Electronic supplementary information to

Polymer brushes based on PLLA-b-PEO colloids for preparation of protein resistant PLA surfaces

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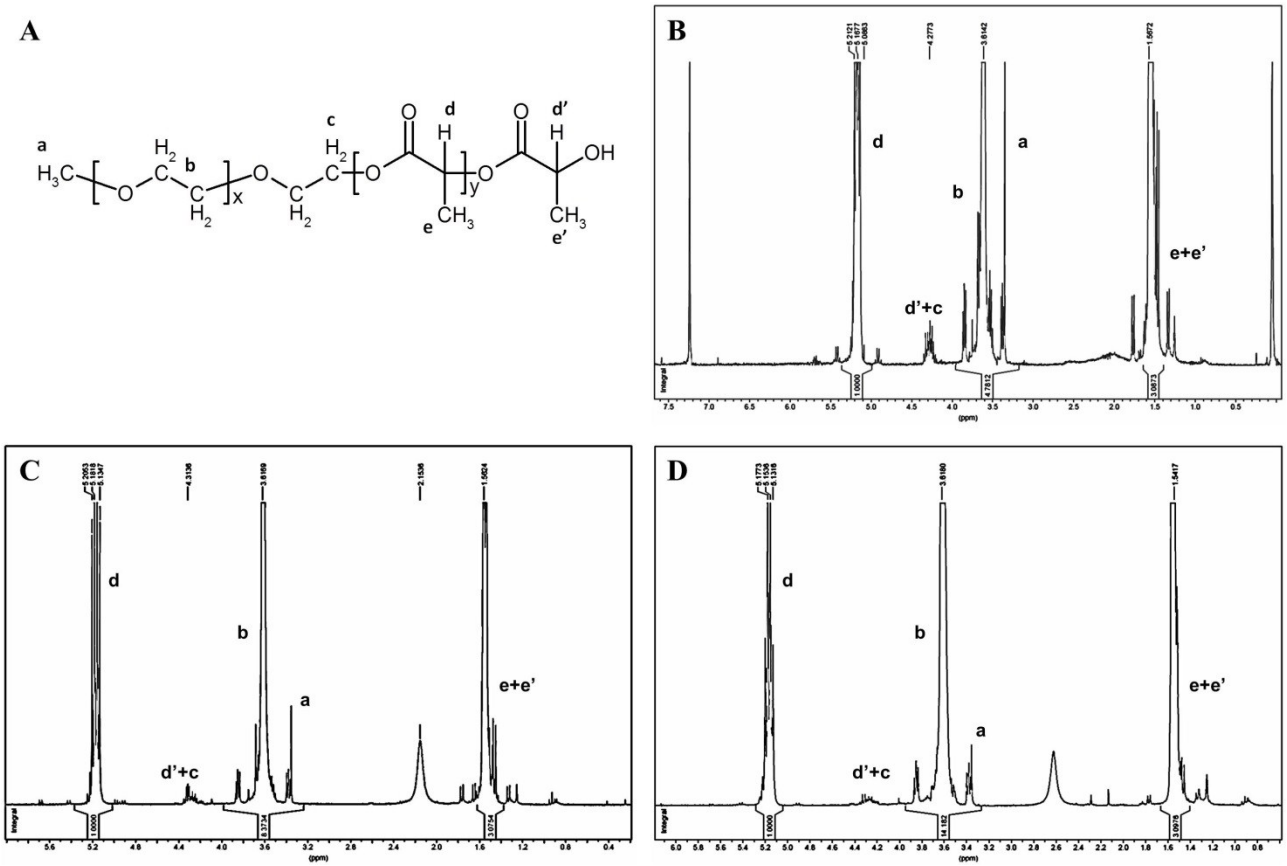

Figure S1: [1]H NMR spectra of poly(lactide)-*b*-poly(ethylene oxide) copolymers (A) with matching PLLA blocks and increasing PEO block length from 5kDa to 15 kD, i.e. PLLA-*b*-PEO 7/5 (B), 7/10 (C) and 7/15 (D).

