

Abstract Submitted  
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**Label-free Electrochemical Impedance Detection of C-reactive Protein** ALLISON WHITED, K..V. SINGH, RAJ SOLANKI — C-reactive protein, CRP, is a marker present in human serum indicating inflammation and infection. By measuring the amount present in serum, it is possible to monitor the effectiveness of a treatment or roughly gauge the risk of heart disease. Using a double antibody capture system immobilized on an interdigitated electrode array, a label-free device was developed to detect the presence of CRP present in buffer solution and various concentrations of human serum. Electrochemical impedance spectroscopy was used to measure the end point data of the binding signal as the assay was exposed to varying amounts of CRP in the presence of a constant concentration of anti-CRP. The sensor is able to achieve linear detection in both buffer solution and human serum spiked with CRP in the range of 1ng/ml to 1ug/ml. The sensor developed can be integrated into a portable microfluidic device.

Allison Whited

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