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C-reactive protein (CRP) is an annular, pentameric protein found in blood plasma, whose levels rise in response to inflammation. It is an acute-phase protein of hepatic origin that increases following interleukin-6 secretion by macrophages and T cells.

CRP is used mainly as a marker of inflammation. The level of C-reactive protein (CRP), which can be measured in human blood, increases when there's inflammation in patient' s body. It is not a specific test. That means it can reveal that you have inflammation somewhere in your body, but it cannot pinpoint the exact location. Measuring and charting CRP values can prove useful in determining disease progress or the effectiveness of treatments.

A high-sensitivity C-reactive protein (hs-CRP) test, which is more sensitive than a standard test, also can be used to evaluate the risk of developing coronary artery disease, a condition in which the arteries of your heart are narrowed.

Anti-Human CRP Monoclonal Antibody

A new generation of anti-CRP monoclonal antibodies, which was recently produced by CUSAg, makes possible the development of highly sensitive immunoassays. CUSAg antibodies are evaluated on different types of platforms: lateral-flow immunochromatogragphic assay (LFIA), chemiluminescent immunoassay (CLIA) and latex-enhanced turbidimetric immunoassay (LETIA).

Properties	Specification
Target species	Human
Host animal	Mice Balb/c
Cell line used for fusion	Sp2/0
Immunogen	Human C-reactive protein
Purification method, Purity	Protein G affinity chromatography, >95%(SDS-PAGE)
Presentation	Mab solution in PBS (pH 7.4)
Application	CLIA, LETIA, LFIA
Catalog Number	CSB-DA402GmN① ; CSB-DA402GmN② ; CSB-DA402GmN③ ; CSB-DA402GmN⑤ ; CSB-DA402GmN⑥

1 CRP Protein

A certain amount of excellent CRP protein (Cat: CSB-DP402G) is also offered by CUSAg. It could be used as calibrator in immunoassay and applied on Western Blotting.

2 Calibration Curve

• LETIA platform

CRP proteins specifically react with anti-CRP monoclonal antibodies(CSB-DA402GmN①)precoated onto latex beads to form insoluble complexs, resulting in turbidity increasing, and then the increasing of absorbance is detected by automatic biochemical analyzer. Our in-house assays have a linear detection range from 0-150 mg/L(Fig.1).

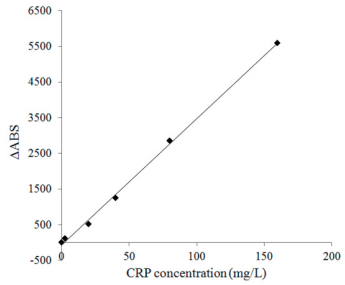

Fig.1 Calibration curve for CRP
in latex-enhanced turbidimetric immunoassay (LETIA).

• LFIA platform

A set of CRP calibrators with the concentration of 0, 0.1, 0.5, 2, 10, 20, 50 and 100 mg/L was detected on CUSAg LFIA platform. The capture antibody was stripped on the nitrocellulose membrane, and the detection antibody was conjugated to colloidal gold. The best selected MAb combination is (capture-detection): CSB-DA402GmM⑥-CSB-DA402GmM⑤.

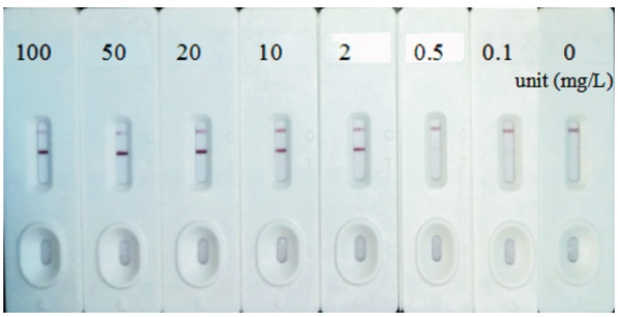

Fig.2 Semi-quantitative detection of CRP protein in colloidal gold immunochromatogragphic assay

