SUPPORTING INFORMATION

(Macro)Molecular Imprinting of proteins on PCL electrospun scaffolds

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Figures

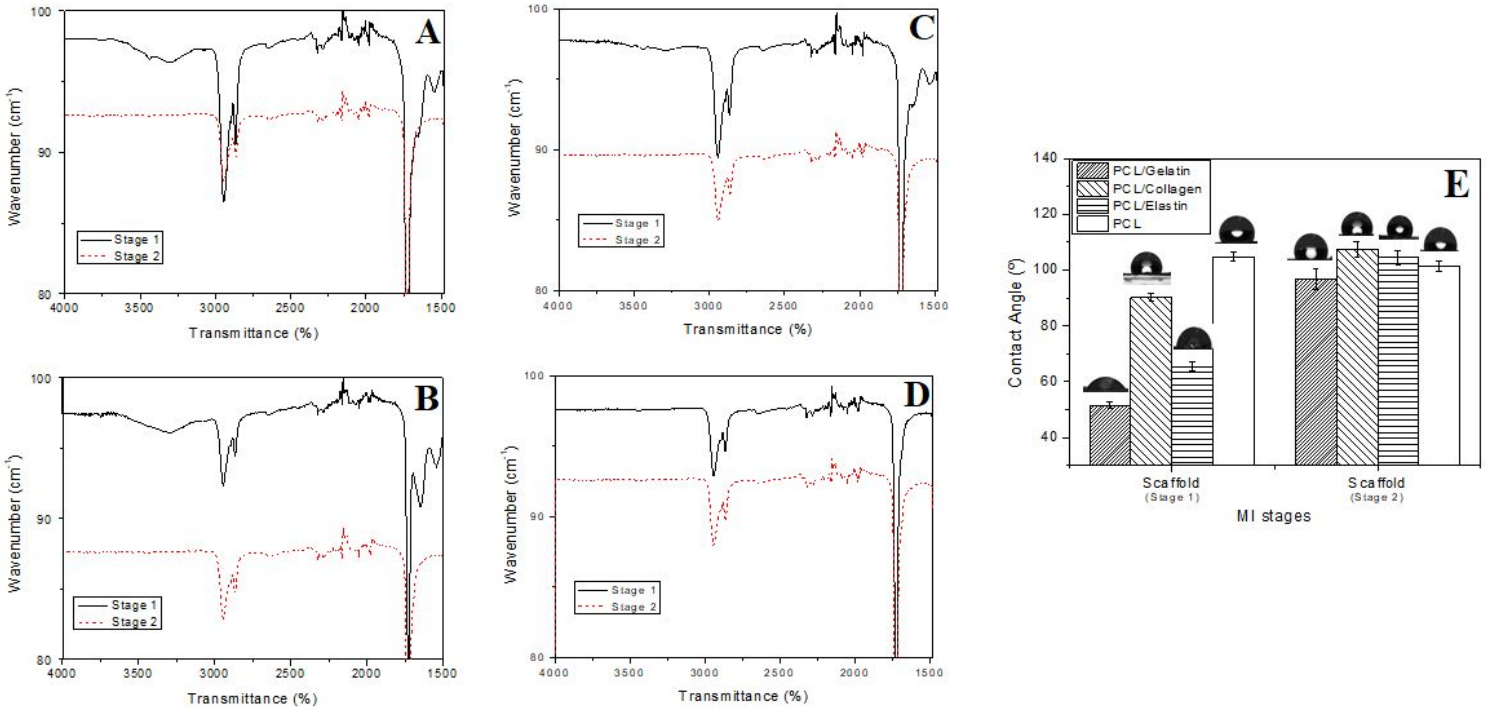
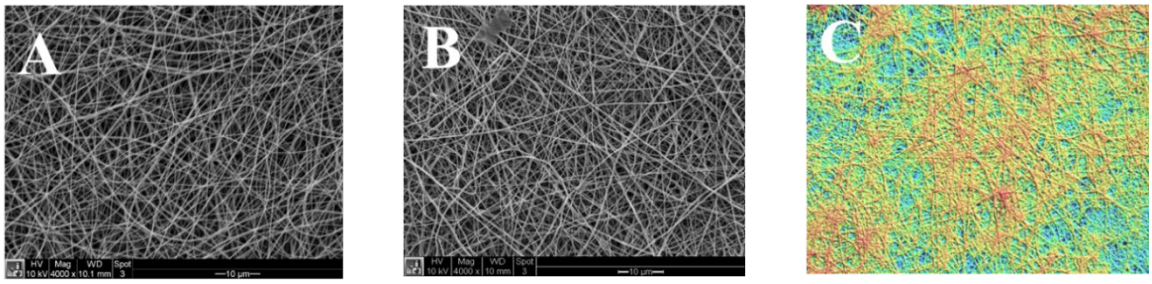


