

Human CRP ELISA Kit (C-Reactive protein) ab260058

Recombinant SimpleStep ELISA<sup>®</sup>

11 References 13 Images

Overview

Product name Human CRP ELISA Kit (C-Reactive protein)

Detection method Colorimetric

Precision	Intra-assay				
	Sample	n	Mean	SD	CV%
	Serum	8			1.4%

	Inter-assay				
	Sample	n	Mean	SD	CV%
	Serum	3			4%

Sample type Cell culture supernatant, Serum, Hep Plasma, EDTA Plasma, Cit plasma, Cerebral Spinal Fluid

Assay type Sandwich (quantitative)

Sensitivity 5.36 pg/ml

Range 18.75 pg/ml - 1200 pg/ml

Recovery	Sample specific recovery		
	Sample type	Average %	Range
	Cell culture supernatant	100	99% - 100%
	Serum	109	105% - 112%
	Hep Plasma	114	112% - 119%
	EDTA Plasma	110	107% - 113%
	Cit plasma	107	105% - 109%
	Cerebral Spinal Fluid	88	80% - 101%

<b>Assay time</b>	1h 30m
<b>Assay duration</b>	One step assay
<b>Species reactivity</b>	<b>Reacts with:</b> Human
<b>Product overview</b>	<p>Human CRP ELISA Kit (C-Reactive protein) (ab260058) is a single-wash 90 min sandwich ELISA designed for the quantitative measurement of CRP (C-Reactive protein) protein in cell culture supernatant, cit plasma, edta plasma, hep plasma, and serum. It uses our proprietary SimpleStep ELISA® technology. Quantitate Human CRP (C-Reactive protein) with 5.36 pg/ml sensitivity.</p> <p>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:</p> <ul style="list-style-type: none"> <li>- Single-wash protocol reduces assay time to 90 minutes or less</li> <li>- High sensitivity, specificity and reproducibility from superior antibodies</li> <li>- Fully validated in biological samples</li> <li>- 96-wells plate breakable into 12 x 8 wells strips</li> </ul> <p>A 384-well SimpleStep ELISA® microplate (<a href="#">ab203359</a>) is available to use as an alternative to the 96-well microplate provided with SimpleStep ELISA® kits.</p> <p><b>ASSAY SPECIFICITY:</b> This kit recognizes both native and recombinant human and monkey CRP protein in serum, plasma, and cell culture supernatant.</p> <p>Cell and tissue extract, urine, milk, and saliva samples have not been tested with this kit.</p> <p><b>CROSS REACTIVITY:</b> Recombinant mouse CRP and rat CRP were both prepared at 50 ng/mL respectively and assayed for cross reactivity. No cross-reactivity was observed.</p> <p><b>INTERFERENCE:</b> Recombinant mouse CRP and rat CRP were both prepared at 50 ng/mL respectively and tested for interference. No interference with was observed.</p> <p><b>SPECIES REACTIVITY:</b> This kit recognizes human and monkey CRP protein.</p> <p>Other species reactivity was determined by measuring 1:1000 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.</p> <p>Reactivity &lt; 3% was determined for the following species: Mouse, Rat, Cow.</p> <p>Other species reactivity not determined.</p>
<b>Notes</b>	C-reactive protein (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. This kit requires the use of acid treatment for the disassociation of CRP.

**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	10 x 96 tests
10X Human CRP (C-Reactive Protein) Capture Antibody	1 x 600µl	1 x 6000µl
10X Human CRP (C-Reactive Protein) Detector Antibody	1 x 600µl	1 x 6000µl
10X Wash Buffer PT (ab206977)	1 x 20ml	1 x 200ml
Antibody Diluent 4BI	1 x 6ml	10 x 6ml
Human CRP (C-Reactive Protein) Lyophilized Recombinant Protein	2 vials	2 x 10 vials
Plate Seals	1 unit	1 x 10 units
Sample Diluent NS (ab193972)	1 x 50ml	2 x 250ml
SimpleStep Pre-Coated 96-Well Microplate (ab206978)	1 unit	1 x 10 units
Stop Solution	1 x 12ml	1 x 120ml
TMB Development Solution	1 x 12ml	1 x 120ml

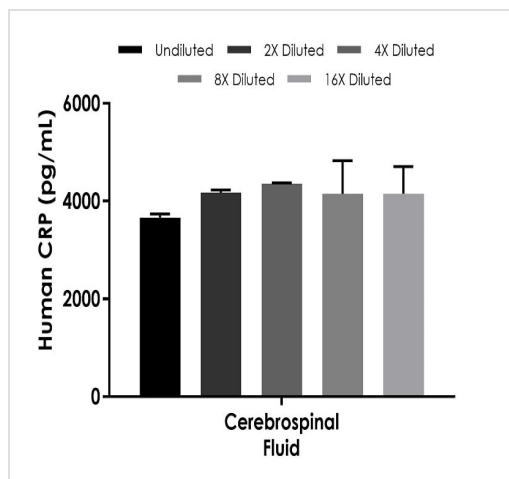
**Function** Displays several functions associated with host defense: it promotes agglutination, bacterial capsular swelling, phagocytosis and complement fixation through its calcium-dependent binding to phosphorylcholine. Can interact with DNA and histones and may scavenge nuclear material released from damaged circulating cells.

