abcam

Product datasheet

Human Apo E ELISA Kit ab233623

Recombinant SimpleStep ELISA

1 References 6 Images

Overview

Product name Human Apo E ELISA Kit

Detection method Colorimetric

Precision

Intra-assay

Sample	n	Mean	SD	CV%
Serum	3			1.6%

Inter-assay

Sample	n	Mean	SD	CV%
Serum	8			9.5%

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

Assay type Sandwich (quantitative)

Sensitivity 30.34 pg/ml

Range 62.5 pg/ml - 4000 pg/ml

Recovery

Sample specific recovery

Sample type	Average %	Range
Milk	109	95% - 119%
Serum	108	89% - 122%
Hep Plasma	114	96% - 123%
EDTA Plasma	108	100% - 117%
Cit plasma	117	106% - 125%

Assay time 1h 30m

Assay duration One step assay

Species reactivity

Reacts with: Human

Product overview

Human Apo E ELISA Kit (ab233623) is a single-wash 90 min sandwich ELISA designed for the quantitative measurement of Apo E protein in cit plasma, edta plasma, hep plasma, milk, and serum. It uses our proprietary SimpleStep ELISA® technology. Quantitate Human Apo E with 10.8 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.

Platform

Pre-coated microplate (12 x 8 well strips)

Properties

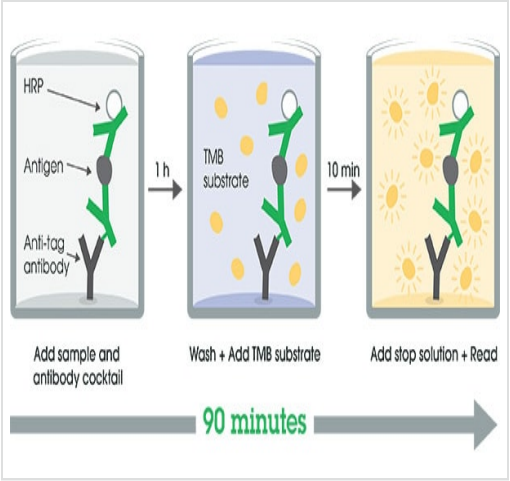
Storage instructions

Please refer to protocols.

Components	1 x 96 tests
10X Human Apo E Capture Antibody	1 x 600µl
10X Human Apo E Detector Antibody	1 x 600µl
10X Wash Buffer PT (ab206977)	1 x 20ml
50X Cell Extraction Enhancer Solution (ab193971)	1 x 1ml
Antibody Diluent 4BI	1 x 6ml
Human Apo E 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

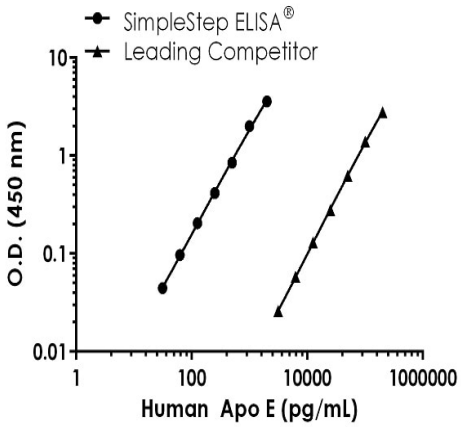
Function	Mediates the binding, internalization, and catabolism of lipoprotein particles. It can serve as a ligand for the LDL (apo B/E) receptor and for the specific apo-E receptor (chylomicron remnant) of hepatic tissues.
Tissue specificity	Occurs in all lipoprotein fractions in plasma. It constitutes 10-20% of very low density lipoproteins (VLDL) and 1-2% of high density lipoproteins (HDL). APOE is produced in most organs. Significant quantities are produced in liver, brain, spleen, lung, adrenal, ovary, kidney and muscle.
Involvement in disease	Defects in APOE are a cause of hyperlipoproteinemia type 3 (HLPP3) [MIM:107741]; also known as familial dysbetalipoproteinemia. Individuals with HLPP3 are clinically characterized by xanthomas, yellowish lipid deposits in the palmar crease, or less specific on tendons and on elbows. The disorder rarely manifests before the third decade in men. In women, it is usually expressed only after the menopause. The vast majority of the patients are homozygous for APOE*2 alleles. More severe cases of HLPP3 have also been observed in individuals heterozygous for rare APOE variants. The influence of APOE on lipid levels is often suggested to have major implications for the risk of coronary artery disease (CAD). Individuals carrying the common APOE*4 variant are at higher risk of CAD. Genetic variations in APOE are associated with Alzheimer disease type 2 (AD2) [MIM:104310]. It is a late-onset neurodegenerative disorder characterized by progressive dementia, loss of cognitive abilities, and deposition of fibrillar amyloid proteins as intraneuronal neurofibrillary tangles, extracellular amyloid plaques and vascular amyloid deposits. The major constituent of these plaques is the neurotoxic amyloid-beta-APP 40-42 peptide (s), derived proteolytically from the transmembrane precursor protein APP by sequential secretase processing. The cytotoxic C-terminal fragments (CTFs) and the caspase-cleaved products such as C31 derived from APP, are also implicated in neuronal death. Note=The APOE*4 allele is genetically associated with the common late onset familial and sporadic forms of Alzheimer disease. Risk for AD increased from 20% to 90% and mean age at onset decreased from 84 to 68 years with increasing number of APOE*4 alleles in 42 families with late onset AD. Thus APOE*4 gene dose is a major risk factor for late onset AD and, in these families, homozygosity for APOE*4 was virtually sufficient to cause AD by age 80. The mechanism by which APOE*4 participates in pathogenesis is not known. Defects in APOE are a cause of sea-blue histiocyte disease (SBHD) [MIM:269600]; also known as sea-blue histiocytosis. This disorder is characterized by splenomegaly, mild thrombocytopenia and, in the bone marrow, numerous histiocytes containing cytoplasmic granules which stain bright blue with the usual hematologic stains. The syndrome is the consequence of an inherited metabolic defect analogous to Gaucher disease and other sphingolipidoses. Defects in APOE are a cause of lipoprotein glomerulopathy (LPG) [MIM:611771]. LPG is an uncommon kidney disease characterized by proteinuria, progressive kidney failure, and distinctive lipoprotein thrombi in glomerular capillaries. It mainly affects people of Japanese and Chinese origin. The disorder has rarely been described in Caucasians.
Sequence similarities	Belongs to the apolipoprotein A1/A4/E family.
Post-translational modifications	Synthesized with the sialic acid attached by O-glycosidic linkage and is subsequently desialylated in plasma. O-glycosylated with core 1 or possibly core 8 glycans. Thr-307 is a minor glycosylation site compared to Ser-308. Glycated in plasma VLDL of normal subjects, and of hyperglycemic diabetic patients at a higher level (2-3 fold). Phosphorylation sites are present in the extracelllular medium.
Cellular localization	Secreted.

