

Supporting Information

Electrochemical surface coating of dopamine-hyaluronic acid conjugates for the production of anti-biofouling electrodes

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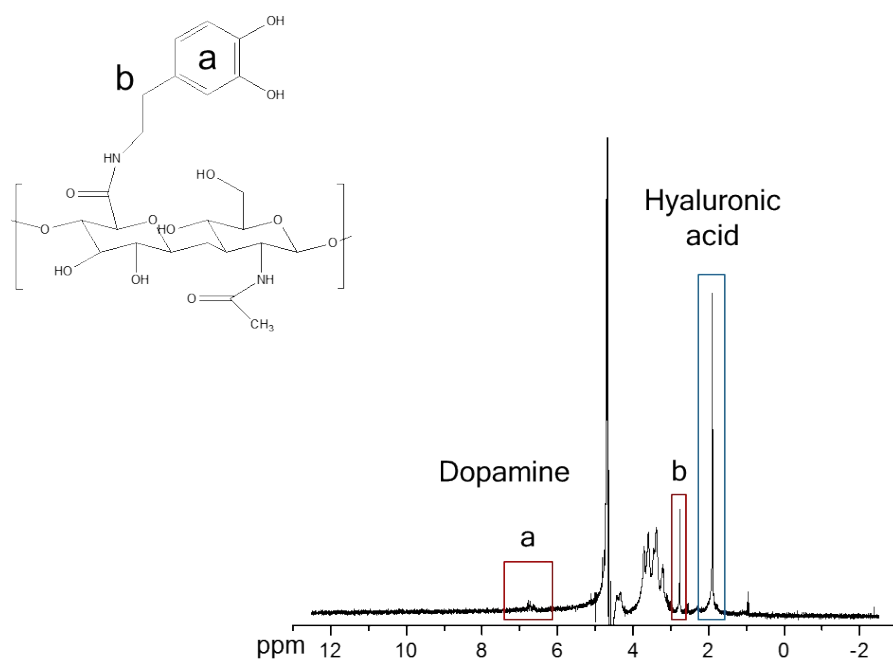


Figure S1. ^1H NMR spectrum of dopamine-hyaluronic acid conjugates (in D_2O).

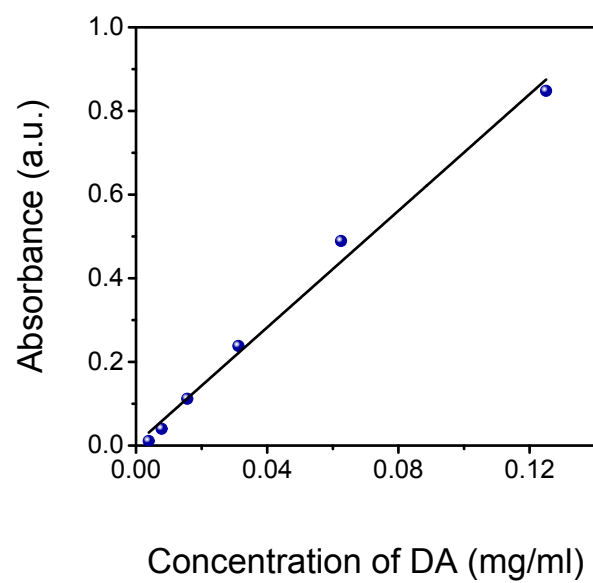


Figure S2. Standard curve of dopamine and absorbance at 280 nm.