Fig. S1. FTIR profiles of (A) PCL-Gelatin, (B) PCL-Collagen, (C) PCL-Elastin and (D) PCL systems obtained *via* electrospinning (Stage 1) and after the solvent extraction stage (Stage 2). (E) Water contact angle (WCA) measurements obtained for each system (PCL-Gelatin, PCL-Collagen, PCL-Elastin and PCL) obtained *via* electrospinning (Stage 1) and after the solvent extraction stage (Stage 2). Images of the drops during the WCA measurements have also been included.



ROUGHNESS	Sa (µm)	Sq (µm)	Sz/Sa
PCL/Gelatin	0.63 ± 0.14	0.80 ± 0.10	11.95 ± 2.18

Fig. S2. SEM images (A) before and (B) after solvent extraction of the PCL-Gelatin system. (C) A topographical image and different roughness parameters (S_a, S_q and S_z/S_a ratio) for the PCL/Gelatin system were also included.

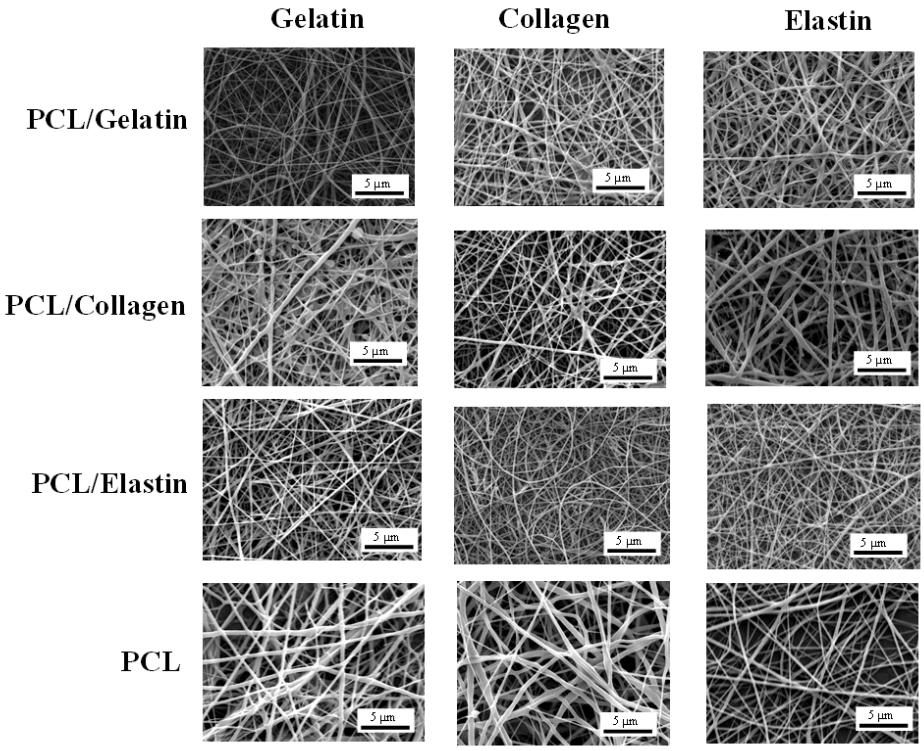


Fig. S3. SEM images after protein rebinding of the MI products (PCL-Gelatin, PCL-Collagen, PCL-Elastin and PCL) in different protein solutions (gelatin, collagen and elastin).

