Electronic Supplementary Material (ESI) for Journal of Materials Chemistry B.

Electronic Supplementary Information

Real-time monitoring of human Schwann cells on heparin-collagen coatings reveals enhanced adhesion and growth factor response

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A preliminary qualitative test was carried out to determine the optimal initial cell concentration to be used in the experiments. Cells were seeded at 10,000, 40,000, 65,000, and 100,000 cells / cm^2 per well and confluence was observed after three days. Two culture conditions were compared: uncovered surfaces vs. $(HEP/COL)_6$. The results are shown in **Figure S1** as fluorescence microscopy images.

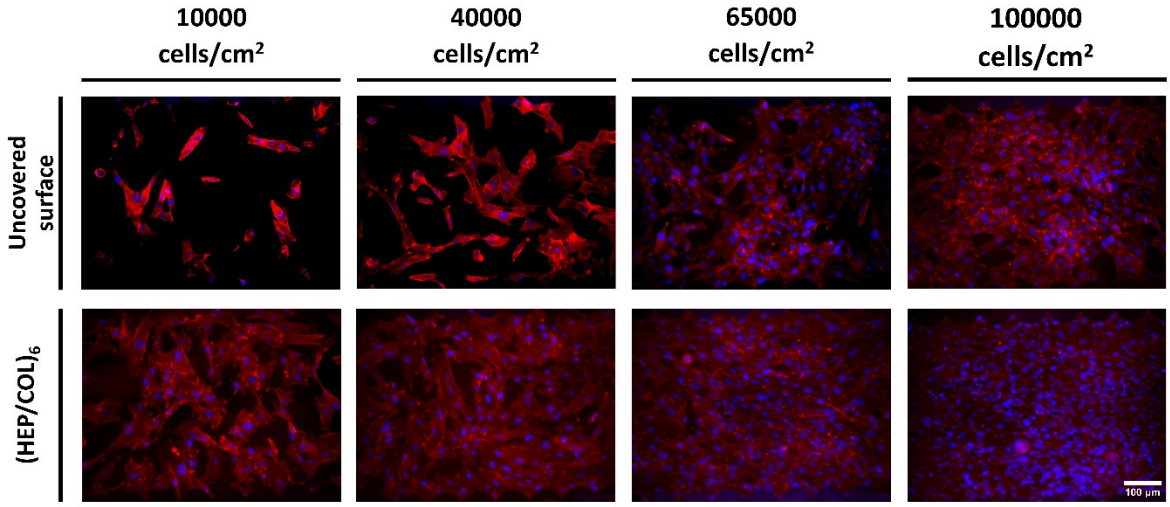

Figure S1. Qualitative evaluation of the cell confluence after 3 days of culture according to the initial cell number. Representative fluorescence microscopic images of hSCs nuclei and actin labeled with Hoechst and Actin Red, respectively. Cellular behavior in cell cultures on uncoated surface and on $(HEP/COL)_6$.

The three most important stages of the colorimetric assay for the detection of Heparin using the Taylor's blue dye are shown in the **Figure S2**. Coatings of 1, 2, 3, 4, 5, and 6 bilayers of HEP/COL were made on a 24-well plate. Once the bilayers were completely dry, the dye solution was added, which changes from blue to purple when interacting with heparin. After the incubation period, the dye was removed, and the heparin adhered to the bottom of the well was stained purple. The last step is carried out by adding the dissociation reagent with stirring to remove the heparin from the bottom of the well. This step includes changing from colorless to light blue.

