abcam

Product datasheet

Human C Reactive Protein ELISA Kit ab181416

SimpleStep ELISA®

★★★★★ 2 Abreviews 3 References 5 Images

Overview

Product name Human C Reactive Protein ELISA Kit

Detection method Colorimetric

Precision

Intra-assay

Sample	n	Mean	SD	CV%
Human serum	5			1.5%

Inter-assay

Sample	n	Mean	SD	CV%
Human serum	3			7.2%

Sample type Cell culture supernatant, Serum, Heparin Plasma, EDTA Plasma, Citrate Plasma

Assay type Sandwich (quantitative)

Sensitivity 4 pg/ml

Range 15.63 pg/ml - 1000 pg/ml

Recovery 90.1 %

Sample specific recovery

Sample type	Average %	Range
Cell culture media	90.1	88.3% - 93.4%

Assay time 1h 30m

Assay duration One step assay

Species reactivity **Reacts with:** Human

Product overview Abcam's C-Reactive Protein (CRP) *in vitro* SimpleStep ELISA® (Enzyme-Linked Immunosorbent Assay) kit is designed for the quantitative measurement of CRP protein in Human cell culture supernatant, serum and plasma samples.

The SimpleStep ELISA® employs an affinity tag labeled capture antibody and a reporter

conjugated detector antibody which immunocapture the sample analyte in solution. This entire complex (capture antibody/analyte/detector antibody) is in turn immobilized via immunoaffinity of an anti-tag antibody coating the well. To perform the assay, samples or standards are added to the wells, followed by the antibody mix. After incubation, the wells are washed to remove unbound material. TMB substrate is added and during incubation is catalyzed by HRP, generating blue coloration. This reaction is then stopped by addition of Stop Solution completing any color change from blue to yellow. Signal is generated proportionally to the amount of bound analyte and the intensity is measured at 450 nm. Optionally, instead of the endpoint reading, development of TMB can be recorded kinetically at 600 nm.

Notes CRP displays several functions associated with host defense: it promotes agglutination, bacterial capsular swelling, phagocytosis and complement fixation through its calcium-dependent binding to phosphorylcholine. CRP can interact with DNA and histones and it may scavenge nuclear material released from damaged circulating cells. CRP is secreted; it forms a homopentamer pentaxin (or pentraxin) which have a discoid arrangement of 5 non-covalently bound subunits. CRP binds 2 calcium ions per subunit. The concentration of CRP in plasma increases greatly during acute phase response to tissue injury, infection or other inflammatory stimuli. It is induced by IL1/interleukin-1 and IL6//interleukin-6.

Tested applications **Suitable for:** Sandwich ELISA

Platform Microplate

Properties

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

Components	1 x 96 tests
10X CRP Capture Antibody	1 x 600µl
10X CRP Detector Antibody	1 x 600µl
10X Wash Buffer PT (ab206977)	1 x 20ml
Antibody Diluent CPI - HAMA Blocker (ab193969)	1 x 6ml
CRP Human 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 Displays several functions associated with host defense: it promotes agglutination, bacterial capsular swelling, phagocytosis and complement fixation through its calcium-dependent binding to phosphorylcholine. Can interact with DNA and histones and may scavenge nuclear material released from damaged circulating cells.

Tissue specificity Found in plasma.

Sequence similarities	Belongs to the pentaxin family. Contains 1 pentaxin domain.
Cellular localization	Secreted.

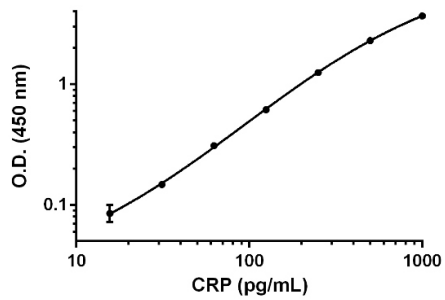
Applications

Our Abpromise guarantee covers the use of **ab181416** in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

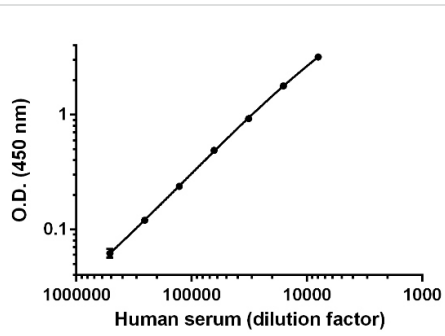
Application	Abreviews	Notes
Sandwich ELISA		Use at an assay dependent concentration.

Images



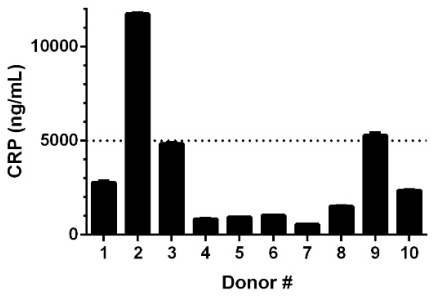
Example of CRP standard curve.

Background-subtracted data values (mean +/- SD, n=2) are graphed.



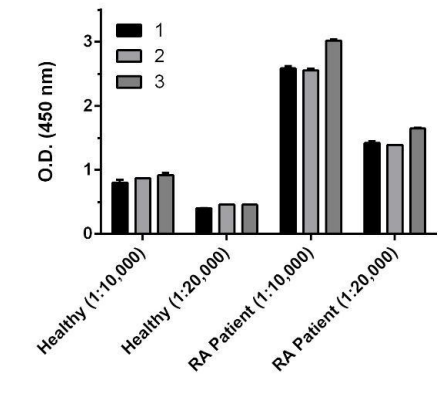
Titration of pooled Human serum within the working range of the assay.

Background subtracted data values (mean +/- SD, n=2) are graphed.



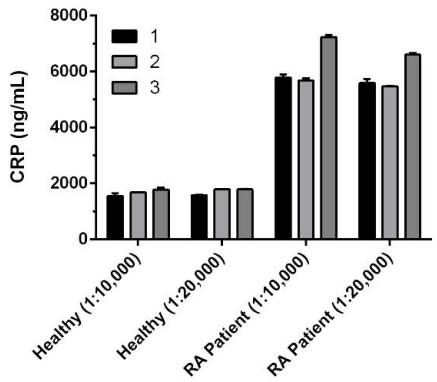
CRP concentrations in 10 individual Human serum donors.

10,000X diluted sera from 10 apparently healthy male donors were measured using this kit. Interpolated data values corrected for sample dilution are graphed in ng of CRP per mL of serum (mean +/- SD, n=2). Nine out of ten individual Human sera tested within or at reported Human serum range (< 5,000 ng/mL, dotted line). The mean of CRP concentration of these nine individual sera was determined to be 2,240 ng/mL with a range of 559 – 5,285 ng/mL. Note that one individual Human serum sample (donor # 2) tested substantially higher, 11,737 ng/mL.



Comparison of CRP signals in three healthy and three rheumatoid arthritis patient sera.

Background subtracted data values of two serum dilutions (as indicated in parenthesis) are graphed (mean +/- SD, n=2).



Quantification of CRP concentrations in three healthy and three rheumatoid arthritis (RA) patient sera.

The concentrations of CRP were interpolated from data values shown above using the CRP standard curve, corrected for sample dilution, and graphed in ng of CRP per mL of serum. As expected, note that the CRP serum concentrations are increased in RA patients.

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