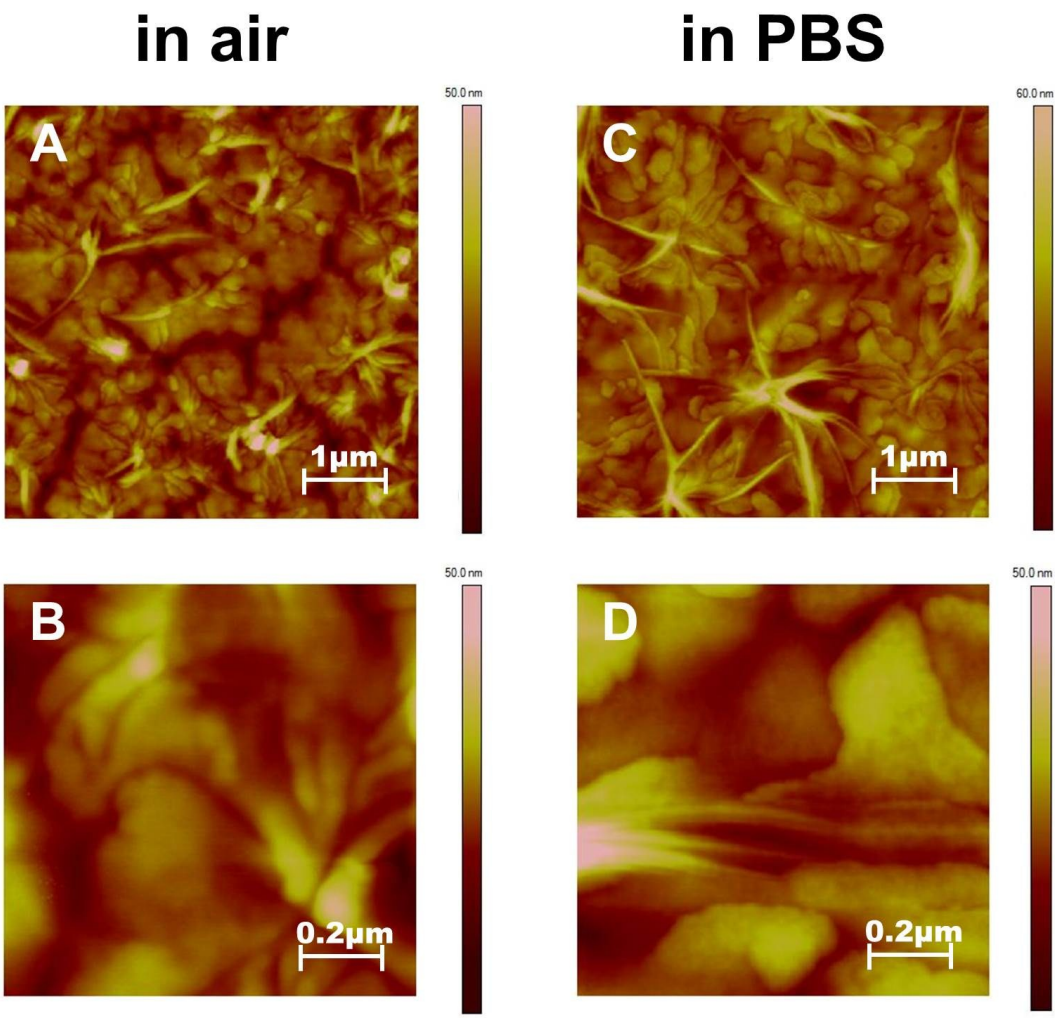

Figure S2: AFM topography images of the PLLA surface taken in air (A, B) and in PBS (C, D).

