

Supplementary

La(OH)₃ Multi-Walled Carbon Nanotube/Carbon Paste-Based Sensing Approach for the Detection of Uric Acid—A Product of Environmentally Stressed Cells

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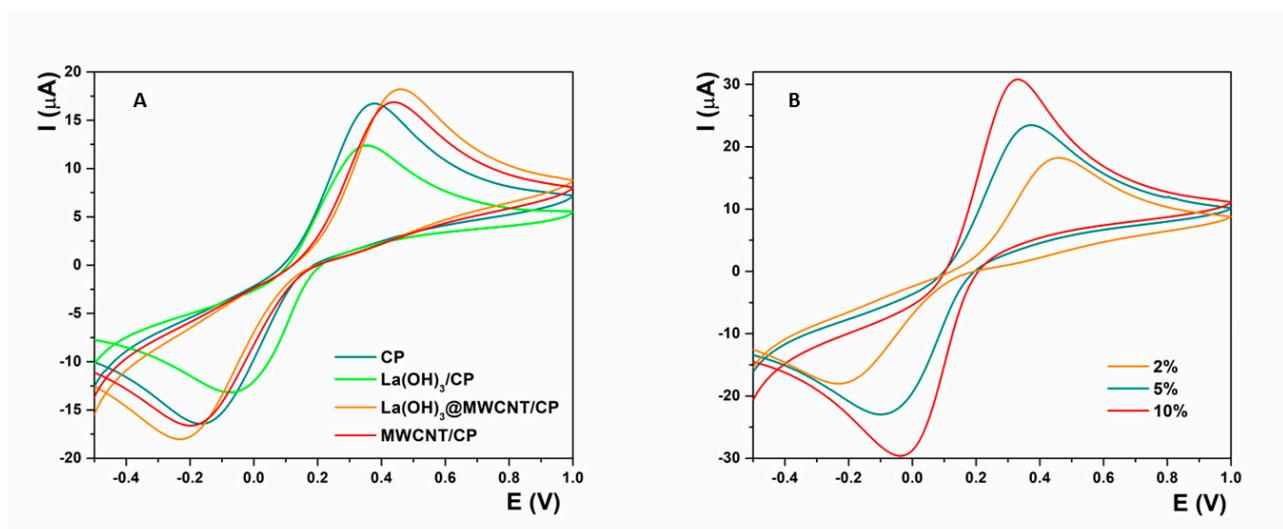


Figure S1. Cyclic voltammograms in 5mM Fe^{2+/3+} in 0.1 M KCl and 0.1 M PB pH 6, in the potential range from -0.5 V to 1 V at the 50mV/s scan rate of **A**) unmodified CP electrode and electrodes modified with 2% of La(OH)₃, MWCNT and La(OH)₃@MWCNT **B**) electrodes modified with 2%, 5% and 10% of La(OH)₃@MWCNT.

