Streptavidin-HRP Diluent will be green. Please note that while stock lasts you may still

receive colorless diluents. This change does not impact the results provided by the kit or the assay procedure.

## **7. Materials Required, Not Supplied**

These materials are not included in the kit, but will be required to successfully perform this assay:

- ELISA plate washer
- Wash solution (H<sub>2</sub>O, 0.05% Tween 20)
- Standard microplate reader - capable of reading absorbance at 450 nm and 620nm.

## 8. Technical Hints

- This kit is sold based on number of tests. A 'test' simply refers to a single assay well. The number of wells that contain sample, control or standard will vary by product. Review the protocol completely to confirm this kit meets your requirements. Please contact our Technical Support staff with any questions.
- Pre-rinse the pipette tip with the reagent, use fresh pipette tips for each sample and reagent.
- Pipette samples to the bottom of the wells.
- Add the reagents to the side of the tube to avoid contamination.
- Some Solutions supplied in this kit are caustic; care should be taken with their use.

## 9. Reagent Preparation

- Equilibrate all reagents to room temperature (25°C or 37°C) prior to use. The kit contains enough reagents for 100 assays.

All reagents are supplied ready to use.

## 10. Sample Preparation

Dilute the samples in dilution buffer. Recommended dilution factor are indicated in the following table:

Samples	Recommended dilutions
Cell culture supernatant	1/40
Miniperm, CELLline supernatant	1/1000
Human Serum	1/20,000

## 11. Assay Procedure

- Equilibrate all prepared reagents to desired assay temperature prior to use.
- 11.1 Transfer 20  $\mu\text{L}$  of diluted samples in each well of the strip
- 11.2 Immediately add 100  $\mu\text{L}$  of Detection antibody to each well. Mix gently until obtaining a homogeneous purple color.
- 11.3 Incubate at room temperature for 15 minutes.
- 11.4 After incubation, remove the solution and wash the wells three times with 300  $\mu\text{L}$  of wash solution.
- 11.5 Add 100  $\mu\text{L}$  of TMB substrate to each well. Tap plate briefly to mix. Incubate for 10 minutes at room temperature.
- 11.6 After incubation add 100  $\mu\text{L}$  of stop solution to each well.
- 11.7 Results can be seen directly or read the absorbance with a microplate reader at 450 nm and 620 nm.

**$\Delta$ Note: Validation of the assay:** The mean absorbance of the 0 ng/ml standard should be below 0.1 AU (absorbance unit). Maximal absorbance (1000 ng/ml standard) should be around 1.6 to 2.2 AU, depending of the operating temperature

## 12. Calculations

12.1. Calculate the average absorbance values for each standard.

12.2. Generate a linear standard curve by plotting the average absorbance of each standard on the vertical axis versus the corresponding standard concentration on the horizontal axis.

12.3. The Human IgG concentration in the sample can be calculated by interpolation between standards points on the curve.

**ΔNote:** It is recommended to repeat the assay at a different dilution factor in the following

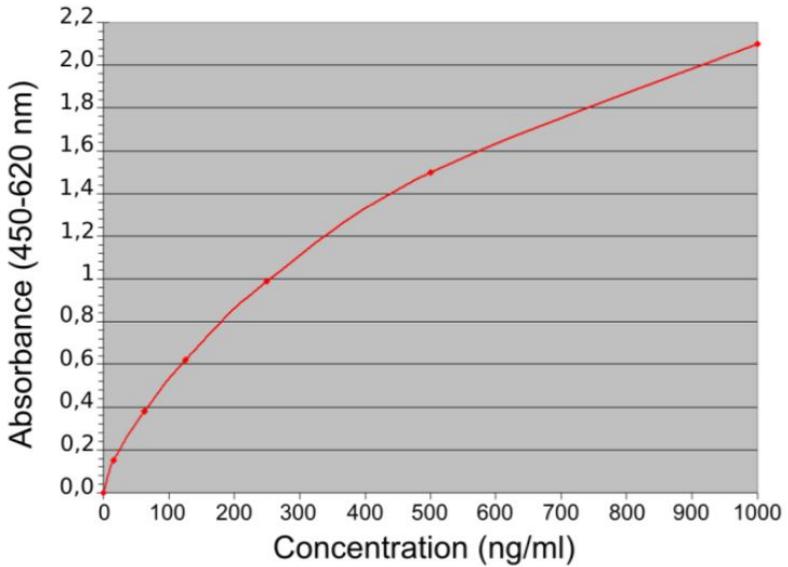
cases:

- If the sample absorbance value is below the first standard.
- If the absorbance value is equivalent or higher than the 1000 ng/ml standard.

**Hook effect:** A hook effect may be observed at IgG concentrations above 5000 ng/ml. Serial dilution of the sample is then recommended

### 13. Typical Data

Typical standard curve – data provided for demonstration purposes only. A new standard curve must be generated for each assay



performed.

Figure 1. Example of Human IgG quantitative kit Standard curve

## 14. Performance Characteristics

### - Precision

Intra-Assay				
Sample	Dilution	Mean Concentration (ng/ml)	SD (%)	No of measures
A	1/100	6.8	10.12	10
B	1/100	13.4	6.13	10
C	1/100	13.9	5.71	10
D	1/100	18.8	5.19	10
E	1/100	23.5	6.5	10
F	1/100	26.9	5.42	10
G	1/100	32.7	8.84	10

Inter-Assay			
Sample	Dilution	SD (%)	No of measures
Supernatant	1/250	7.0	30
Supernatant	1/500	4.6	30
Supernatant	1/1000	2.4	30

## 15. Notes

## Technical Support

Copyright © 2024 Abcam, All Rights Reserved. The Abcam logo is a registered trademark. All information / detail is correct at time of going to print.

**For all technical or commercial enquiries please go to:**

[www.abcam.com/contactus](http://www.abcam.com/contactus)

[www.abcam.cn/contactus](http://www.abcam.cn/contactus) (China)

[www.abcam.co.jp/contactus](http://www.abcam.co.jp/contactus) (Japan)