

# Human Apolipoprotein B ELISA Kit ab190806

Recombinant SimpleStep ELISA<sup>®</sup>

[9 References](#) [8 Images](#)

### Overview

**Product name** Human Apolipoprotein B ELISA Kit

**Detection method** Colorimetric

**Precision**

Intra-assay

Sample	n	Mean	SD	CV%
Human serum	8			5.9%

Inter-assay

Sample	n	Mean	SD	CV%
Human serum	3			2.4%

**Sample type** Serum, Hep Plasma, EDTA Plasma, Cit plasma

**Assay type** Sandwich (quantitative)

**Sensitivity** 5.28 ng/ml

**Range** 18.75 ng/ml - 1200 ng/ml

**Recovery**

Sample specific recovery

Sample type	Average %	Range
Serum	84	81% - 87%
Hep Plasma	114	104% - 120%
EDTA Plasma	90	85% - 98%
Cit plasma	86	81% - 97%

**Assay time** 1h 30m

**Assay duration** One step assay

**Species reactivity** **Reacts with:** Human

## Product overview

**As of December 5, 2019, Human Apolipoprotein B (APOB) ELISA kit has been re-developed. We have identified new recombinant monoclonal antibodies to provide improved performance and consistency.**

Human Apolipoprotein B ELISA Kit (ab190806) is a single-wash 90 min sandwich ELISA designed for the quantitative measurement of Apolipoprotein B protein in cit plasma, edta plasma, hep plasma, and serum. It uses our proprietary SimpleStep ELISA® technology. Quantitate Human Apolipoprotein B with 5.28 ng/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.

## Notes

Apolipoproteins are proteins that bind lipids to form lipoproteins, which carry fats and cholesterol in the bloodstream. Apolipoproteins provide structural support to these lipoproteins, may act as ligands for specific cell surface receptors or may modulate the activity of metabolic enzymes that act on lipoproteins. A major class of apolipoproteins is ApoB, which is found in two forms: ApoB-100 (550 kDa) and ApoB-48 (264 kDa). ApoB-48 is made from the N-terminal 48% of the Apolipoprotein B-100 protein due to a post-transcriptional mRNA editing by the ApoB mRNA editing enzyme ApoBec1. ApoBec1 causes a C to U transition, replacing a CAA glutamine encoding codon for a UAA stop codon and generating ApoB-48. ApoBec1 is expressed in the intestine but not the liver, thus ApoB-48 is secreted by the intestine to become the building block of chylomicrons, while ApoB-100 is secreted by the liver to become a component of very low-density lipoproteins (VLDLs), intermediate-density lipoproteins (IDLs), and low-density lipoproteins (LDLs). Importantly, ApoB is also post-translationally palmitoylated; palmitoylation is necessary for proper assembly of lipoproteins (including proper assembly of the hydrophobic core). Furthermore, ApoB-100 operates on the surface of LDLs to allow binding to the LDL receptor and transport for breakdown of LDLs.

Mutations in the *Apolipoprotein B* gene can cause several diseases. First, in familial hypobetalipoproteinemia (FHBL), mutations in the *Apolipoprotein B* gene cause production of abnormally short lengths of ApoB protein, lowering the amount of lipoproteins and hence decreasing the body's capacity to transport and absorb fat and fat-soluble vitamins. Second, in a form of inherited hypercholesterolemia called familial defective ApoB-100 (FDB), mutations in the *Apolipoprotein B* gene prevent LDLs from effectively binding to their receptors. As a result, fewer LDLs are removed from the blood, leading to hypercholesterolemia, distribution and buildup of cholesterol into tissues such as the skin and arteries, and an increased risk of coronary artery disease (CAD).

