

Mouse CRP Antibody Pair Set

Catalog No. E-KAB-0072
Synonyms PTX1, Pentraxin 1

Applications ELISA

Kit components & Storage

Title	Specifications	Storage
Mouse CRP Capture Antibody	1 vial, 100 µg	Store at -20°C for one year. Avoid freeze / thaw cycles.
Mouse CRP Detection Antibody (Biotin)	1 vial, 50 µL	Store at -20°C for one year. Avoid freeze / thaw cycles.

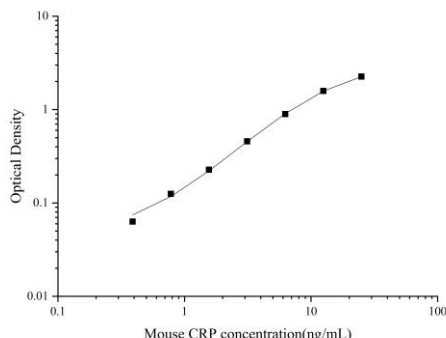
Note: Centrifuge before opening to ensure complete recovery of vial contents.

Product Information

Items		Characteristic (E-KAB-0072)	
		Mouse CRP Capture Antibody	Mouse CRP Detection Antibody (Biotin)
Immunogen Information	Immunogen	Recombinant Mouse CRP protein	Recombinant Mouse CRP protein
	Swissprot	P14847	
Product details	Reactivity	Mouse	Mouse
	Host	Rat	Goat
	Conjugation	Unconjugated	Biotin
	Concentration	0.5mg/mL	/
	Buffer	PBS with 0.04% Proclin 300, 50% glycerol, pH 7.4	PBS with 0.04% Proclin 300, 1% protective protein, 50% glycerol, pH 7.4
	Purify	Protein A or G	Antigen Affinity
	Specificity	Detects Mouse CRP in ELISAs.	

Applications

Mouse CRP Sandwich ELISA Assay:

	Recommended Concentration/Dilution	Reagent	Images																
ELISA Capture	0.5-4µg/mL	Mouse CRP Capture Antibody	 <p>The graph is a log-log plot of Optical Density versus Mouse CRP concentration (ng/mL). The x-axis ranges from 0.1 to 100 ng/mL, and the y-axis ranges from 0.01 to 10. The data points form a smooth, upward-sloping curve, indicating a positive correlation between CRP concentration and optical density.</p> <table border="1"> <caption>Approximate data points from the standard curve</caption> <thead> <tr> <th>Mouse CRP concentration (ng/mL)</th> <th>Optical Density</th> </tr> </thead> <tbody> <tr> <td>0.5</td> <td>0.05</td> </tr> <tr> <td>1</td> <td>0.1</td> </tr> <tr> <td>2</td> <td>0.2</td> </tr> <tr> <td>5</td> <td>0.5</td> </tr> <tr> <td>10</td> <td>1.0</td> </tr> <tr> <td>20</td> <td>2.0</td> </tr> <tr> <td>50</td> <td>5.0</td> </tr> </tbody> </table>	Mouse CRP concentration (ng/mL)	Optical Density	0.5	0.05	1	0.1	2	0.2	5	0.5	10	1.0	20	2.0	50	5.0
Mouse CRP concentration (ng/mL)	Optical Density																		
0.5	0.05																		
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50	5.0																		
ELISA Detection	1:1000-1:10000	Mouse CRP Detection Antibody (Biotin)																	

Note: This standard curve is only for demonstration purposes. A standard curve should be generated for each assay!

Background

C-Reactive Protein (CRP), also known as Pentraxin 1, is a non-glycosylated protein in the Pentraxin family that also includes Pentraxin 2/SAP and Pentraxin 3/TSG-14. CRP functions as a sensor and activator of the innate immune response (1). In humans, it is a major acute-phase protein, its circulating concentration is dramatically elevated at the onset of inflammation (2). In mice, however, serum CRP levels increase only slightly during inflammation, and the analogous acute phase role is filled by Pentraxin 2 (3). CRP assembles non-covalently into a 110-120 kDa cyclical pentamer (4). Mature human CRP shares 71% and 64% amino acid (aa) sequence identity with mouse and rat CRP, respectively (5).

CRP binds and opsonizes apoptotic cells (6-8) as well as bacteria such as *S. pneumoniae* (9,10). It subsequently enhances the phagocytosis of these opsonized cells (6,8-10). CRP additionally binds several proteins in the complement cascade including C1q, C4BP, and Factor H (8,11-13). It enhances activation of the classical complement pathway and the deposition of C3b (9). In later stages of the response, CRP inhibits complement-mediated cell lysis through its binding to C4BP and Factor H (8,12). These interactions induce the upregulation of complement inhibitory proteins CD46, CD59, and CD55/DAF and inhibit assembly of the membrane attack complex (MAC) (8,14).

CRP binds to Fc gamma RI, Fc gamma RIIA, and Fc gamma RIIB on macrophages and dendritic cells (15-17), and Fc receptors are required for the phagocytosis of CRP-opsonized target cells (6,10,18). CRP binding to Fc gamma RI induces Src activation which subsequently triggers the inhibitory Fc gamma RIIB and dampens the inflammatory response (15,19). CRP additionally promotes dendritic cell maturation and humoral immunity (10). In cardiovascular disease, CRP binds to oxidized LDL, exacerbates tissue damage in coronary artery infarction, and inhibits the repair of injured vascular endothelium (7,19,20).

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