**Tissue specificity** Found in plasma.

**Sequence similarities** Belongs to the pentaxin family.  
Contains 1 pentaxin domain.

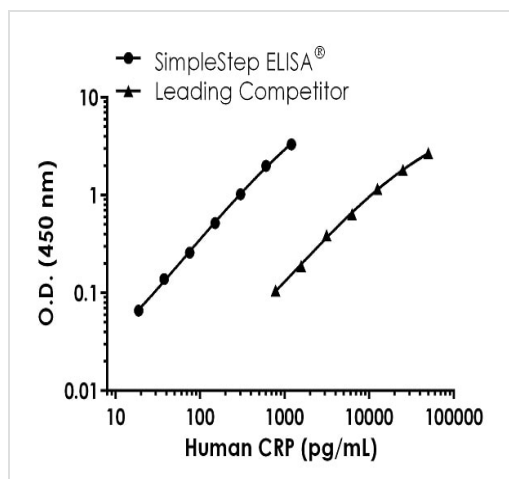
**Cellular localization** Secreted.

## Images



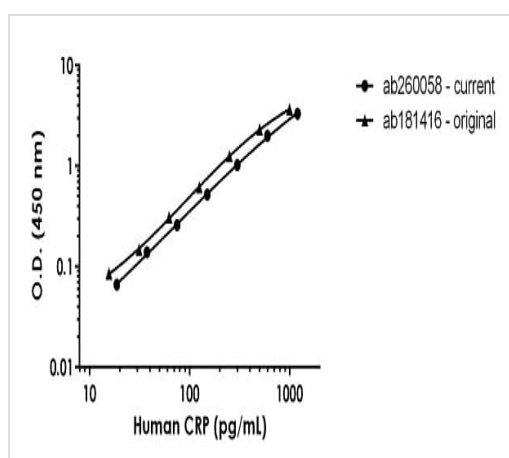
Interpolated concentrations of human CRP in cerebrospinal fluid.

Interpolated concentration of native CRP was measured in duplicate at different sample concentrations. Undiluted samples are 12.5%. The interpolated dilution factor corrected values are plotted (mean  $\pm$  SD, n=2). Sample dilutions are made in Sample Diluent NS.



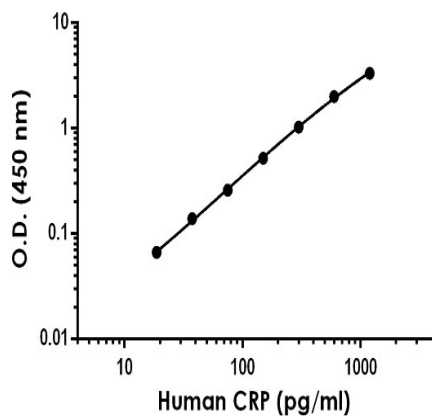
Human CRP standard curve comparison

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



Human CRP ELISA kit comparison comparison

Standard Curve comparison between ab260058 and **ab181416** SimpleStep ELISA kits. ab260058 SimpleStep ELISA kit shows comparable sensitivity.



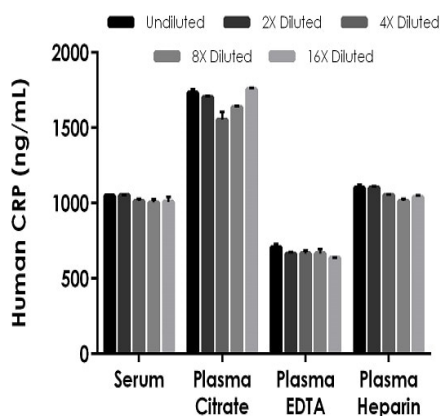
Example of human CRP standard curve in Sample Diluent NS.

The CRP standard curve was prepared as described in Section 10. Raw data values are shown in the table. Background-subtracted data values (mean  $\pm$  SD) are graphed.

