abcam

Product datasheet

Human C-Peptide ELISA Kit ab260064

Recombinant SimpleStep ELISA

9 Images

Overview

Product name Human C-Peptide ELISA Kit

Detection method Colorimetric

Precision

Intra-assay

Sample	n	Mean	SD	CV%
Serum	8			2.6%

Inter-assay

Sample	n	Mean	SD	CV%
Serum	3			3.7%

Sample type Urine, Serum, Cell culture media, Hep Plasma

Assay type Sandwich (quantitative)

Sensitivity 1.45 pg/ml

Range 3.13 pg/ml - 200 pg/ml

Recovery

Sample specific recovery

Sample type	Average %	Range
Urine	103	101% - 107%
Serum	105	100% - 110%
Cell culture media	90	88% - 92%
Hep Plasma	92	85% - 102%

Assay time 1h 30m

Assay duration One step assay

Species reactivity **Reacts with:** Human

Does not react with: Cow

Product overview

Human C-Peptide ELISA Kit (ab260064) is a single-wash 90 min sandwich ELISA designed for the quantitative measurement of C-Peptide protein in hep plasma, serum, urine, and cell culture media. It uses our proprietary SimpleStep ELISA® technology. Quantitate Human C-Peptide with 1.45 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.

Note: This kit is incompatible with plasma (citrate, EDTA) samples.

Notes

C-peptide of insulin is a cleavage product produced during processing of the insulin pro-hormone to the mature insulin molecule. Proinsulin is cleaved when it is released from the pancreas into the blood - one C-peptide for each insulin molecule. C-Peptide has been shown to bind to a variety of cell types, and *in vivo* animal diabetes models have shown positive effects on kidney and nerve function.

Platform

Pre-coated microplate (12 x 8 well strips)

Properties

Storage instructions

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

Components	1 x 96 tests	1 x 384 tests
10X Human C-Peptide Capture Antibody	1 x 600µl	1 x 600µl
10X Human C-Peptide 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
Human C-Peptide Lyophilized Recombinant Protein	2 vials	2 vials
Plate Seals	1 unit	1 vial

Components	1 x 96 tests	1 x 384 tests
Sample Diluent NS (ab193972)	1 x 12ml	1 x 50ml
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

Insulin decreases blood glucose concentration. It increases cell permeability to monosaccharides, amino acids and fatty acids. It accelerates glycolysis, the pentose phosphate cycle, and glycogen synthesis in liver.

Involvement in disease

Defects in INS are the cause of familial hyperproinsulinemia (FHPRI) [MIM:176730].
Defects in INS are a cause of diabetes mellitus insulin-dependent type 2 (IDDM2) [MIM:125852]. IDDM2 is a multifactorial disorder of glucose homeostasis that is characterized by susceptibility to ketoacidosis in the absence of insulin therapy. Clinical fetaures are polydipsia, polyphagia and polyuria which result from hyperglycemia-induced osmotic diuresis and secondary thirst. These derangements result in long-term complications that affect the eyes, kidneys, nerves, and blood vessels.
Defects in INS are a cause of diabetes mellitus permanent neonatal (PNDM) [MIM:606176]. PNDM is a rare form of diabetes distinct from childhood-onset autoimmune diabetes mellitus type 1. It is characterized by insulin-requiring hyperglycemia that is diagnosed within the first months of life. Permanent neonatal diabetes requires lifelong therapy.
Defects in INS are a cause of maturity-onset diabetes of the young type 10 (MODY10) [MIM:613370]. MODY10 is a form of diabetes that is characterized by an autosomal dominant mode of inheritance, onset in childhood or early adulthood (usually before 25 years of age), a primary defect in insulin secretion and frequent insulin-independence at the beginning of the disease.

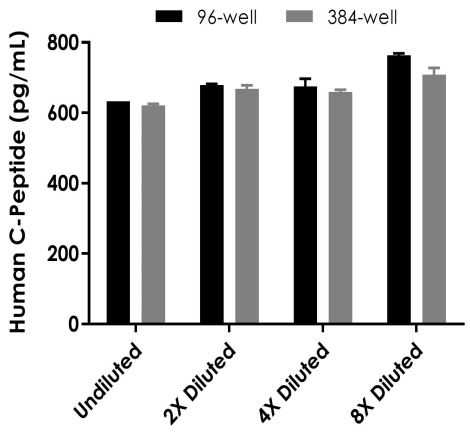
Sequence similarities

Belongs to the insulin family.

Cellular localization

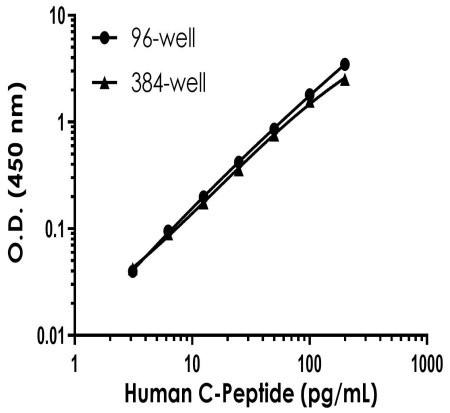
Secreted.

Images



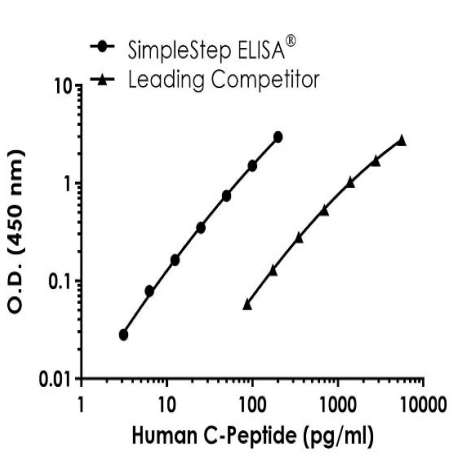
Interpolated concentrations of human C-Peptide in human serum in 96-well vs. 384-well plates.

