Multiwalled Carbon Nanotubes Based Immunosensor for Diagnosis of Celiac Disease

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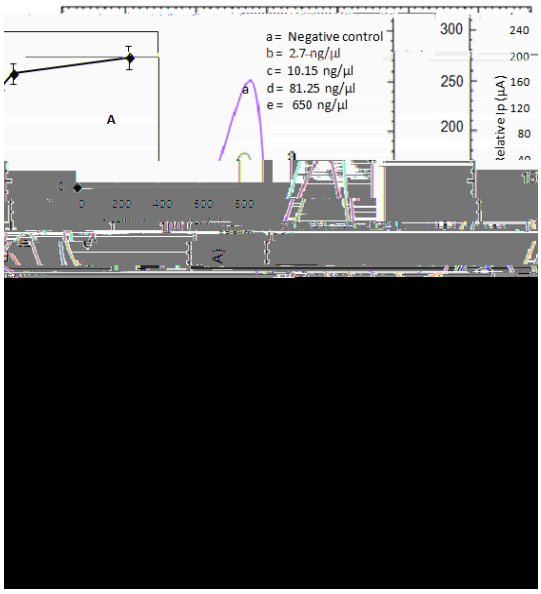

Figure 2: Cyclic voltammetric studies of gliadin based immunosensor using different antibody concentrations ranging from 2.7 ng/µl – 650 ng/µl at 50 mVs^{-1} using 5 mM $K3[Fe(CN)_6]$. The inset A shows hyperbolic curve from 0 – 650 ng/µl with linear peak current (I_p) up to 81.25 ng/µl of anti- gliadin antibodies. Inset B shows the linear plot from 0 – 10.15 ng/µl anti-gliadin antibodies for the calculation of sensitivity and LOD.

could detect the antibody concentration as low as 2.7ng/µl, thereby, con rming the immunosensor sensitivity.

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e sensitivity of the immunosensor was 119.2µA/cm^2/ng and LOD was 0.13 ng/µl with the regression coe cient (R^2) 0.991 using CV. e MWCNT based immunosensor can detect as low as 2.7ng/µl concentration of antigliadin antibodies in 30 min con rming that the immunosensor is sensitive analytical tool for the detection of antigliadin antibodies raised in response to the ingestion of gliadin in patients su ering from Celiac disease.

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