

# High Sensitive C-Reactive Protein

<b>Method:</b>	Enzyme-linked immunoassay (ELISA)
<b>Kit Manufacturer:</b>	R&D Systems, Inc., Minneapolis, MN
<b>Description:</b>	<p>C-Reactive Protein (CRP), also known as Pentraxin 1, is a non-glycosylated protein in the Pentraxin family. CRP functions as a sensor and activator of the innate immune response. In humans, it is a major acute-phase protein; its circulating concentration is dramatically elevated at the onset of inflammation.</p> <p>CRP binding to Fc<math>\gamma</math> RI induces Src activation which subsequently triggers the inhibitory Fc<math>\gamma</math> RIIb and dampens the inflammatory response. CRP additionally promotes dendritic cell maturation and humoral immunity. In cardiovascular disease, CRP binds to oxidized LDL, exacerbates tissue damage in coronary artery infarction, and inhibits the repair of injured vascular endothelium.</p> <p>This assay employs the quantitative sandwich enzyme immunoassay technique. A monoclonal antibody specific for human CRP has been pre-coated onto a microplate. Standards and samples are pipetted into the wells and any CRP present is bound by the immobilized antibody. After washing away any unbound substances, an enzyme-linked monoclonal antibody specific for human CRP is added to the wells. Following a wash to remove any unbound antibody-enzyme reagent, a substrate solution is added to the wells and color develops in proportion to the amount of CRP bound in the initial step. The color development is stopped and the intensity of the color is measured.</p>

## Collection and Performance Characteristics

<b>Tube type:</b>	Preferred: Serum Alternate: EDTA Plasma, or Heparin Plasma
<b>Minimum Volume:</b>	0.1 mL
<b>Special Processing Considerations</b>	Avoid repeated freeze-thaw cycles. Store at -80°C until analysis is performed
<b>Lowest Reportable Value:</b>	0.78 ng/mL
<b>Dynamic range:</b>	39-1,560 ng/mL & 3,900 – 250,000 ng/mL Values outside the above range can be obtained upon request. If possible, please let the lab know approximate expected values.
<b>Precision:</b>	Intra-assay variation is 3.8 – 8.3% Inter-assay variation is 6.0 – 7.0%
<b>Reference Range:</b>	Healthy Subjects: 108 – 4523 ng/mL Subjects with inflammatory Response: >100,000 ng/mL