Interpolated concentration of native C-Peptide was measured in duplicate at different sample concentrations in 96-well vs. 384-well plates. Undiluted samples are 12.5% human serum. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). Sample dilutions are made in Sample Diluent NS.



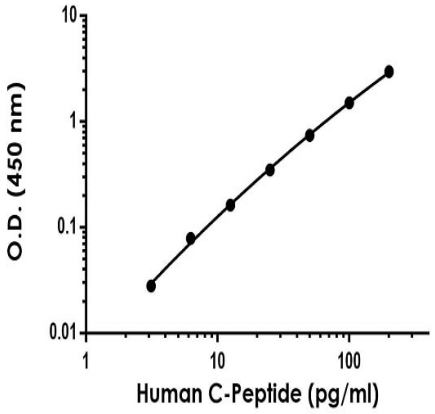
Example of human C-Peptide standard curve in Sample Diluent NS in 96-well vs. 384-well plate.

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



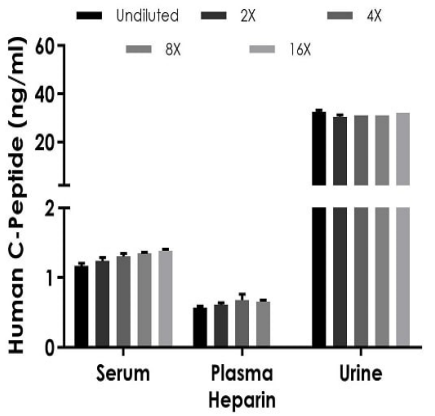
Human C-peptide standard curve comparison

Standard Curve comparison between human C-Peptide SimpleStep ELISA kit and traditional ELISA kit from leading competitor. SimpleStep ELISA kit shows increased sensitivity.



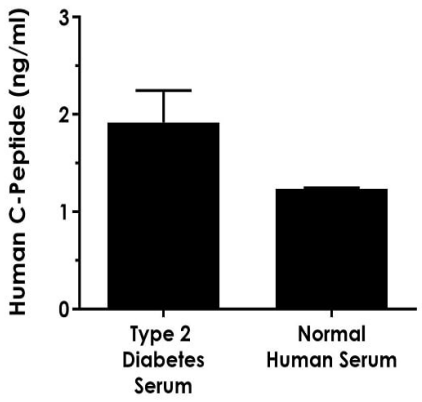
Example of human C-Peptide standard curve in Sample Diluent NS.

The C-Peptide 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.



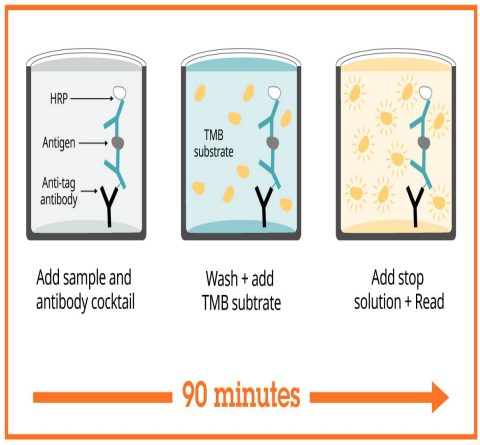
Interpolated concentrations of native C-Peptide in human serum, plasma (heparin) and pooled-sex urine samples.

The concentrations of C-Peptide were measured in duplicates, interpolated from the C-Peptide standard curves and corrected for sample dilution. Undiluted samples are as follows: serum 12.5%, plasma (heparin) 12.5%, and urine 1: 200. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean C-Peptide concentration was determined to be 1.3 ng/mL in serum, 0.6 ng/mL in plasma (heparin), and 31.7 ng/mL in pooled-sex urine.



Interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean C-Peptide concentration in type 2 diabetes serum samples was determined to be 1.9 ng/mL with a range of 1.4 – 2.2 ng/mL.

Serum from three individual human male donors with type 2 diabetes was measured in duplicate.

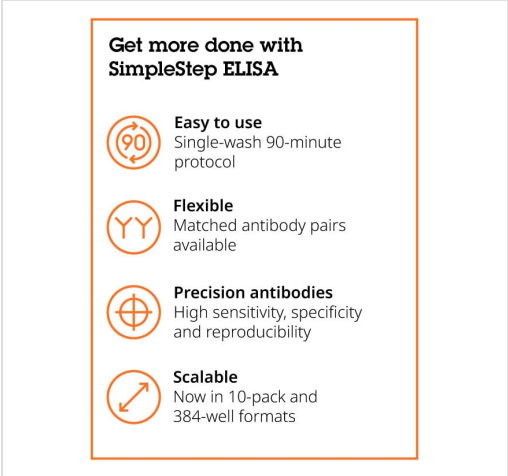


SimpleStep ELISA technology allows the formation of the antibody-antigen complex in one single step, reducing assay time to 90 minutes. Add samples or standards and antibody mix to wells all at once, incubate, wash, and add your final substrate. See protocol for a detailed step-by-step guide.

Sandwich ELISA - Human C-Peptide ELISA Kit (ab260064)

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

Sandwich ELISA - Human C-Peptide ELISA Kit (ab260064)



Sandwich ELISA - Human C-Peptide ELISA Kit (ab260064)

To learn more about the advantages of SimpleStep ELISA® kits see **here**.

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