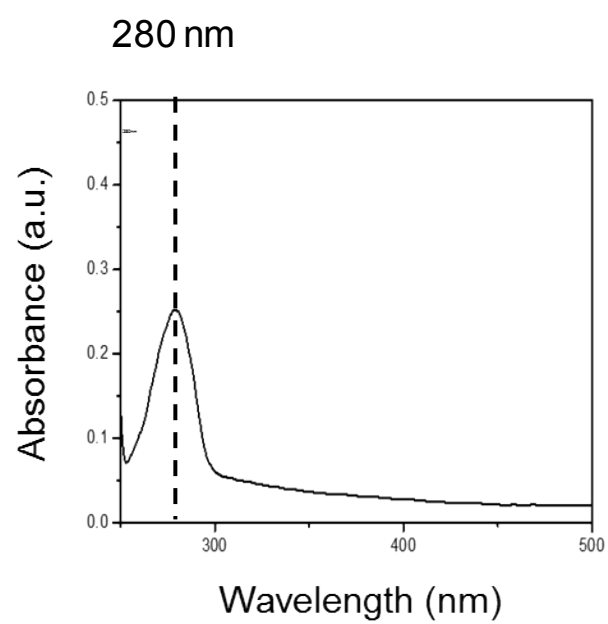


Figure S3. UV-vis spectra of DA-HA solution with a peak appearing at 280 nm.

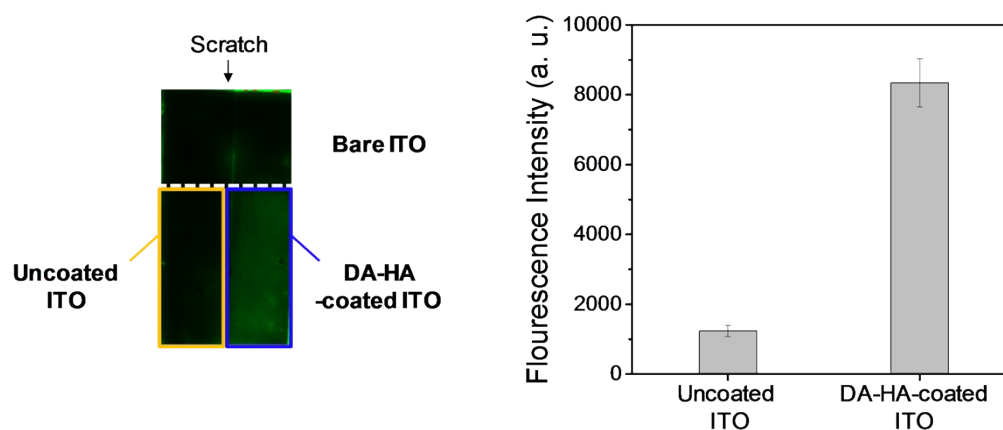


Figure S4. A florescence image of the electrode selectively coated with DA-HA. Immunostaining was performed using HABP-F and substantial florescence was observed on the HA-coated electrodes of ITO, whereas no detectable florescence was observed for the bare and uncoated electrodes.

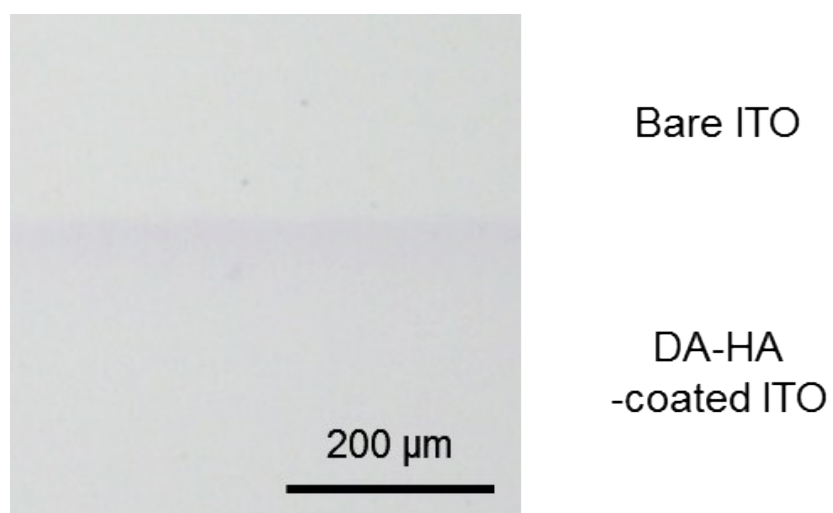


Figure S5. Toluidine Blue O (TBO) staining of the DA-HA coated electrode.

