

## Product datasheet

### Human Albumin ELISA Kit ab179887

Recombinant SimpleStep ELISA<sup>®</sup>

★★★★☆ [1 Abreviews](#) [15 References](#) [12 Images](#)

#### Overview

**Product name** Human Albumin ELISA Kit

**Detection method** Colorimetric

#### Precision

Intra-assay

Sample	n	Mean	SD	CV%
Serum	8			5.2%

Inter-assay

Sample	n	Mean	SD	CV%
Serum	3			7.6%

**Sample type**

Cell culture supernatant, Serum, Hep Plasma, EDTA Plasma, Cit plasma

**Assay type**

Sandwich (quantitative)

**Sensitivity**

0.1 ng/ml

**Range**

0.7 ng/ml - 45 ng/ml

#### Recovery

Sample specific recovery

Sample type	Average %	Range
Cell culture supernatant	104	104% - 105%
Serum	100	92% - 110%
Hep Plasma	98	89% - 105%
EDTA Plasma	104	97% - 109%
Cit plasma	101	100% - 103%

**Assay time**

1h 30m

**Assay duration**

One step assay

## Species reactivity

**Reacts with:** Human, Cynomolgus monkey

## Product overview

**As of December 12, 2019 Human Albumin ELISA kit has been re-developed with new recombinant monoclonal antibodies to provide improved performance and consistency.**

Human Albumin ELISA kit (ab179887) is a single-wash 90 min sandwich ELISA designed for the quantitative measurement of Albumin protein in human serum and plasma. It uses our proprietary SimpleStep ELISA® technology. Quantitate human Albumin with 100 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.

## ASSAY SPECIFICITY

This kit recognizes native human Albumin protein in serum, plasma, and cell culture supernatant samples only. Urine, saliva, cell and tissue extract samples have not been tested with this kit.

## SPECIES REACTIVITY

**This kit recognizes human Albumin and Cynomolgus monkey albumin protein. If you require a kit that is human-specific, please see [ab227933](#).**

Other species reactivity was determined by measuring 1:4,000,000 serum samples of various species, interpolating the protein concentrations from the human standard curve, and expressing the interpolated concentrations as a percentage of the protein concentration in human serum assayed at the same dilution.

Reactivity < 3% was determined for the following species: Mouse, rat, Cow.

## Notes

Albumin (ALB), the main protein of plasma, has a good binding capacity for water, Ca<sup>2+</sup>, Na<sup>+</sup>, K<sup>+</sup>, fatty acids, hormones, bilirubin and drugs. Its main function is the regulation of the colloidal osmotic pressure of blood. It also serves as a major zinc transporter in plasma, typically binds about 80% of all plasma zinc.

## Platform

Microplate

## Properties

**Storage instructions**

Store at +4°C. Please refer to protocols.

Components	1 x 96 tests	1 x 384 tests
10X Human Albumin Capture Antibody	1 x 600µl	1 x 600µl
10X Human Albumin Detector Antibody	1 x 600µl	1 x 600µl
10X Wash Buffer PT (ab206977)	1 x 20ml	1 x 20ml
384 well CaptSure™ microplates	0 x 0 unit	1 unit
Antibody Diluent 4BI	1 x 6ml	1 x 6ml
Native Human Serum Albumin protein (Lyophilized) (ab205808)	2 vials	2 vials
Plate Seals	1 unit	1 unit
Sample Diluent NS (ab193972)	2 x 50ml	1 x 250ml
SimpleStep Pre-Coated 96-Well Microplate (ab206978)	1 unit	0 x 0 unit
Stop Solution	1 x 12ml	2 x 12ml
TMB Development Solution	1 x 12ml	2 x 12ml

**Function**

Serum albumin, the main protein of plasma, has a good binding capacity for water, Ca(2+), Na(+), K(+), fatty acids, hormones, bilirubin and drugs. Its main function is the regulation of the colloidal osmotic pressure of blood. Major zinc transporter in plasma, typically binds about 80% of all plasma zinc.

**Tissue specificity**

Plasma.

