# An Immunosensor for the Detection of N-(carboxymethyl)lysine - A Diabetic Biomarker

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## Materials and methods

Urea, sodium chloride (NaCl), carboxymethyl-lysine, monoclonal CML antigen, 1-ethyl-3-(3-dimethyl-aminopropyl) carbodiimide (EDC), N-hydroxysuccinimide (NHS), potassium hydroxide, methylglyoxal, glucose, glutamic acid, fructose, ascorbic acid, glutathione, uric acid, potassium hexacyanoferrate (III) [$K_3Fe(CN_6)$], ringer lactate, and sodium hydroxide (NaOH) were procured from Sigma-Aldrich, USA. Paracetamol and orange peels were acquired from local vendors.

## Instrumentation

X-ray diffraction (XRD) study was examined with the D8 Focus XRD, Bruker, Germany. The investigation was obtained at a diffraction angle from 10º-80º with wavelength of 1.5418 Å. UV-Vis spectrophotometer (Perkin Elmer Lambda 25, USA) was used to obtain the absorption spectra of CQDs in the range of 200-600 nm wavelength. The functional groups of as prepared CQDs materials were characterized using Fourier-Transform Infrared Spectroscopy (FT-IR, Spectrum 100, Perkin Elmer, USA).

The voltammetric experiments have been carried out using the Potentiostat CHI660E (CH Instruments Inc., USA). The CV and DPV experimentations were carried out in a 10 mL glass cell equipped with a three-electrode arrangement of Ag/AgCl (saturated in KCl) as the reference electrode, platinum wire as the auxiliary electrode, and surface modified glassy carbon as the working electrode.

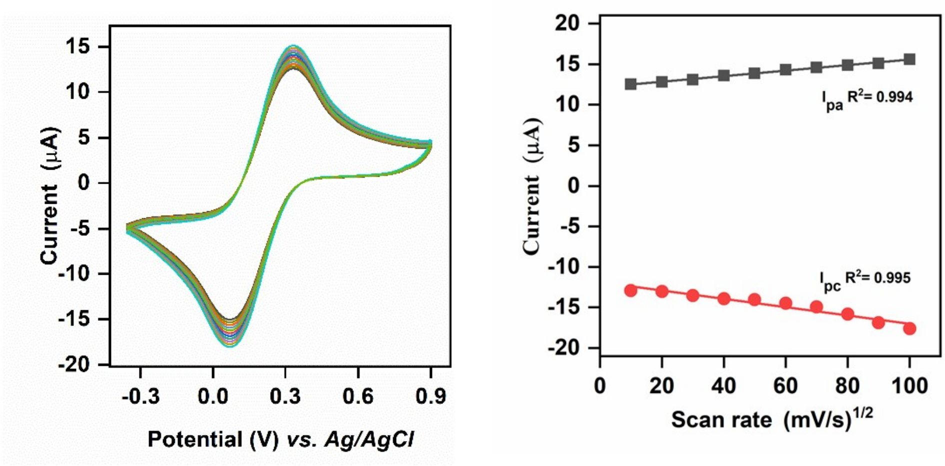

**Figure S1.** Cyclic

voltammetry current response on the effect of variation scan rate of GCE/CQDs/anti-CML/NHS-EDC, and its linear calibration plot.