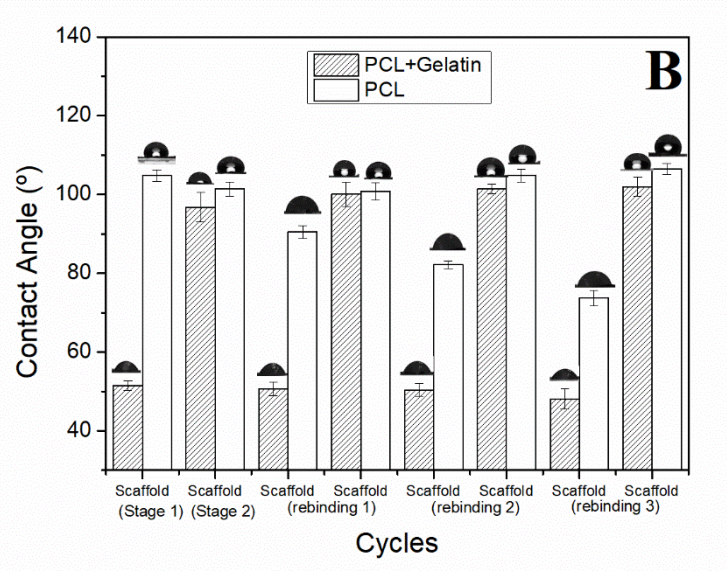


Fig. S4. Water contact angle (WCA) measurements obtained for PCL and PCL-Gelatin systems obtained *via* electrospinning (Stage 1) and after the solvent extraction stage after each consecutive rebinding process (rebinding 1, 2 and 3). Images of the drops during the WCA measurements have also been included.

Tables

Table S1. %N content obtained for the PCL-Gelatin and PCL systems after performing each stage of the molecular imprinting process and varying the template rebinding molecule (gelatin, collagen and elastin).

SYSTEMS	%N				
	Electrospinning	Solvent Extraction	Template Rebinding		
			Gelatin	Collagen	Elastin
PCL/Gelatin	3.31 ± 0.12	-	2.83 ± 0.17	1.78 ± 0.07	0.73 ± 0.04
PCL	-	-	1.34 ± 0.16	1.50 ± 0.06	0.49 ± 0.02

Table S2. Mean fiber diameter (nm) and uniformity (%) before and after protein rebinding of the MI products (PCL-Gelatin, PCL-Collagen, PCL-Elastin and PCL) in different protein solutions (gelatin, collagen and elastin).

SYSTEMS	Mean Fiber Diameter (nm)						Uniformity (%)					
	GELATIN		COLLAGEN		ELASTIN		GELATIN		COLLAGEN		ELASTIN	
	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After
PCL/Gelatin	298 ± 89	258 ± 92	288 ± 89	307 ± 74	298 ± 89	323 ± 73	71.01	69.10	71.01	75.89	71.01	77.40
PCL/Collagen	294 ± 123	330 ± 104	294 ± 123	372 ± 126	294 ± 123	364 ± 147	58.16	68.48	58.16	66.13	58.16	59.62
PCL/Elastin	150 ± 69	202 ± 58	150 ± 69	211 ± 76	150 ± 69	209 ± 88	58.39	71.28	58.39	63.98	58.39	57.89
PCL	441 ± 112	419 ± 90	441 ± 112	424 ± 81	441 ± 112	481 ± 118	74.60	78.52	75.16	80.90	75.16	75.47

Table S3. %N content obtained for the PCL-Gelatin and PCL systems obtained *via* electrospinning after performing the rebinding stage of the MI process varying the pH of the solution (3, 6 and 9), the immersion time (1, 2 and 4h) and the template solution concentration (0.5, 0.05, 0.005 and 0.0005 %).

SYSTEMS	%N									
	Template Rebinding Stage									
	pH			Immersion time			Solution Concentration			
	pH 3	pH 6	pH 9	1 h	2 h	4 h	0.5%	0.05%	0.005%	0.0005%
PCL/Gelatin	2.83 ± 0.17	1.64 ± 0.24	1.54 ± 0.21	1.91 ± 0.11	2.83 ± 0.17	3.44 ± 0.05	2.83 ± 0.17	2.47 ± 0.13	1.38 ± 0.06	0.44 ± 0.16
PCL	1.34 ± 0.16	0.80 ± 0.10	0.26 ± 0.04	0.29 ± 0.08	1.34 ± 0.16	1.29 ± 0.09	1.34 ± 0.16	0.62 ± 0.12	0.23 ± 0.07	0.11 ± 0.10

Table S4. %N content obtained for the PCL-Gelatin and PCL systems after performing each stage of the molecular imprinting process and varying the number of consecutive cycles performed: One cycle (C1), two cycles (C2) or three cycles (C3).

SYSTEMS	%N		
	Cycles		
	C1	C2	C3
PCL/Gelatin	2.83 ± 0.17	3.05 ± 0.28	3.65 ± 0.35
PCL	1.34 ± 0.16	1.93 ± 0.12	2.12 ± 0.09