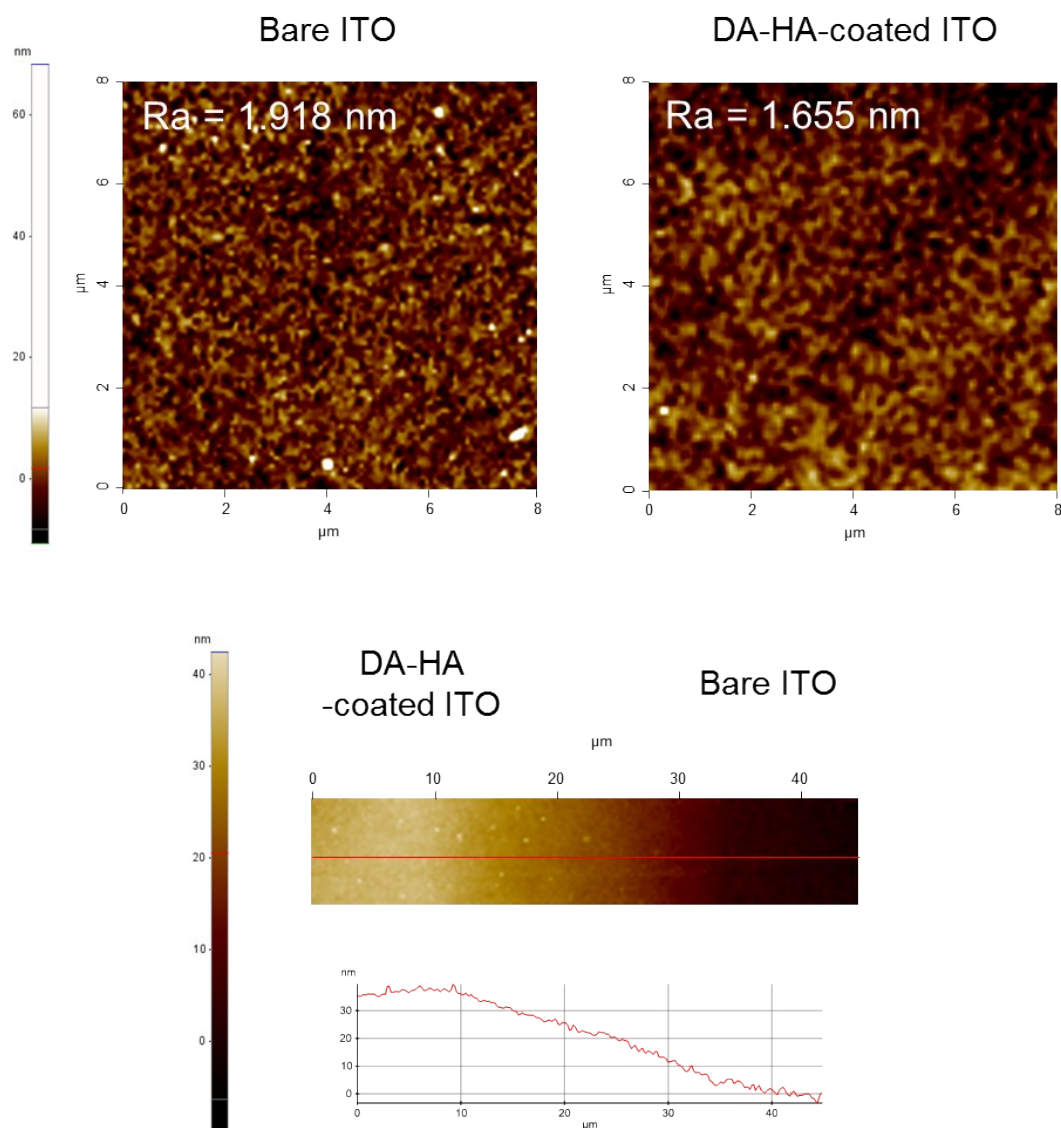


Figure S6. AFM images of a bare ITO and DA-HA coated ITO (top). AFM image at the border of bare and the DA-HA-coated area (bottom).

