Figure S1. The typical elution curves for purification of serum anti-phagocytic protein. The ammonium sulphate precipitated serum protein was further purified by Capto Q, Con A, Heparin and Butyl column sequentially. The A280 absorbance (blue), conductivity (red) and the percentage of buffer B (elution buffer, green) in gradient elusion are shown. The brown bars indicate the fractions which inhibited phagocytosis of beads by stimulated THP-1 cells.

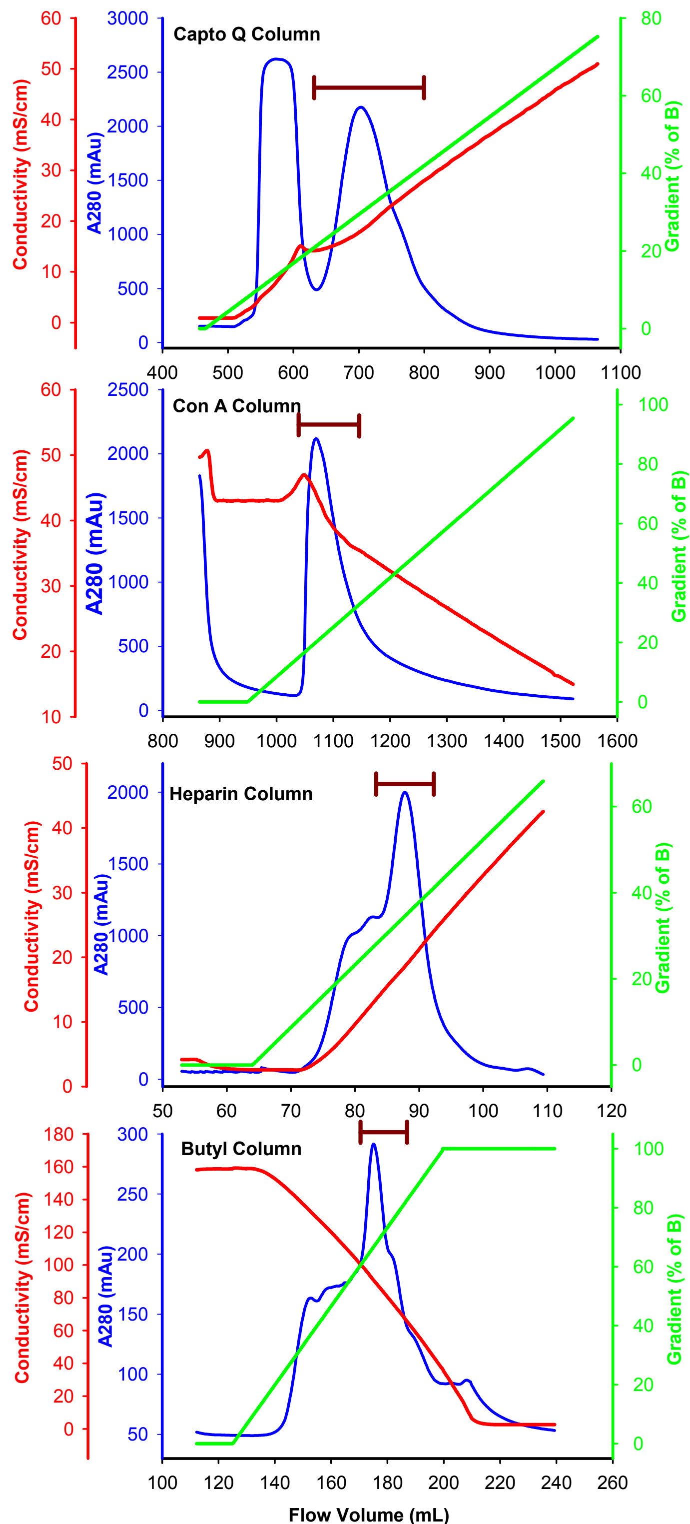

Figure S2. The serum proteins separated by Superdex 200 gelfiltration. Proteins eluted from size exclusion chromatography were separated by electrophoresis on SDS-PAGE and stained with colloidal Coomassie blue overnight before protein bands were cut and analysed by mass spectrometry. The major identified proteins were 1: complement factor H; 2: complement factor B, inter-α-trypsin inhibitor heavy chain H1, Ceruloplasmin and SAP; 3: Histidine-rich glycoprotein. Lane 1: starting material; Lane 2~9: fractions eluted from Superdex 200 gelfiltration. The relative inhibitory effect of each fraction on YG bead uptake by monocytes is indicated (- = no inhibition, + to +++ = increasing strength of inhibition).

