

# CRP (ML-12): sc-73864

## BACKGROUND

Pentraxins, which include C-reactive protein (CRP) and serum amyloid P component (SAP), are prototypic acute phase proteins. CRP and SAP are produced by liver epithelial cells and are characterized by a cyclic pentameric structure and calcium-dependent ligand binding. IL-6 is the major inducer of human CRP gene, and IL-1 and steroids can enhance this induction. Testosterone is required for the expression of CRP transgene *in vivo*, whereas testosterone is not required for expression of the SAP gene. During the acute phase response, cytokine C5a acts with IL-6 and/or IL-1 $\beta$  to promote up-regulation of the CRP and SAP genes. Both Stat3 and C/EBP are involved in mouse SAP gene expression, but only Stat3 is involved in mouse CRP gene expression. SAP binds to a variety of molecules, including autoantigens and chromatin. Both CRP and SAP also bind to Fc  $\gamma$  R and opsonize particles for phagocytosis by human polymorphonuclear leukocytes. Opsonization of zymosan by CRP is mediated through Fc  $\gamma$  RI, while Fc  $\gamma$  RII and Fc  $\gamma$  RIII are receptors for SAP. Therefore, CRP and SAP play critical roles in the host defense system.

## REFERENCES

- Alles, V.V., et al. 1994. Inducible expression of Ptx3, a new member of the pentraxin family, in human mononuclear phagocytes. *Blood* 84: 3483-3493.
- Introna, M., et al. 1996. Cloning of mouse Ptx3, a new member of the pentraxin gene family expressed at extrahepatic sites. *Blood* 87: 1862-1872.
- Jensen, L.E., et al. 1997. Acute phase proteins in salmonids: evolutionary analyses and acute phase response. *J. Immunol.* 158: 384-392.
- Szalai, A.J., et al. 1998. Testosterone and IL-6 requirements for human C-reactive protein gene expression in transgenic mice. *J. Immunol.* 160: 5294-5299.
- Szalai, A.J., et al. 2000. Complement-dependent acute phase expression of C-reactive protein and serum amyloid P component. *J. Immunol.* 165: 1030-1035.
- Ochrietor, J.D., et al. 2000. Role of Stat3 and C/EBP in cytokine-dependent expression of the mouse serum amyloid P component (SAP) and C-reactive protein (CRP) genes. *Cytokine* 12: 888-899.
- Bharadwaj, D., et al. 2001. Serum amyloid P component binds to Fc  $\gamma$  R and opsonizes particles for phagocytosis. *J. Immunol.* 166: 6735-6741.

## CHROMOSOMAL LOCATION

Genetic locus: Crp (mouse) mapping to 1 H3.

## SOURCE

CRP (ML-12) is a mouse monoclonal antibody raised against full length recombinant CRP of rat origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgG<sub>2b</sub> in 1.0 ml PBS with < 0.1% sodium azide and protein stabilizer.

## APPLICATIONS

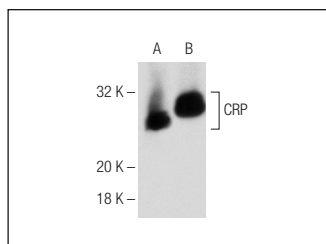
CRP (ML-12) is recommended for detection of CRP of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for CRP siRNA (m): sc-40816, CRP shRNA Plasmid (m): sc-40816-SH and CRP shRNA (m) Lentiviral Particles: sc-40816-V.

Molecular Weight of CRP monomer: 24-30 kDa.

Positive Controls: rat liver extract: sc-2395 or mouse plasma tissue extract.

## DATA



CRP (ML-12): sc-73864. Western blot analysis of CRP in mouse plasma (A) and CRP expression in rat liver tissue extract (B).

## SELECT PRODUCT CITATIONS

- Chiba, T. and Ezaki, O. 2010. Dietary restriction suppresses inflammation and delays the onset of stroke in stroke-prone spontaneously hypertensive rats. *Biochem. Biophys. Res. Commun.* 399: 98-103.

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.