

Supporting information of

Double-layer dura mater based on poly(caprolactone-*co*-lactide) film and polyurethane sponge: preparation, characterization, and biodegradation study

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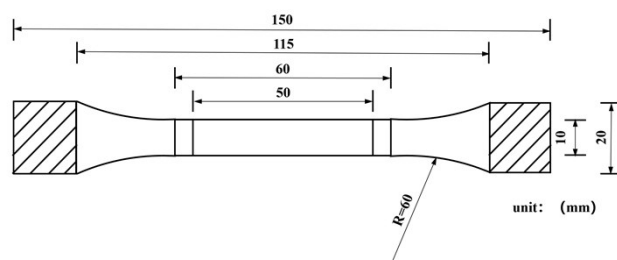


Figure S1. Tensile splines for mechanical properties research.

Table S1 Theoretical and actual composition of PCLA.

Samples	Feeding weight(g)		Theoretical molar ratio of LLA / CL	Actual molar ratio of LLA / CL(¹ H-NMR)
	LLA ($M=144 \text{ g}\cdot\text{mol}^{-1}$) 1)	CL ($M=114 \text{ g}\cdot\text{mol}^{-1}$) 1)		
PCLA(75:25)	108	28.5	75/25	78.74/21.26
PCLA(70:30)	100.8	34.2	70/30	73.53/26.47

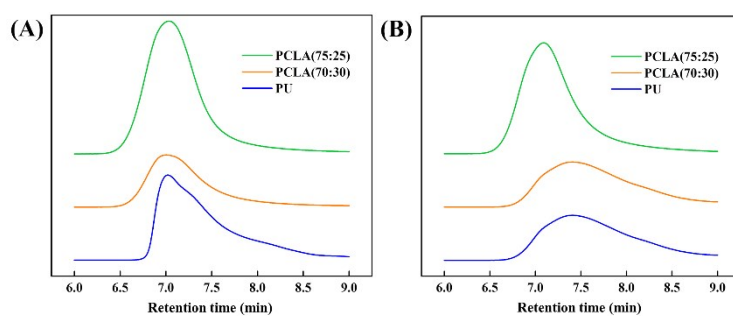


Figure S2. GPC traces of polymers in this study: (A) Before degradation; (B) After degradation

Table S2 FTIR results of the materials.

Wavenumber (cm ⁻¹)	Groups	
Figure 2A	2998	symmetrical stretching vibration of -CH-
	2944	antisymmetric stretching vibration of -CH-
	1457	flexural vibration of -CH-
	1386	flexural vibration of -CH ₃
	755	flexural vibration of -CH ₂ -
	1760	stretching vibration of C=O
	1186,1135	stretching vibration of C-O
Figure 2B	1143,1132	stretching vibration of C-O
	2875	asymmetric stretching of -OCH ₂ -
	949	blending peak of -CH ₂ -CH ₂ -O
	1096	asymmetric stretching of C-O-C
	1044	symmetric stretching of C-O-C
	1734	stretching vibration of C=O in PCL
	1246	stretching vibration of C-O-C
	1756	stretching peak of C=O in PLA
	1249	asymmetric stretching of OC-O-C
	1187	stretching peak of OC-O
	754	bending peak of OC-O-
	1453	asymmetric bending peak of -CH ₃
	1723	free C=O of the carbamate group in PU

Table S3 Molecular properties of polymers.

Polymers	M_w (10 ³)	M_n (10 ³)	M_w/M_n	Appearance
PCLA(75:25)	67.1	48.0	1.40	flocculent solid
PCLA(70:30)	61.5	44.5	1.38	flocculent solid
PU	29.7	18.5	1.61	flocculent solid

Table S4 Molecular weight of polymers before and after in vitro degradation.

Samples	Molecular weight	Molecular weight	Reduction rate (%)
	before degradation ^a	after degradation ^a	
	(10 ³)	(10 ³)	
Film(75:25)	67.1	57.9	14.7
Film(70:30)	61.5	43.6	29.1
Sponge	42.1	29.7	29.4

a. Determined by GPC.

Table S5 Water absorption rates of different materials at 10 min.

Samples	Water absorption rate at 10 min
	(%)
Film(75:25)	0.80
Film(70:30)	1.14
Sponge	586
Film(75:25)@Sponge	490
Film(70:30)@Sponge	531

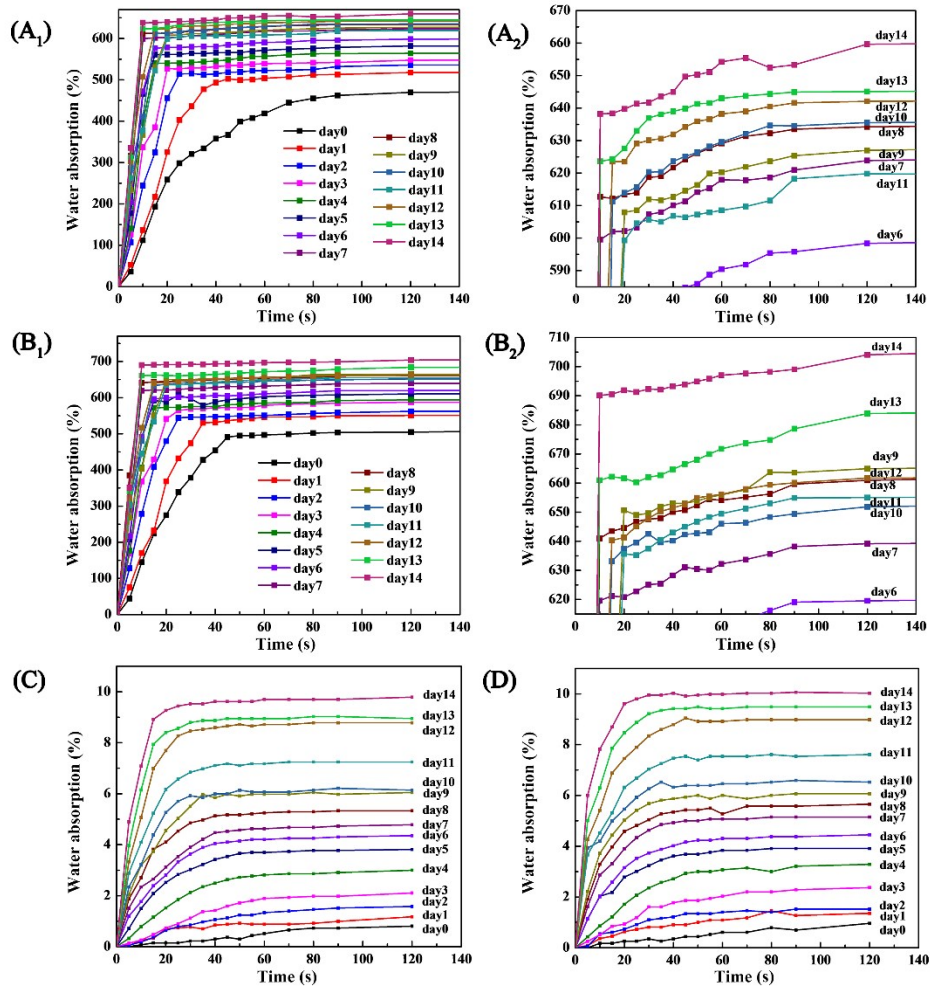


Figure S3. Changes in water absorption speed of materials: (A) Film(75:25)@Sponge; (B) Film(70:30)@Sponge; (C) Film(75:25); (D) Film(70:30).