Images



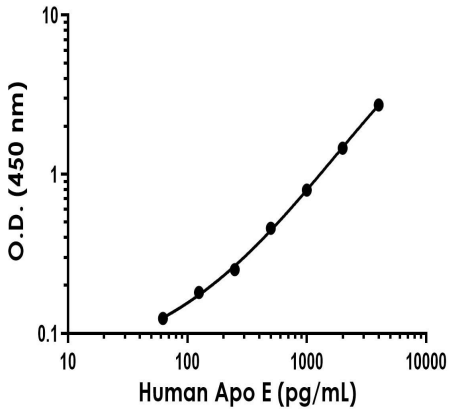
SimpleStep ELISA technology allows the formation of the antibody-antigen complex in one single step, reducing assay time to 90 minutes. Add samples or standards and antibody mix to wells all at once, incubate, wash, and add your final substrate. See protocol for a detailed step-by-step guide.

Other - Human Apo E ELISA Kit (ab233623)



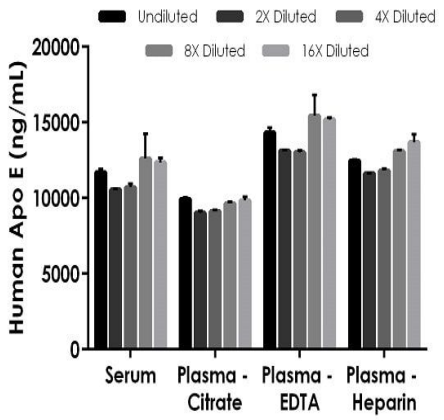
Standard curve comparison between Human Apo E SimpleStep ELISA® kit and traditional ELISA kit from leading competitor. SimpleStep ELISA kit shows increased sensitivity.

Human Apo E Competitor standard curve comparison



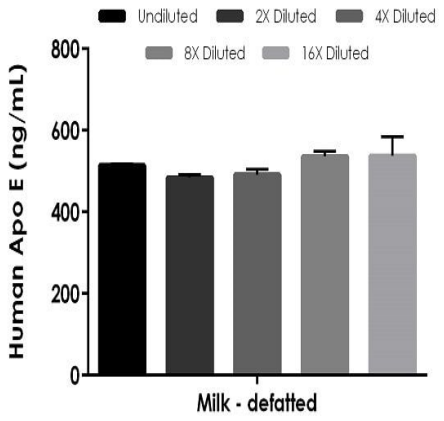
Background-subtracted data values (mean +/- SD) are graphed.

Example of human Apo E standard curve in Sample Diluent NS + Enhancer



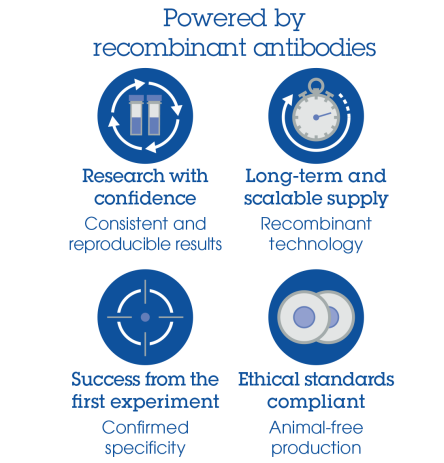
Interpolated concentrations of native Apo E in human serum and plasma samples

The concentrations of Apo E were measured in duplicates, interpolated from the Apo E standard curves and corrected for sample dilution. Undiluted samples are as follows: serum 1:8000, plasma (citrate) 1:8000, plasma (EDTA) 1:10000, and plasma (heparin) 1:8000. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean Apo E concentration was determined to be 11588.11 ng/mL in serum, 9516.25 pg/mL in plasma (citrate), 14224.65 ng/mL in plasma (EDTA), and 12539.13 ng/mL in plasma (heparin).



Interpolated concentrations of native Apo E in human milk sample

The concentrations of Apo E were measured in duplicates, interpolated from the Apo E standard curve and corrected for sample dilution. Undiluted sample is milk 1:400. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean Apo E concentration was determined to be 512.93 ng/mL.



Sandwich ELISA - Human Apo E ELISA Kit (ab233623)

To learn more about the advantages of recombinant antibodies see **here**.

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