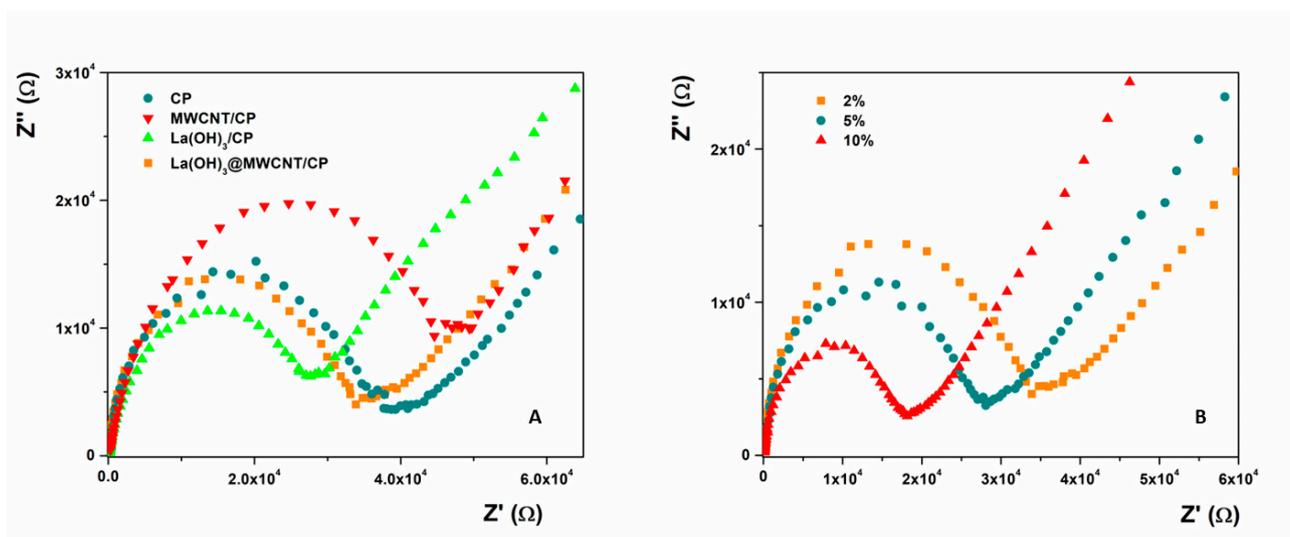


Figure S2. EIS spectra in 5 mM Fe^{2+/3+} in 0.1M KCl and 0.1 M PB pH 6 on 0.3 V and in the frequency range from 10 kHz to 10 mHz of **A)** unmodified CP electrode and electrodes modified with 2% of La(OH)₃, MWCNT and La(OH)₃@MWCNT **B)** electrodes modified with 2%, 5% and 10% of La(OH)₃@MWCNT.

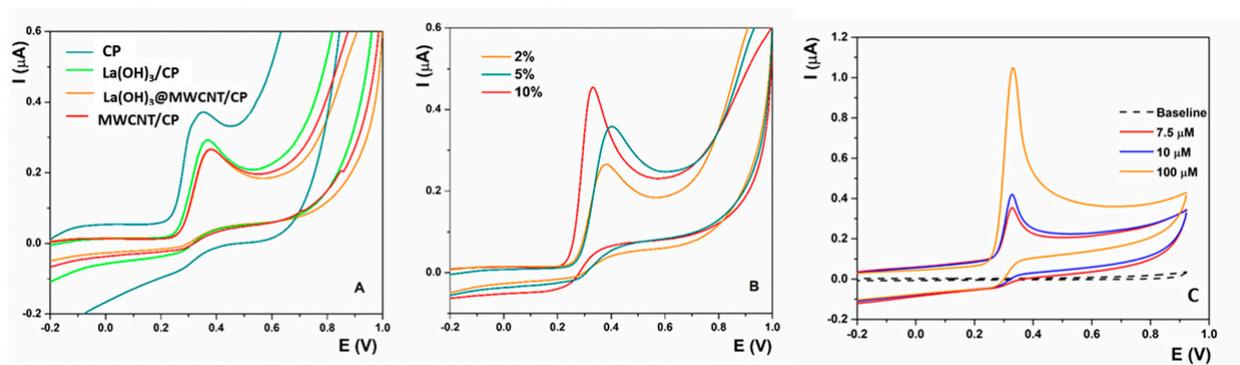


Figure S3. **(A)** CV in 0.1 M PB pH 6 in the presence of 10 μM UA - unmodified CP electrode and electrodes modified with 2% of La(OH)₃, MWCNT and La(OH)₃@MWCNT **(B)** CV in 0.1 M PB pH 6 in the presence of 10 μM UA - electrodes modified with 2%, 5% and 10% of La(OH)₃@MWCNT **(C)** CV in 0.1 M PB pH 6 in the presence of 7.5; 10 and 100 μM UA using electrode modified with 10% of La(OH)₃@MWCNT.

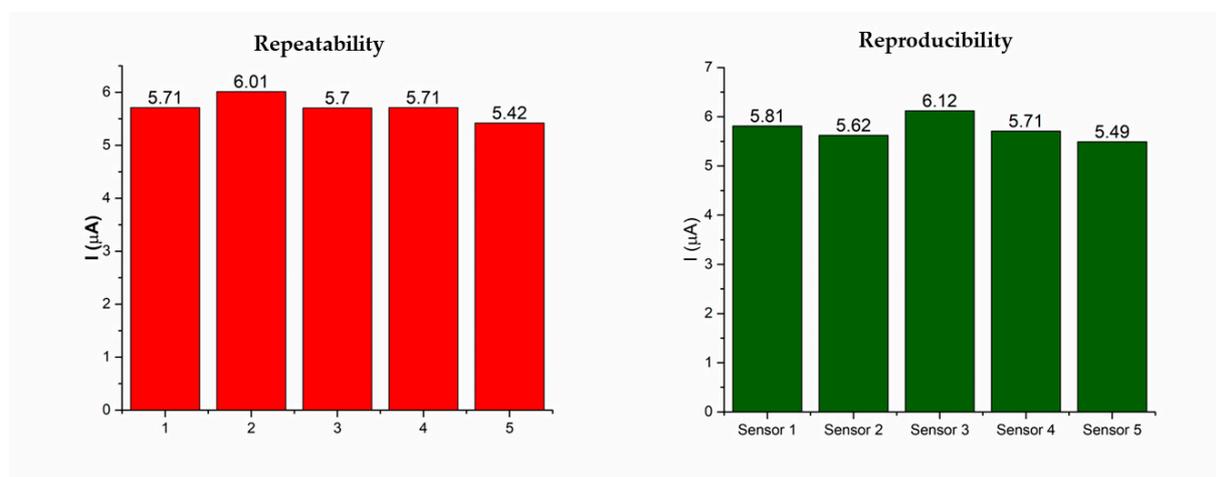


Figure S4. Repeatability and reproducibility studies for proposed sensor.