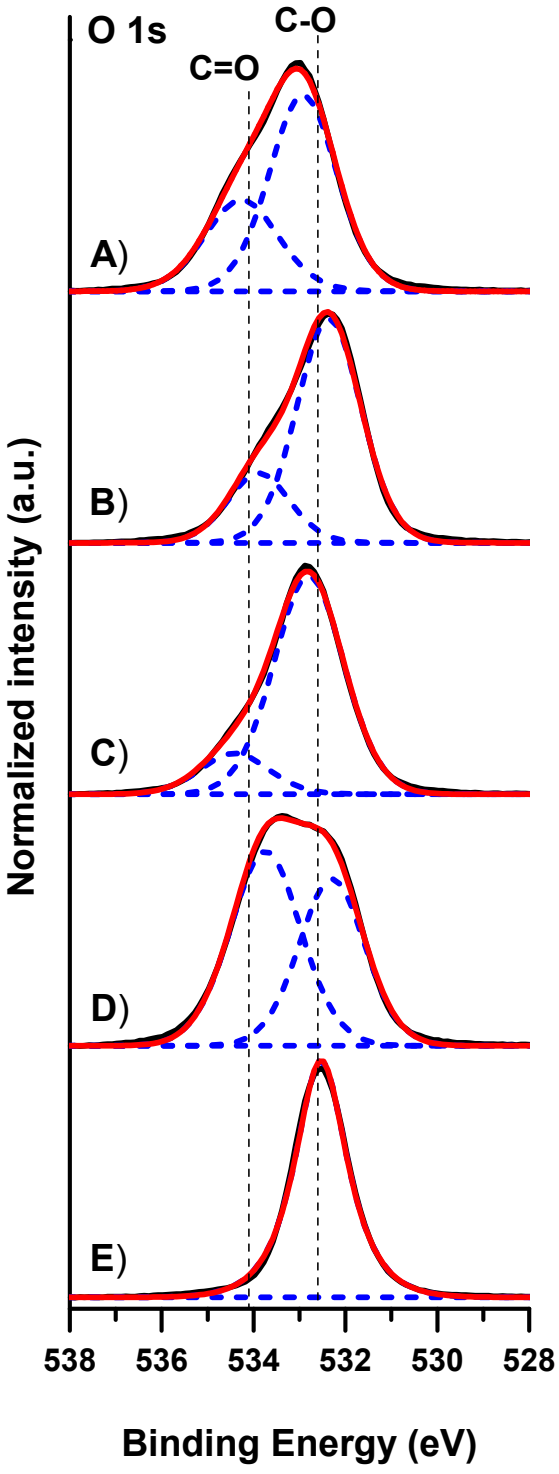

Figure S3: Representative high resolution O 1s XPS spectra of 7/5 (A), 7/10 (B) and 7/15 (C) PLLA-b-PEO/PLLA thin polymer films on a PDA adhesion layer. Spectra of PLLA (D) and PEO (E) are presented for comparison.

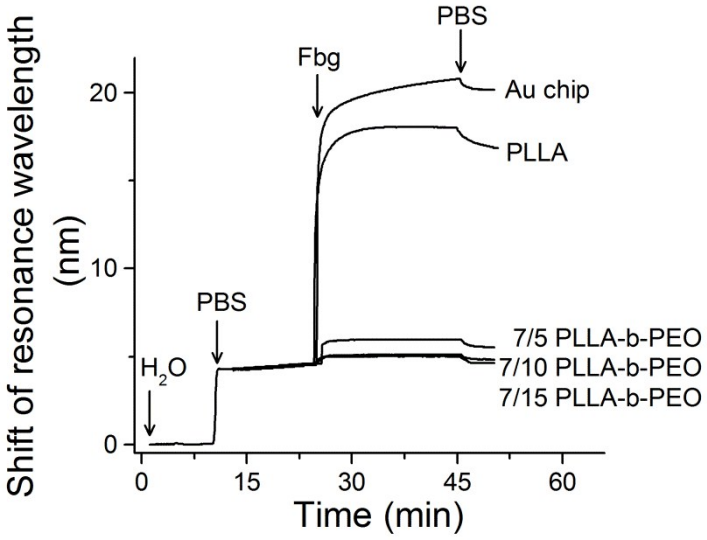

Figure S4: A sensogram from SPR measurement of adsorption of Fbg to (co)polymer surfaces.