• CLIA platform

Two monoclonal antibodies were tested in pairs as capture and detection antibodies for the development of a quantitative sandwich immunoassay. Calibration curve for the best two-site combination is shown in Fig.3 (R2 >0.99),which detection range is 0.002-0.4 mg/L. The MAb combination for quantification of human CRP is (capture-detection): CSB-DA402GmN③- CSB-DA402GmN②

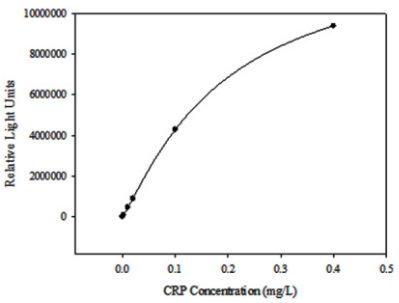

Fig.3 Calibration curve for CRP in sandwich chemiluminescence immunoassay (CLIA)

3 Clinical Comparison

• LETIA platform

Anti-CRP monoclonal antibodies were also evaluated in medium-scale clinical trials with random blood samples from donates (n=50). Fig.4 showed that the correlation coefficient (r) is as high as 0.98 between in-house latex reagents and commercial CRP immunoassay.

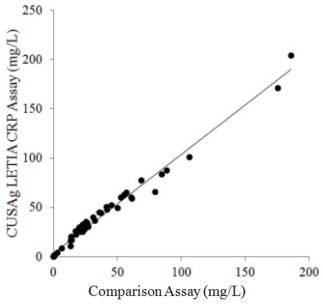

Fig.4 Clinical comparison of CUSAg CRP immunoassay and commercial diagnostic assay

• LFIA platform

20 samples from apparently healthy donors and patients with acute or chronic inflammation were detected with the CUSAg LFIA CRP assay. Fig.5 showed that the detection signals of T line were proportional to the concentration of the CRP in the sample tested by commercial kit.

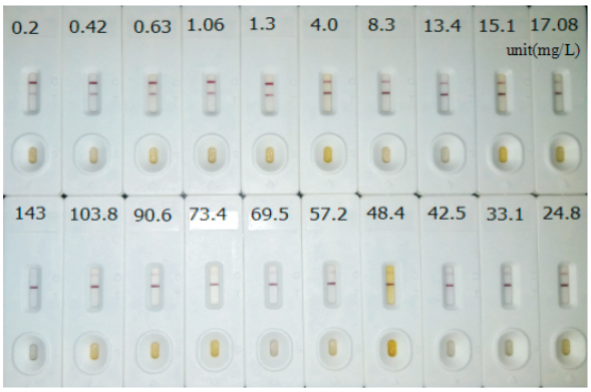

Fig.5 Semi-quantitative detection of the concentration of the CRP in the blood samples (The serum were directly added onto strips without dilution)

• CLIA platform

A study was performed where 48 specimens were tested using two antibody combinations and compared to a high-quality comparison assay. Data from this study is analyzed and summarized in the following figure (Fig.6).

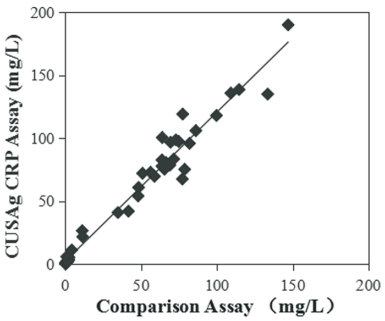

Fig.6 Determination of clinical samples using CUSAg MAb on CLIA platform

WUHAN CUSAG BIOTECH CO.,LTD ® CUSAg IVD RAW MATERIALS DIVISION
ADDR: Wuhan Hi-tech Medical Devices Park, Building B11, #818 Gaoxin Road, Donghu Hi-Tech Development Area, Wuhan, Hubei Province 430206, P.R.China
TEL: +86-27-87196282 Ext853/897 **FAX:** +86-27-87196150 **WEB:** www.cusag.org