Supporting Information for

110th Anniversary: Fast and easy-to-use method for coating tissue culture polystyrene surfaces with non-fouling copolymers to prevent cell adhesion

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# Equal contribution
Figure S1: $^1$H-NMR spectra of SPSTY5 performed on a Brooker Ultrashield 400 MHz spectrometer. A mixture of deuterium oxide and methanol-d4 (80/20 v/v) was used as solvent.

The global monomer conversion was calculated from the $^1$H NMR spectra following Equation S1:

$$X = \left(1 - \frac{A + A'}{\frac{B}{5} + \frac{C}{2}}\right)$$

(S1)

Where X is the monomer conversion, A and A’ the area of the peaks attributed to the vinyl hydrogens in the unreacted monomer, B the area of the peak associated to the aromatic protons of styrene (either as monomer or incorporated in the polymer chain) and C the area of the peak referred to the two protons close to the methacrylate group in the SPMAK (either as monomer or incorporated in the polymer chain).
Figure S2: Calibration curve obtained for the sample SPSTY4, reported as an example. This calibration curve was obtained by measuring the area of the fluorescence emission spectrum in the range 550 - 580 nm, with an excitation wavelength of 540 nm, for polymer solutions at different concentrations. The same procedure was applied to all of the samples synthesized. The results shown are the average of three independent experiments with the error bars representing the standard deviation of the measurements.
**Figure S3:** Percentage of adsorbed polymer as function of the polymer concentration in the liquid solution at the equilibrium ($C_e$) for the sample SPSTY4. The results shown are the average of three independent experiments with the error bars representing the standard deviation of the measurements.

The polymer density was calculated according to **Equation S2**:

$$
\text{Polymer density} = \frac{\text{Ads}r \times C_i \times V}{A}
$$

(S2)

$C_i$ is the initial concentration at which the polymer is deposited to the tissue culture petri dish.

$V$ is the volume of the solution deposited on the surface.

$A$ is the surface area of the tissue culture petri dish.
Adsr is the relative adsorption of polymer to the surface and it was calculated following Equation S3.

\[
\text{Adsr} = 1 - \frac{C_{\text{liq}}}{C_i}
\]

Where \( C_{\text{liq}} \) and \( C_i \) are the polymer concentrations in the liquid at equilibrium and before being dispensed to the surface, respectively. The polymer concentrations were determined by analyzing the fluorescence intensity of the solutions after calibration of the instrument.
**Figure S4:** Variation of the polymer solution fluorescence intensity before (white bars) and after (grey bars) ultrafiltration with Whatman 0.2 μm filters at three different solid contents (i.e. 5, 10 and 20 g/L) for the sample SPSTY4. The data are normalized with respect to the fluorescence intensity of the polymer solution at a given concentration before ultrafiltration. The experiments were performed in triplicate and the error bars express the standard deviation of the three measurements.
Figure S5: Percentage of unattached cells as function of the polymer composition when the coating was performed with an initial polymer concentration of 1 g/L. The experiments were conducted in triplicates with the error bars representing the standard deviation of the measurements.
**Figure S6**: Variation in the surface contact angle before (white bars) and after (grey bars) washing of the surface with a 10 wt. % FBS solution in PBS. The control was obtained on bare TCPS dishes. The rinsing protocol with the FBS solution is the same used for washing with distilled water and is reported in Section 2.4. The data shown are the average of three independent experiments and the error bars represent the standard deviation.

**Figure S7**: Cell viability after 48 h expressed as the percentage of the cells alive over the total of the cells counted for the control and the surface coated with the SPSTY4 polymer, as example. The analysis was performed in the case of the CHO-DP12 cells and is the result of three independent experiments.
**Figure S8:** A375-P cells cultivated on a normal tissue culture petri dish (a) and on a coated surface (b) and HFF-1 cells cultivated on a normal tissue culture petri dish (c) and on a coated surface (d) after 48 hours of culture. The polymer used for the coating was the SPSTY4 deposited at a concentration of 5 g/L. Images were taken with a 10x magnification.