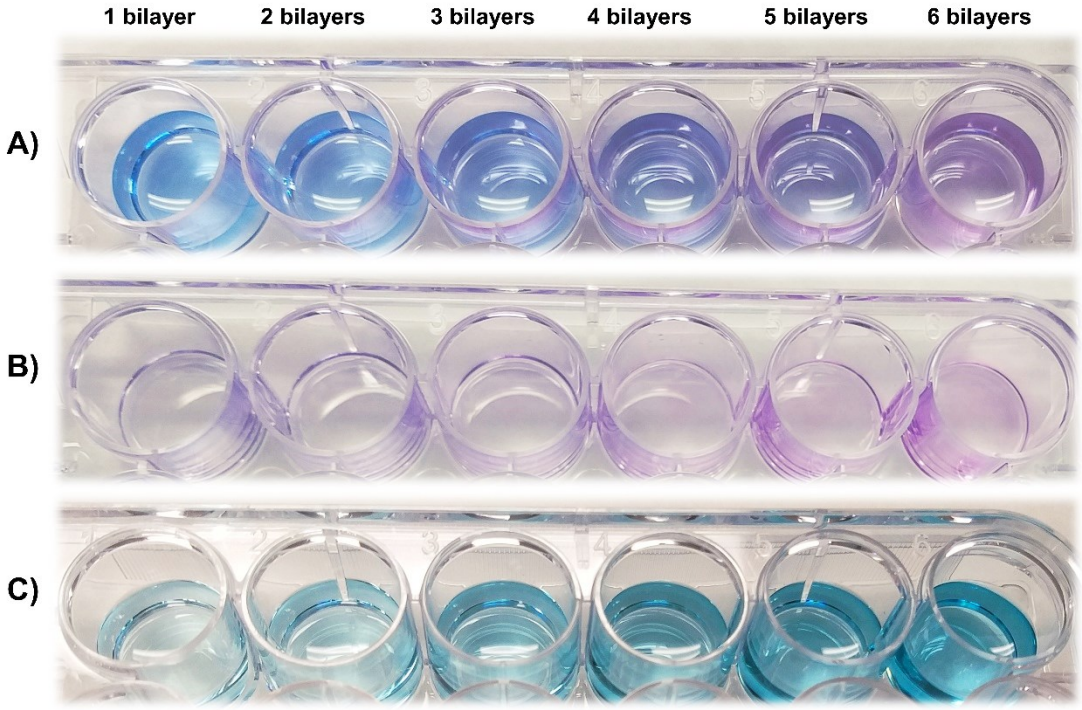

Figure S2. Three main stages of the qualitative colorimetric assay for the detection of heparin with Taylor's Blue. A) Incubation with Taylor's Blue dye (30 minutes), B) Dye adhered to heparin (purple color at the bottom of the well) after removal of the solution, and C) Incubation with dissociation reagent with shaking for 10 minutes (change from colorless to light blue). The three images correspond to the same set of samples.

Figure S3 shows the results for two experiments performed in which we analyzed the cellular behavior of hSCs in uncoated sensors with and without NGF added to the culture medium. An initial concentration of 20000 cells/cm^2 were

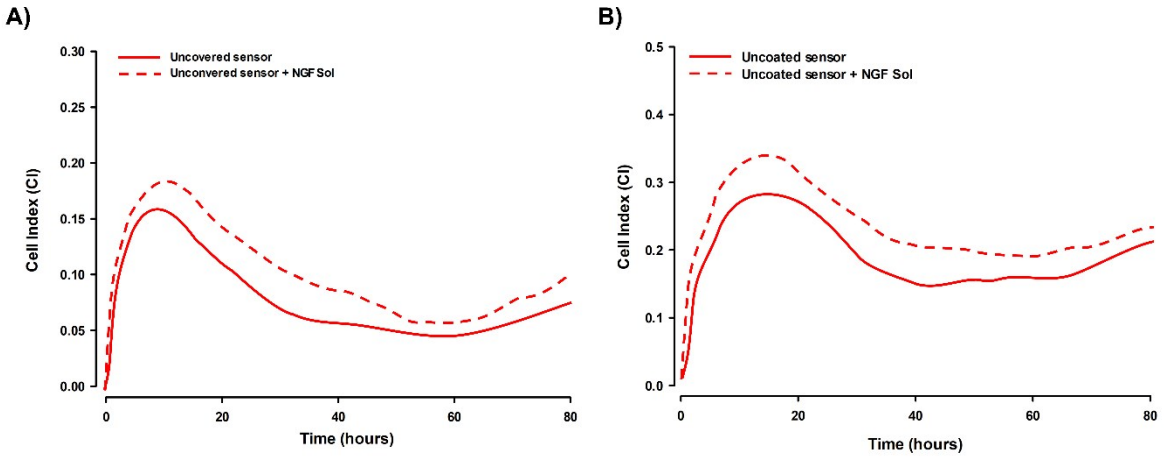

Figure S3. Monitoring of real-time hSCs growth on uncoated sensors. Initial concentration of 20000 cells/cm^2 A) Experiment 1. Cellular behavior during 80 hours of cell culture, passage No. 24; and B) Experiment 2. Cellular behavior during 80 hours of cell culture, passage No. 19.

seeded from our cell stock (passages No. 19 and 24). The Cell Index values were determined using the iCELLigence technology for 80 hours of cell culture.