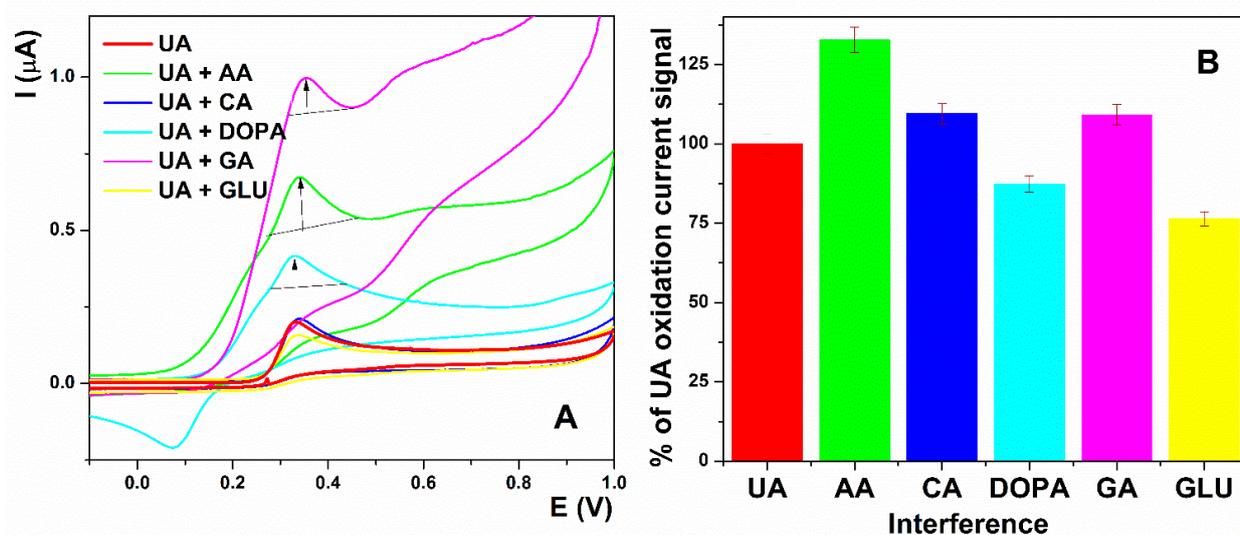
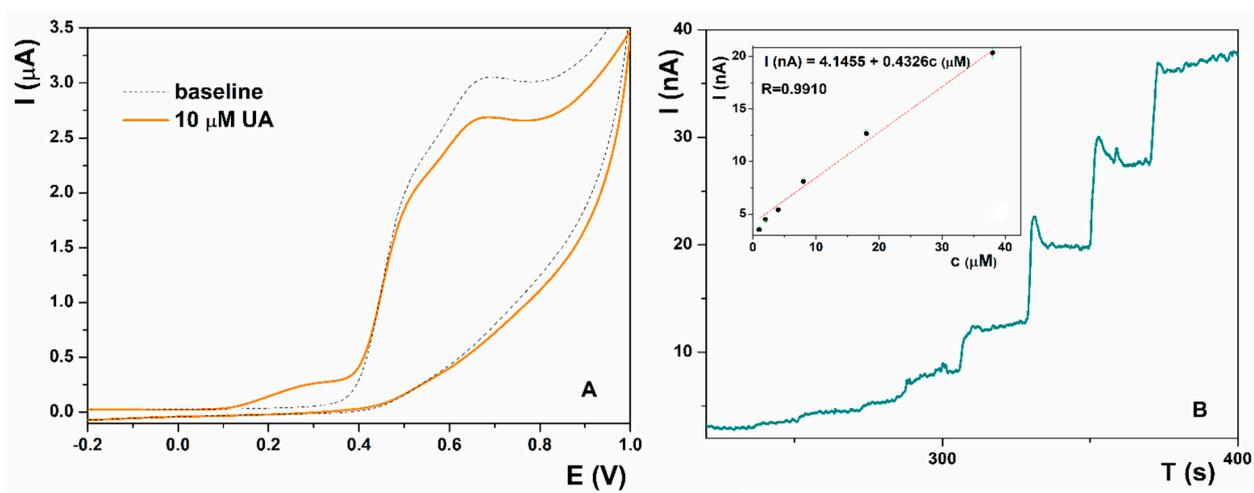
Figure S5. Studying the impact of potential interferences on UA detection A) CV in 0.1 M PB pH 6, at the potential range from -0.05 V to 1 V at the scan rate 50 mV/s, B) Histogram – percent of the anodic peak current which arose from the oxidation of UA.

Figure S6. (A) CV in the potential range from 0.5 V to 1 V at the scan rate of 50 mV/s in the biological matrix in the presence and absence of UA (B) Amperometric curve of UA in the real sample matrix (inset B) Calibration curve of UA standard solutions in the biological matrix.