Electronic Supplementary Material (ESI) for ChemComm.

SUPPORTING INFORMATION

Electrochemically triggered release of human insulin from an insulin-impregnated reduced graphene oxide modified electrode

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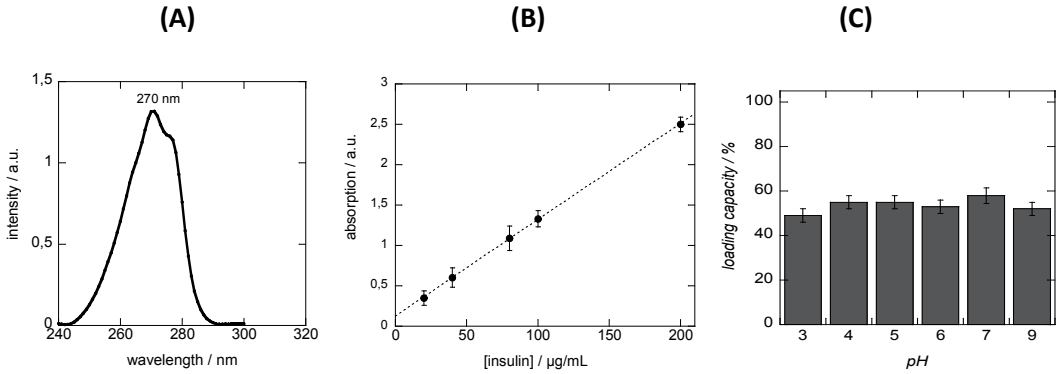

Figure S1: (A) UV/Vis spectrum of free human insulin (100 µg/mL) in water: (B) calibration curve; (C) human insulin loading capacity of rGO as a function of pH (by mixing rGO (1 mg/mL) with human insulin (100 µg/mL).

The human insulin loading capacity was calculated from such measurements according to:

$$loading\ capacity = \left(\frac{c_0 - c_{sup}}{c_{rGO}}\right) \times 100\ \%$$

with c_o being the human insulin concentration added to rGO (100 µg mL^{-1}), c_{sup} the concentration of insulin in the supernatant after reaction with rGO (determined by UV/Vis) and c_{rGO} the concentration of rGO (1 mg mL^{-1}).

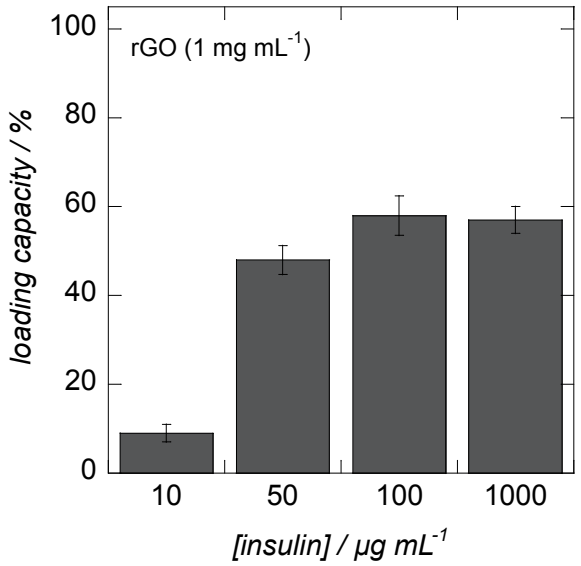

Figure S2: Change in loading capacitance by keeping the concentration of rGO constant (1 mg mL^{-1}) and changing the concentration of human insulin added (10-1000 µg/mL); average of four experiments, with error bars representing the standard deviation

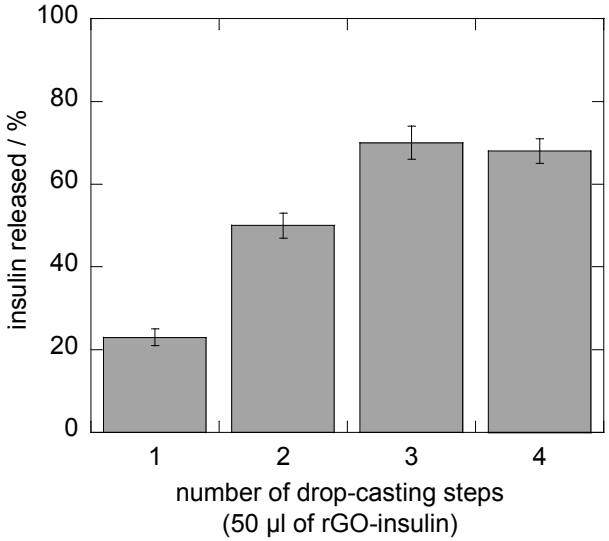

Figure S3: Influence of the number of drop-casting steps on the percentage of released human insulin into PBS buffer upon biasing the electrode at -0.8V for 30 min ; average of four experiments, with error bars representing the standard deviation