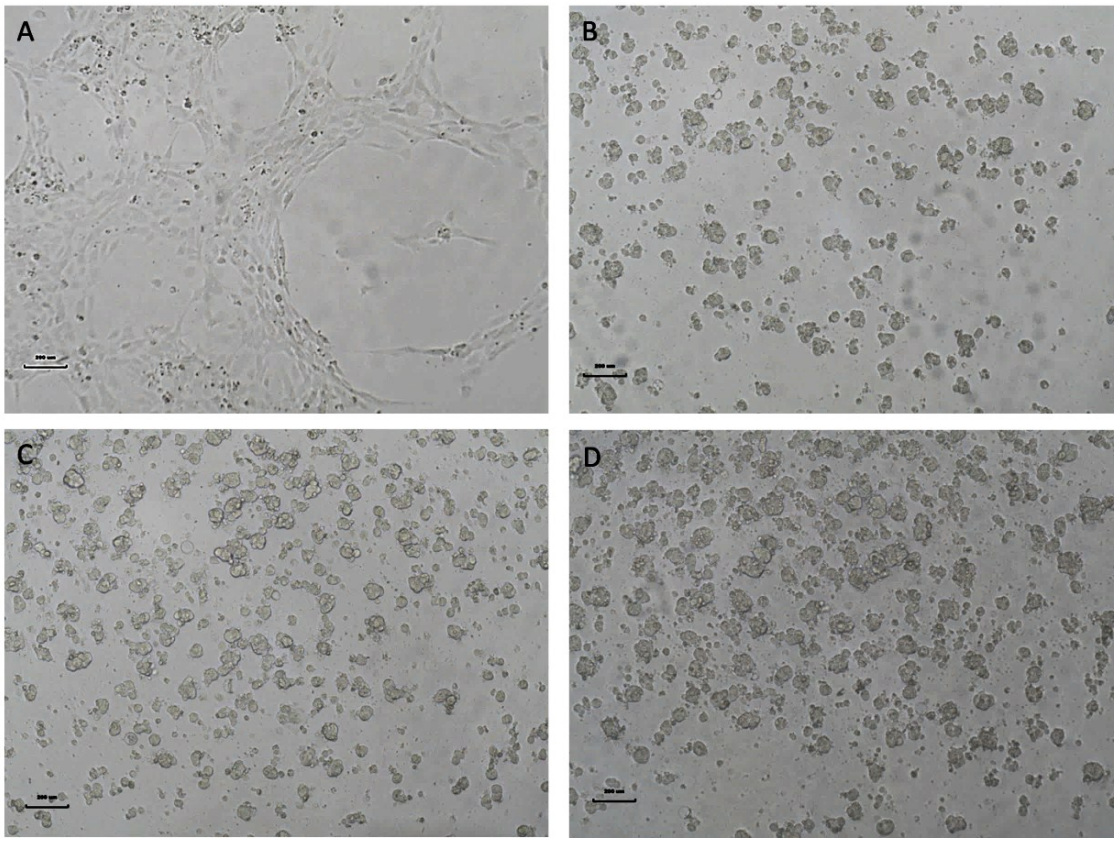

Figure S5: Light microscopy micrographs of the attachment of HUVEC to the plain PLLA surface (A) and PLLA-b-PEO layers 7/5 (B), 7/10 (C) and 7/15 (D) after 24 hours since cell seeding. Scale bar: 200 μm.

Table S1: The comparison of water-air contact angles Θ_A and Θ_R, and ellipsometric thickness h of copolymer layers of 7/10 PLA-b-PEO copolymers with a different stereoregularity of the poly(lactide) block before and after stability test in PBS for 7 days at 37°C. [1]

Surface	Original surface			After 7 days in PBS, 37°C		
	Θ_A [°]	Θ_R [°]	h [nm]	Θ_A [°]	Θ_R [°]	h [nm]
DL-LA7/10*	51±7	15±3	22±2	77±2	33±2	0.6±0.6
L-LA7/10**	28±2	7±1	12±2	29±2	11±2	8±2

* 7/10 PLA-b-PEO copolymer with amorphous poly(DL-lactide) block

** 7/10 PLA-b-PEO copolymer with semi-crystalline poly(L-lactide) block

References

[1] Tresohlava (Mazl Chanova), E. *Polymer Biomaterials for Tissue Engineering: Biomimetic Modification of Polylactide by Deposition of PLA-b-PEO copolymers.* Prague, 2010. Dissertation. University of Chemistry and Technology Prague, Czech Republic.

Table S2: XPS analysis of the surface composition of PLLA, PEO and PLLA-b-PEO block copolymer surfaces.

Surface	C 1s envelope			O 1s envelope		$(O—\underline{C}=O)_{PLLA}/(\underline{C}—O)_{PEO}$		$(\underline{O}=C)_{PLLA}/(\underline{O}—C)_{PEO}$	
	$\underline{C}$-C (285.0 eV)	$\underline{C}$-O (286.5±0.3 eV)	$\underline{C}$(=O)-O (289.2±0.1 eV)	$\underline{O}$-C (532.6±0.3 eV)	$\underline{O}$=C (534.1±0.3 eV)				
	atomic %			atomic %		Exp.	Theor.	Exp.	Theor.
PLLA	22.32	19.18	19.99	17.12	21.39				
PEO	3.33	63.37	0.00	33.30	0.00				
7/5	11.21	41.23	11.24	24.09	12.22	0.37	0.42	0.85	0.85
7/10	10.09	43.46	10.12	27.94	8.39	0.30	0.24	0.40	0.49
7/15	7.78	50.58	7.12	29.12	5.4	0.16	0.14	0.22	0.28