



**Figure S1.** UV-vis spectra of paper-gold nanocomposites demonstrating no significant SPR peak shift throughout higher concentration of glucose (9, 15, 30, 45, 60, and 90 mM).

The spectrometric data provides that the diameters of the gold nanosphere were kept around 50 nm and the correlation between the particle diameter and the glucose concentration was calculated low as insignificant ( $R^2 = 0.484$ ).