**Involvement in disease**

Defects in ALB are a cause of familial dysalbuminemic hyperthyroxinemia (FDH) [MIM:103600]. FDH is a form of euthyroid hyperthyroxinemia that is due to increased affinity of ALB for T(4). It is the most common cause of inherited euthyroid hyperthyroxinemia in Caucasian population.

**Sequence similarities**

Belongs to the ALB/AFP/VDB family.  
Contains 3 albumin domains.

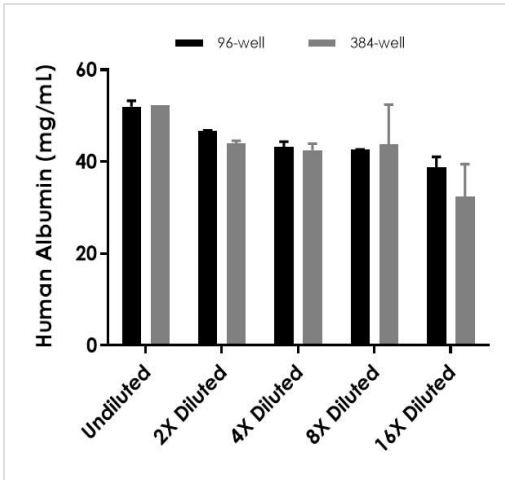
**Post-translational modifications**

Kenitra variant is partially O-glycosylated at Thr-620. It has two new disulfide bonds Cys-600 to Cys-602 and Cys-601 to Cys-606.  
Glycated in diabetic patients.  
Phosphorylation sites are present in the extracellular medium.  
Acetylated on Lys-223 by acetylsalicylic acid.

**Cellular localization**

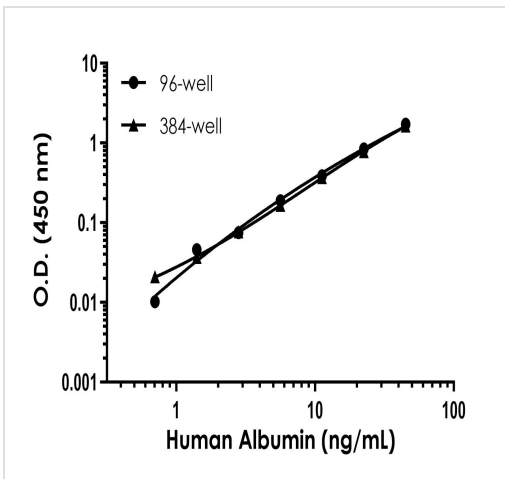
Secreted.

**Images**



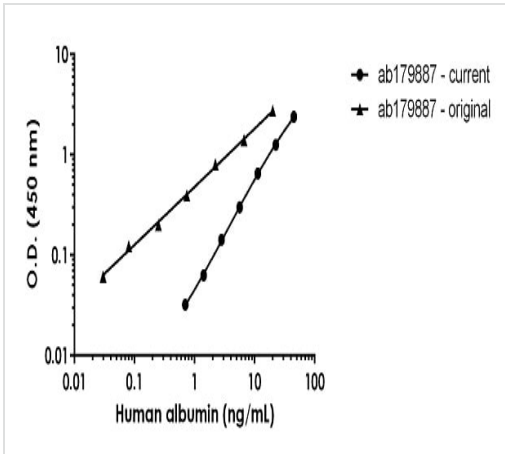
Interpolated concentrations of human Albumin in serum in 96-well vs. 384-well plates.

Interpolated concentration of native Albumin was measured in duplicate at different sample concentrations in 96-well vs. 384-well plates. Undiluted samples are human serum 1:1,000,000. The interpolated dilution factor corrected values (to neat) are plotted (mean +/- SD, n=2). Sample dilutions are made in Sample Diluent NS.



