Electronic Supplementary Material (ESI) for Chemical Communications
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Supporting Information

Impedimetric biosensor for early detection of cervical cancer

Sudeshna Chandra, Neerav Barola and Dhirendra Bahadur*

Cell cycle analysis by fluorescence-activated cells sorting (FACS): 1×10^{6} cells were collected and fixed in 0.5 ml of 70% ethanol for overnight and then centrifuged at 2,000 rpm for 10 min and washed in ice-cold PBS. The cell pellets were re-suspended in 0.5 ml PBS and 400 μL RNase was added and incubated at 37°C for 30 min. Then 400 μL of propidium iodide (PI) was added to the cells and kept at 4°C for 30 min. Then the cells were transferred to FACS tubes and analyzed using BD FACSAria Flow Cytometer. DNA distribution data as obtained by analyses of PI binding (Fig. S1) showed that the cell fraction contains highest percentage of G1 phase and the cell cycle phase distributions has 79.3, 14.6 and 8.4 % for G0/G1, S, and G2/M phases, respectively.

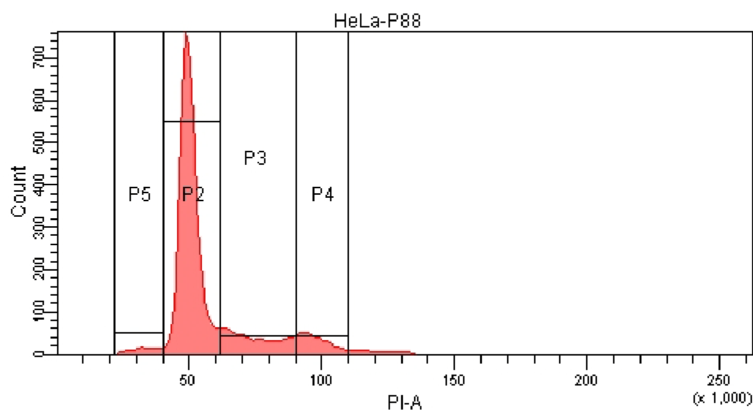

Figure S1: FACS analysis showing distribution of cells in each phase of cell cycle

The selectivity of the modified electrode was also investigated for specific response towards breast cancer cells (MCF-7) and normal mouse fibroblast cells (L-929). After incubation with these cells, the biosensor showed no response to either of the cells indicating its selectivity only for Hela cells.

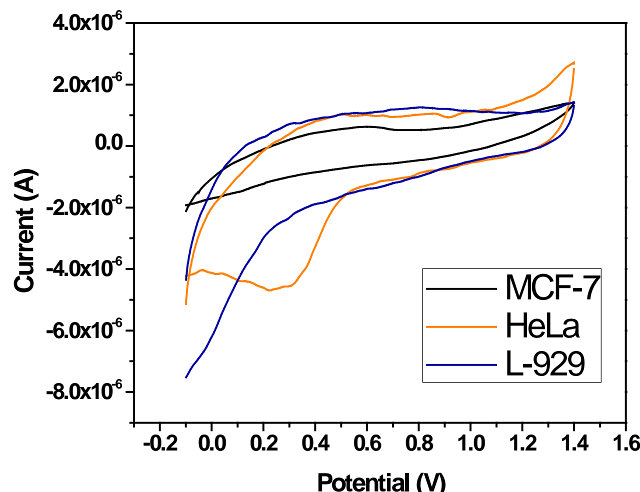

Figure S2: CVs of modified electrode in response to Hela, MCF-7 and L-929 cells.

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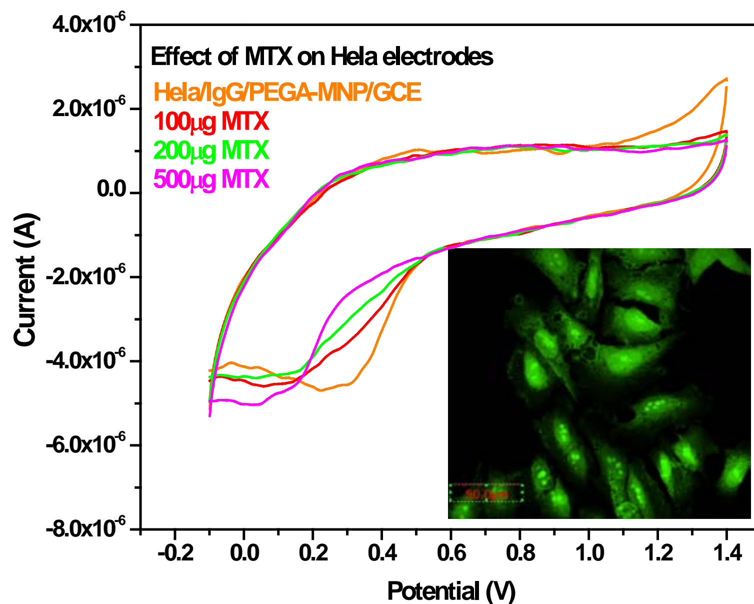

Figure S3: CVs of Hela cells treated with varying concentration of MTX and confocal image of cellular internalization of MTX-PEGA-MNPs (inset); Magnification is 60X.

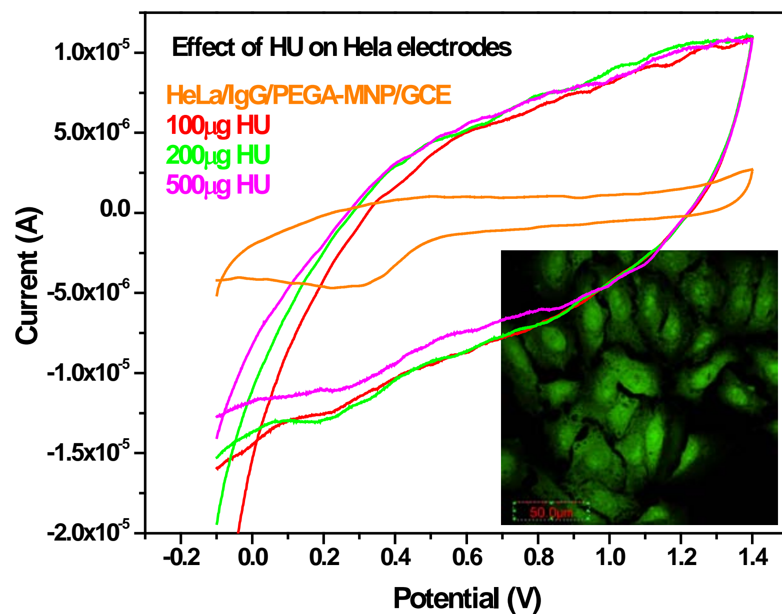

Figure S4: CVs of Hela cells treated with varying concentration of HU and confocal image of cellular internalization of HU-PEGA-MNPs (inset); Magnification is 60X.