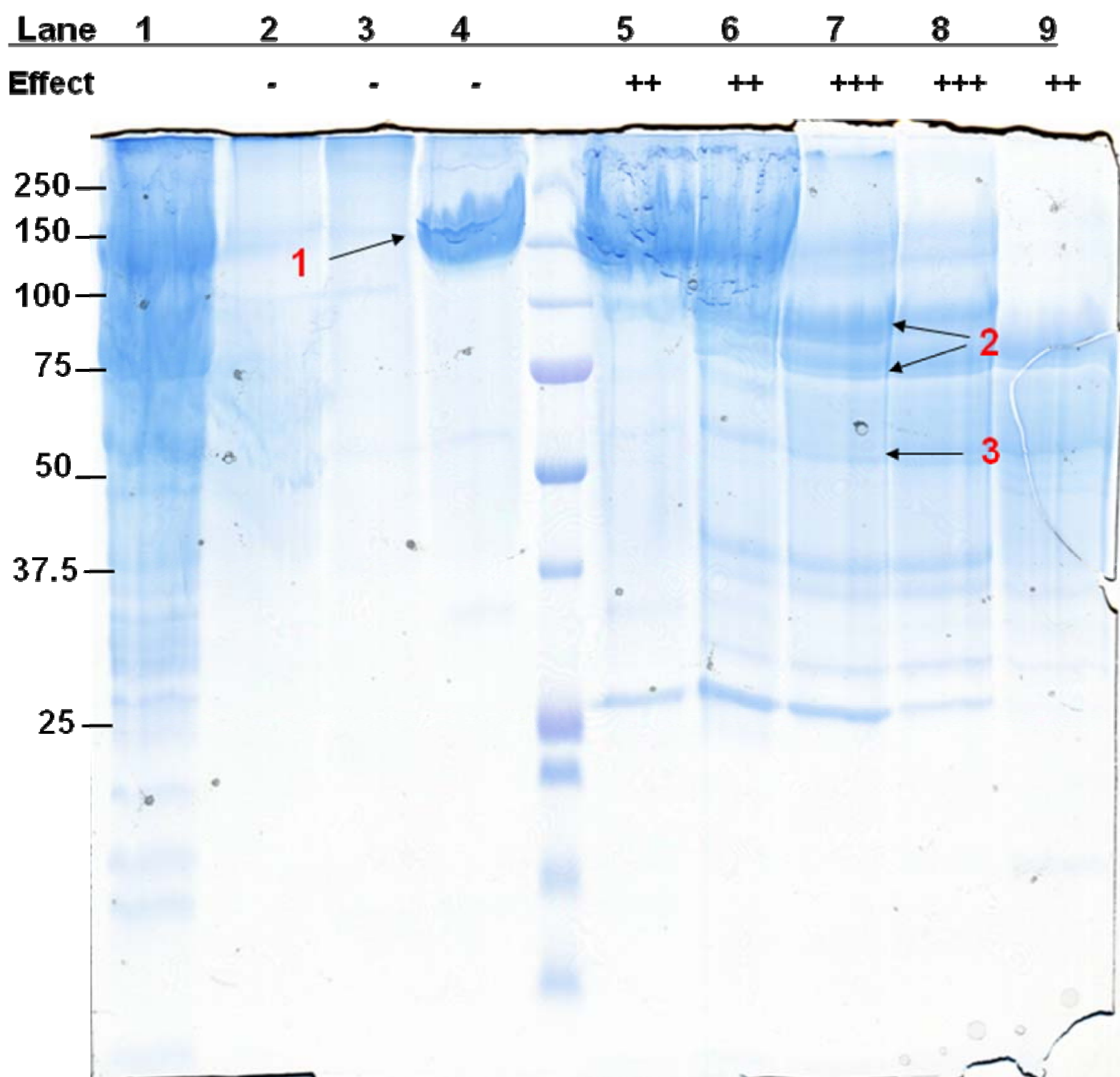

Figure S3: The additive inhibitory effect of ceruloplasmin (Cp), serum amyloid P-component (SAP) and amyloid protein precursor (APP) on innate phagocytosis. a. Flow cytometry dot plots of YG beads uptake by fresh human monocytes. Cells were treated with Cp (100 µg/mL), sAPP695α, (100 µg/mL) and SAP (50 µg/mL) alone or the three glycoproteins together for 1 min prior to addition of beads. **b.** Flow cytometry histograms of phagocytosis of apoptotic lymphocytes by autologous macrophages. Macrophages were treated with Cp (100 µg/mL), sAPP695α, (100 µg/mL) and SAP (50 µg/mL) alone or the three glycoproteins together for 1 min prior to addition of CFSE labeled apoptotic lymphocytes.

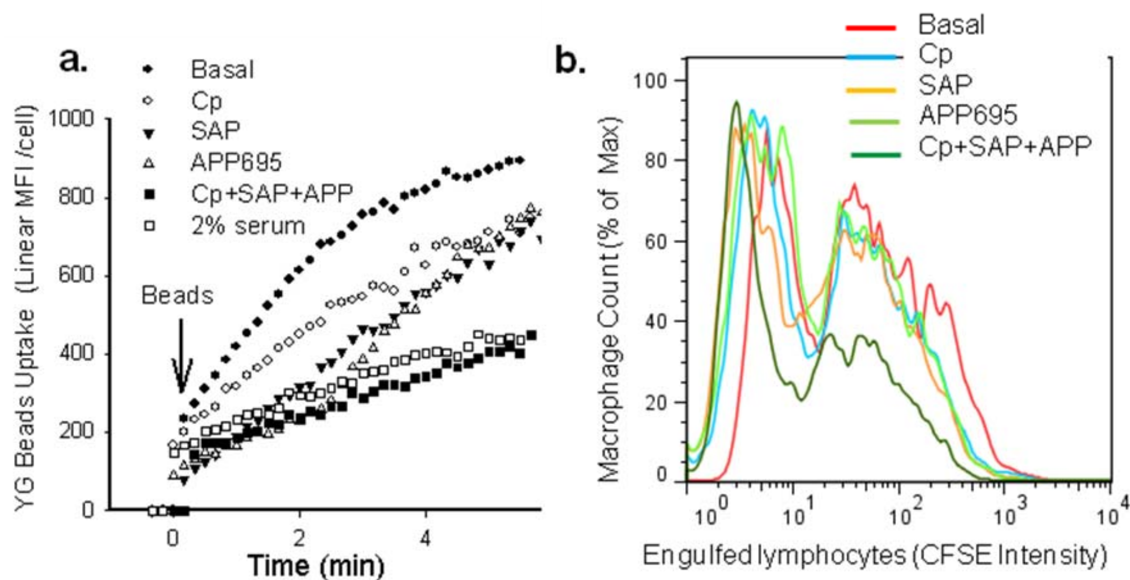

Figure 4: Deglycosylated sAPP695α retained its inhibitory effect on innate phagocytosis. Soluble APP695α was deglycosylated using the Glycofree Chemical Deglycosylation Kit (Prozyme, Hayward, CA) according to the manufacture's instruction. The deglycosylated APP695α was completely dissolved in PBS at a concentration of 850 µg/mL. **a.** Western blotting image shows the charachterisitc size shift in protein band of sAPP695α before (lane 1) and after (lane 2) deglycosylation. **b.** Flow cytometry dot plots of YG beads uptake by fresh human monocytes. Cells were treated with 100 µg/mL sAPP695α or deglycosylated sAPP695α for 1 min prior to addition of beads. **c.** Flow cytometry histogram of phagocytosis of apoptotic lymphocytes by autologous macrophages. Macrophages were treated with 100 µg/mL sAPP695α or deglycosylated sAPP695α for 1 min prior to addition of CFSE labeled apoptotic lymphocytes.