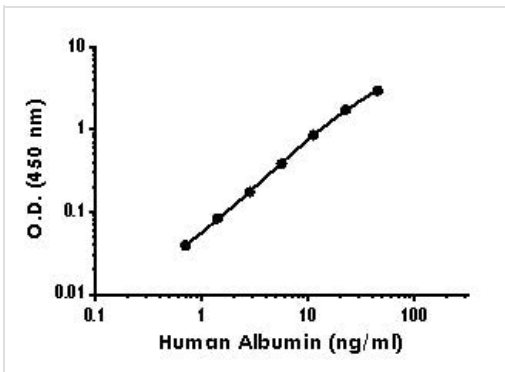
Example of human Albumin standard curve in Sample Diluent NS in 96-well vs. 384-well plate.

Example of human Albumin standard curve in 96-well vs. 384-well plate. Background-subtracted data values (mean +/- SD) are graphed.



Human Albumin standard curve comparison

Standard Curve comparison between the original human Albumin SimpleStep ELISA kit current human Albumin SimpleStep ELISA kit.



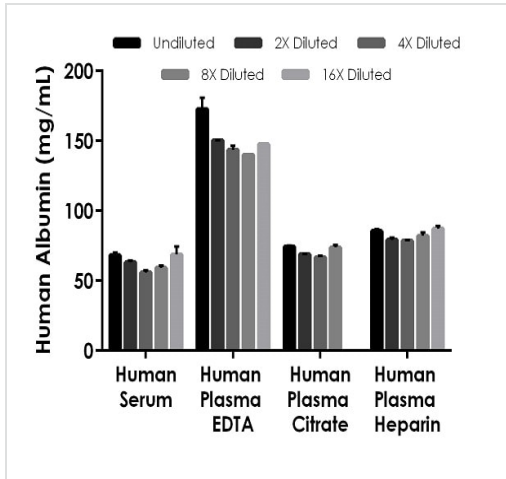
Standard curve

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

Standard Curve Measurements			
Concentration (ng/mL)	O.D 450 nm		Mean O.D
	1	2	
0	0.102	0.102	0.102
0.70	0.135	0.133	0.134
1.41	0.169	0.161	0.165
2.81	0.255	0.234	0.245
5.63	0.414	0.389	0.402
11.25	0.779	0.728	0.753
22.5	1.348	1.369	1.359
45	2.537	2.439	2.488

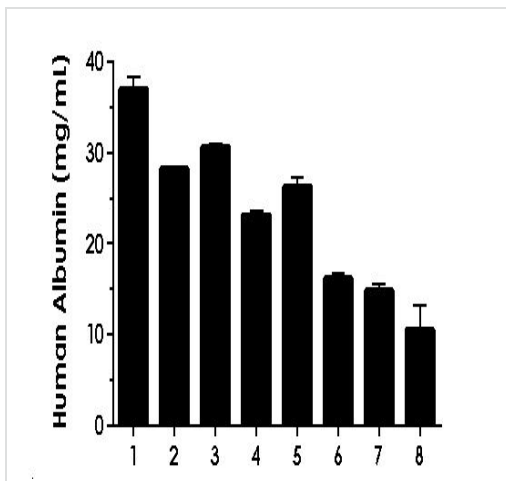
Standard curve

Example of human Albumin standard curve in Sample Diluent NS. The Albumin standard curve was prepared as described. Raw data values are shown in the table. Background-subtracted data values (mean +/- SD) are graphed.



Interpolated concentrations of native Albumin in human serum, plasma and cell culture supernatant samples.

The concentrations of Albumin were measured in duplicates, interpolated from the Albumin standard curves and corrected for sample dilution. Undiluted samples are as follows: serum 1:4,000,000, plasma (EDTA) 1:4,000,000, plasma (citrate) 1:8,000,000, and plasma (heparin) 1:8,000,000. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean Albumin concentration was determined to be 31.5 mg/mL in serum, 75.4 mg/mL in plasma (EDTA), 35.5 mg/mL in plasma (citrate) and 41.3 mg/mL in plasma (heparin).



Serum from eight individual healthy human female donors was measured in duplicate.

Interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean Albumin concentration was determined to be 23.4 mg/mL with a range of 10.5 – 37.1 mg/mL.