## Platform

Microplate

## Properties

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

Components	1 x 96 tests
10X Human Apolipoprotein B (ApoB) Capture Antibody	1 x 600µl
10X Human Apolipoprotein B (ApoB) Detector Antibody	1 x 600µl
10X Wash Buffer PT (ab206977)	1 x 20ml
50X Cell Extraction Enhancer Solution (ab193971)	1 x 1ml
Antibody Diluent 5BI	1 x 6ml
Denaturant	1 x 500µl
Human Apolipoprotein B (ApoB) Lyophilized Recombinant Protein	2 vials
Plate Seals	1 unit
Sample Diluent NS (ab193972)	1 x 50ml
SimpleStep Pre-Coated 96-Well Microplate (ab206978)	1 unit
Stop Solution	1 x 12ml
TMB Development Solution	1 x 12ml

**Function** Apolipoprotein B is a major protein constituent of chylomicrons (apo B-48), LDL (apo B-100) and VLDL (apo B-100). Apo B-100 functions as a recognition signal for the cellular binding and internalization of LDL particles by the apoB/E receptor.

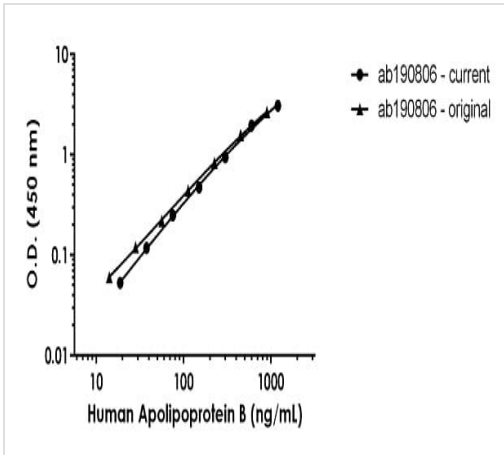
**Involvement in disease** Hypobetalipoproteinemia, familial, 1  
Familial ligand-defective apolipoprotein B-100  
Defects in APOB associated with defects in other genes (polygenic) can contribute to hypocholesterolemia.

**Sequence similarities** Contains 1 vitellogenin domain.

**Post-translational modifications** Palmitoylated; structural requirement for proper assembly of the hydrophobic core of the lipoprotein particle.

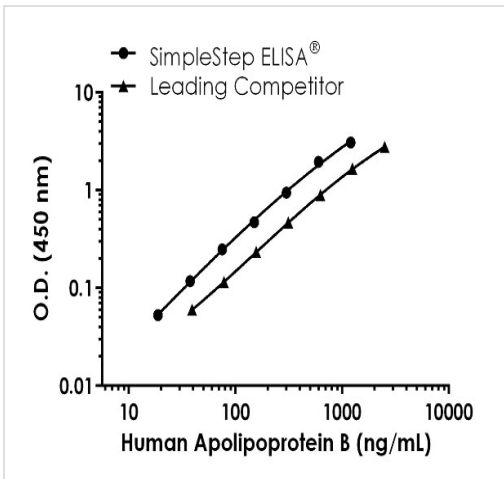
**Cellular localization** Cytoplasm. Secreted.

## Images



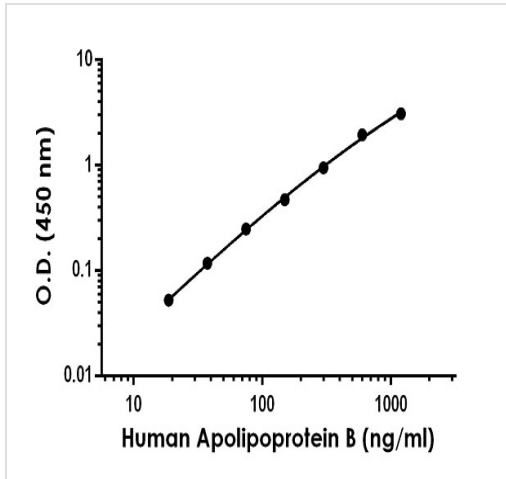
Standard Curve comparison between the original human MMP3 SimpleStep ELISA kit and current human MMP3 SimpleStep ELISA kit.