Standard Curve Measurements			
Concentration (pg/ml)	O.D 450 nm		Mean O.D
	1	2	
0	0.064	0.058	0.061
18.75	0.125	0.130	0.127
37.5	0.195	0.205	0.200
75	0.311	0.329	0.320
150	0.578	0.586	0.582
300	1.076	1.103	1.090
600	2.052	2.070	2.061
1200	3.395	3.383	3.389

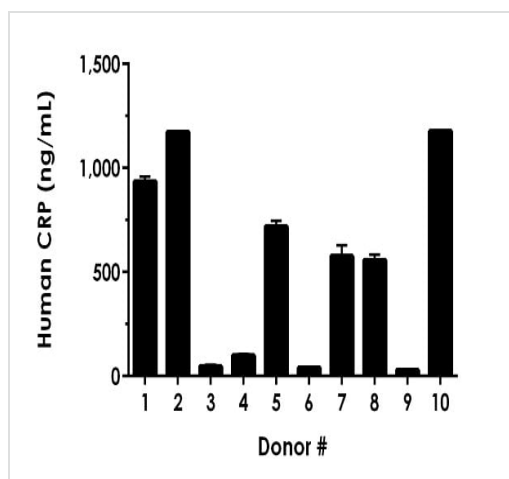
Example of human CRP standard curve in Sample Diluent NS. Raw data values are shown in the table. Background-subtracted data values (mean  $\pm$  SD) are graphed.

Standard curve



Interpolated concentrations of native CRP in human serum and plasma samples.

The concentrations of CRP were measured in duplicates, interpolated from the CRP standard curves and corrected for sample dilution. Undiluted samples are as follows: serum 1:1000, plasma (citrate) 1:2000, plasma (EDTA) 1:1000, plasma (heparin) 1:1000. The interpolated dilution factor corrected values are plotted (mean  $\pm$  SD,  $n=2$ ). The mean CRP concentration was determined to be 1025.5 ng/mL in serum, 1676.5 ng/mL in plasma (citrate) and 668.3 ng/mL in plasma (EDTA), and, 1062.8 ng/mL in plasma (heparin).



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

Interpolated dilution factor corrected values are plotted (mean  $\pm$  SD,  $n=2$ ). The mean CRP concentration was determined to be 535.7 ng/mL with a range of 28.1 – 1180.4 ng/mL.

Dilution Factor	Interpolated value	1:1000 Human Serum	1:2000 Human Plasma (Citrate)	1:1000 Human Plasma (EDTA)	1:1000 Human Plasma (Heparin)
Undiluted	pg/mL	1049.0	865.9	707.4	1102.8
	% Expected value	100	100	100	100
2	pg/mL	526.4	426.1	331.9	551.1
	% Expected value	100	98	94	100
4	pg/mL	253.4	194.2	166.6	263.3
	% Expected value	97	90	94	96
8	pg/mL	125.4	102.3	83.2	126.8
	% Expected value	96	95	94	92
16	pg/mL	63.0	54.9	39.9	65.1
	% Expected value	96	101	90	94

Linearity of dilution.

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 CRP 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	25% PBMC supernatant
Undiluted	pg/mL	587.8
	% Expected value	100
2	pg/mL	286.6
	% Expected value	98
4	pg/mL	139.9
	% Expected value	95
8	pg/mL	74.2
	% Expected value	101
16	pg/mL	39.9
	% Expected value	109

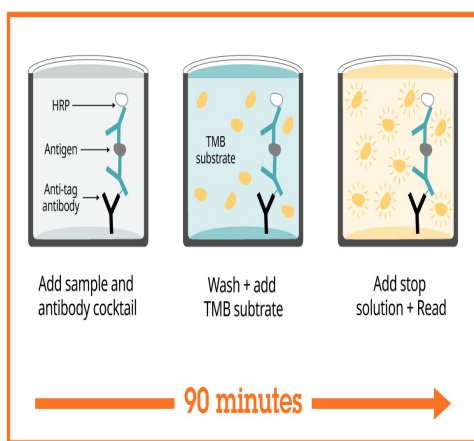
Linearity of dilution.

Recombinant CRP was spiked into the following biological samples and diluted in a 2-fold dilution series in Sample Diluent NS.

Sample Type	Average % Recovery	Range (%)
1:4000 Serum	109	105 - 112
1:4000 Plasma - Citrate	107	105 - 109
1:4000 Plasma - EDTA	110	107 - 113
1:4000 Plasma - Heparin	114	112 - 119
25% PBMC Cell culture supernatant	100	99 - 100

#### Recovery

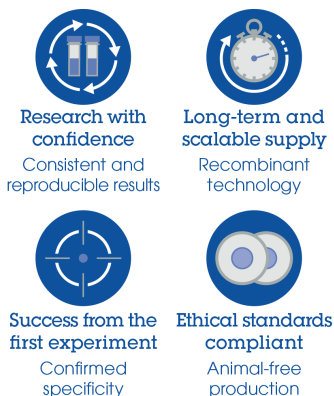
Three concentrations of CRP recombinant protein were spiked in duplicate to the indicated biological matrix to evaluate signal recovery in the working range of the assay.



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 CRP ELISA Kit (C-Reactive protein) (ab260058)

#### Powered by recombinant antibodies



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

#### Sandwich ELISA - Human CRP ELISA Kit (C-Reactive protein) (ab260058)

**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 CRP ELISA Kit (C-  
Reactive protein) (ab260058)

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

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

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