Dilution Factor	Interpolated value	10% RPMI 1640 with 10% FBS
Undiluted	ng/mL	21.4
	% Expected value	100
2	ng/mL	10.1
	% Expected value	94
4	ng/mL	5.1
	% Expected value	95
8	ng/mL	2.7
	% Expected value	98
16	ng/mL	1.3
	% Expected value	97

Linearity of dilution for spiked albumin

Linearity of dilution is determined based on interpolated values from the standard curve. Linearity of dilution defines a sample concentration interval in which interpolated target concentrations are directly proportional to sample dilution.

Spiked Albumin was measured in the following biological samples in a 2-fold dilution series. Sample dilutions are made in Sample Diluent NS.

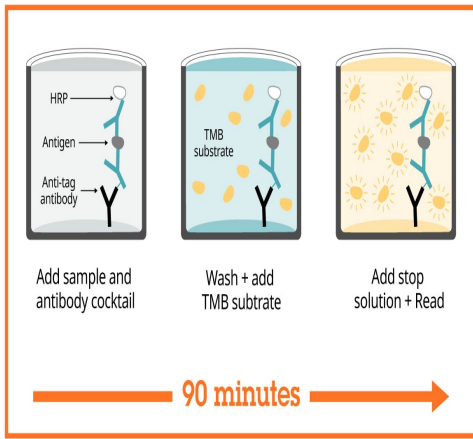
Dilution Factor	Interpolated value	1:4,000,000 Human Serum	1:8,000,000 Human Plasma (Citrate)	1:4,000,000 Human Plasma (EDTA)	1:8,000,000 Human Plasma (Heparin)
Undiluted	ng/mL	17.0	9.3	21.6	10.7
	% Expected value	100	100	100	100
2	ng/mL	7.9	4.3	9.4	5.0
	% Expected value	93	93	87	93
4	ng/mL	3.5	2.1	4.5	2.5
	% Expected value	82	90	83	92
8	ng/mL	1.9	1.2	2.2	1.3
	% Expected value	89	103	81	96
16	ng/mL	1.1	NL	1.2	0.7
	% Expected value	104		89	105

NL - Non-Linear

Linearity of dilution for albumin

Linearity of dilution is determined based on interpolated values from the standard curve. Linearity of dilution defines a sample concentration interval in which interpolated target concentrations are directly proportional to sample dilution.

Native Albumin was measured in the following biological samples in a 2-fold dilution series. Sample dilutions are made in Sample Diluent NS.



Sandwich ELISA - Human Albumin ELISA Kit  
(ab179887)

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.

Powered by  
recombinant antibodies

-  **Research with confidence**  
Consistent and reproducible results
-  **Long-term and scalable supply**  
Recombinant technology
-  **Success from the first experiment**  
Confirmed specificity
-  **Ethical standards compliant**  
Animal-free production

Sandwich ELISA - Human Albumin ELISA Kit  
(ab179887)

To learn more about the advantages of recombinant antibodies see [here](#).

Get more done with  
SimpleStep ELISA

-  **Easy to use**  
Single-wash 90-minute protocol
-  **Flexible**  
Matched antibody pairs available
-  **Precision antibodies**  
High sensitivity, specificity and reproducibility
-  **Scalable**  
Now in 10-pack and 384-well formats

Sandwich ELISA - Human Albumin ELISA Kit  
(ab179887)

To learn more about the advantages of SimpleStep ELISA<sup>®</sup> kits see [here](#).



**Please note:** All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

### **Our Abpromise to you: Quality guaranteed and expert technical support**

---

- Replacement or refund for products not performing as stated on the datasheet
- Valid for 12 months from date of delivery
- Response to your inquiry within 24 hours
  
- We provide support in Chinese, English, French, German, Japanese and Spanish
- Extensive multi-media technical resources to help you
- We investigate all quality concerns to ensure our products perform to the highest standards

If the product does not perform as described on this datasheet, we will offer a refund or replacement. For full details of the Abpromise, please visit <https://www.abcam.com/abpromise> or contact our technical team.

### **Terms and conditions**

---

- Guarantee only valid for products bought direct from Abcam or one of our authorized distributors