Human Apolipoprotein B comparison



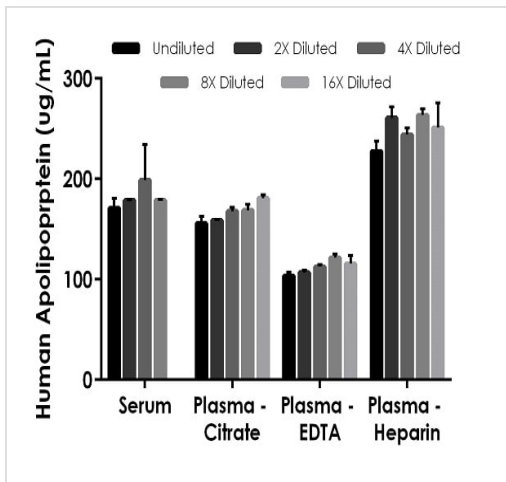
Standard Curve comparison between human Apolipoprotein B SimpleStep ELISA kit and traditional ELISA kit from leading competitor. SimpleStep ELISA kit shows increased sensitivity.

Human Apolipoprotein B standard curve comparison



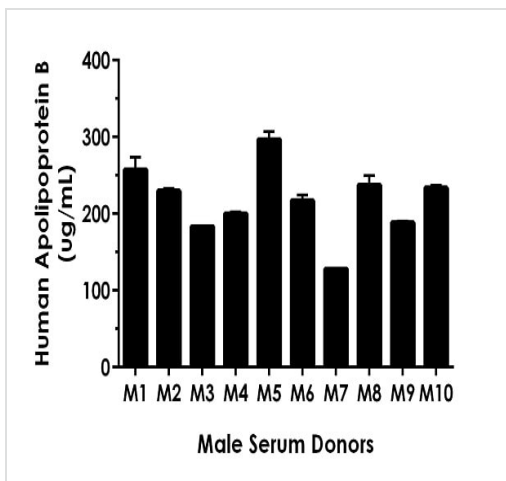
Example of human Apolipoprotein B standard curve in Sample Diluent NS + 1X Enhancer.

The Apolipoprotein B standard curve was prepared as described in Section 10. Raw data values are shown in the table. Background-subtracted data values (mean +/- SD) are graphed.



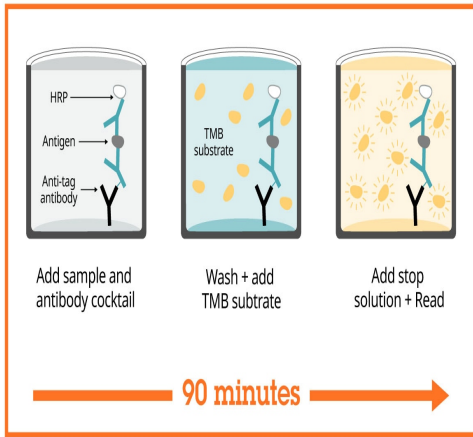
Interpolated concentrations of native Apolipoprotein B in human serum and plasma samples.

The concentrations of Apolipoprotein B were measured in duplicates, interpolated from the Apolipoprotein B standard curves and corrected for sample dilution. Undiluted samples are as follows: serum 0.5%, plasma (citrate) 0.5%, plasma (EDTA) 0.5%, and plasma (heparin) 0.5%. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean Apolipoprotein B concentration was determined to be 181.94 ug/mL in serum, 166.45 ug/mL in plasma (citrate) and 112.11 ug/mL plasma (EDTA), and 249.45 ug/mL plasma (heparin).



0.5% Serum from ten individual healthy human male donors was measured in duplicate.

Interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean Apolipoprotein B concentration was determined to be 217.38 ug/mL with a range of 127.53 – 304.1 ug/mL.



Sandwich ELISA - Human Apolipoprotein B ELISA Kit (ab190806)

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 Apolipoprotein B ELISA Kit (ab190806)

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 Apolipoprotein B ELISA Kit (ab190806)

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"

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