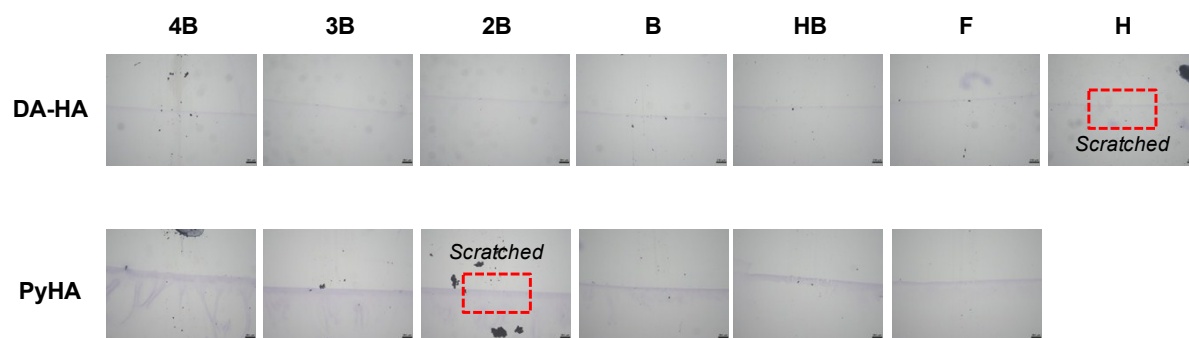


Figure S7. Optical images of the DA-HA coated ITO and the PY-HA coated ITO after scratching with different pencils (from 4B to H).

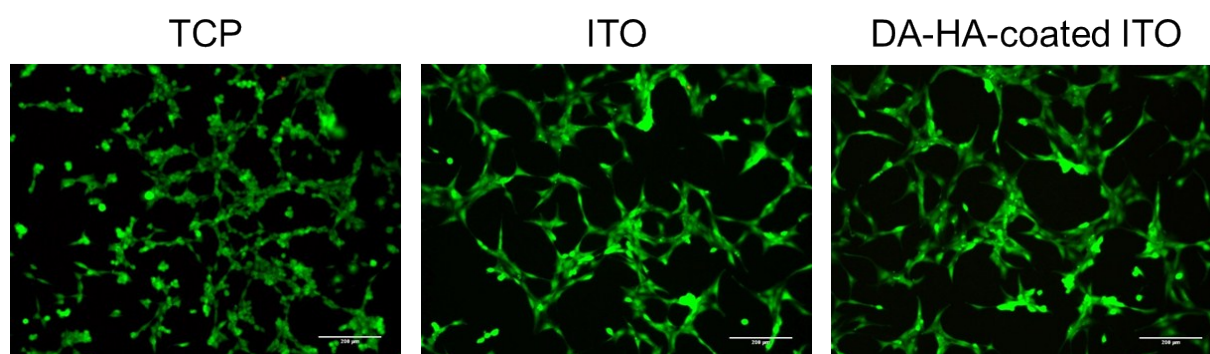


Figure S8. Live/dead staining of NIH-3T3 cells after direct contact with electrodes (ITO and DA-HA-coated ITO) for 48 h. Live and dead cells stained green and red, respectively. For the cytocompatibility studies, NIH-3T3 fibroblasts were first seeded on tissue culture plate (10^4 cells per well) in 12 well culture plates and incubated for 24 h in DMEM supplemented with 10% FBS, and penicillin/streptomycin at 37°C in a humidified incubator with 5% CO₂. After 24 h pre-incubation, the sterile electrodes (UV exposed for 3 h) were then carefully placed on the cells growing 12 well culture plates to make the DA-HA-coated surface and unmodified ITO surface have direct contact with cells. After additional 48 h of incubation with direct contact, cells were stained by a Live/dead staining for cytotoxicity assessment. For a control, cells were incubated without any introduction of substrates during incubation and stained, which was marked as 'TCP'. The stained cell images were obtained by a fluorescence microscope.