Supplementary Information

Facile fabrication of homogeneous cellulose/polylactic acid composite film with improved biocompatible, biodegradable and mechanical properties

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1. TGA curves of the cellulose, PLA and C/PLA films

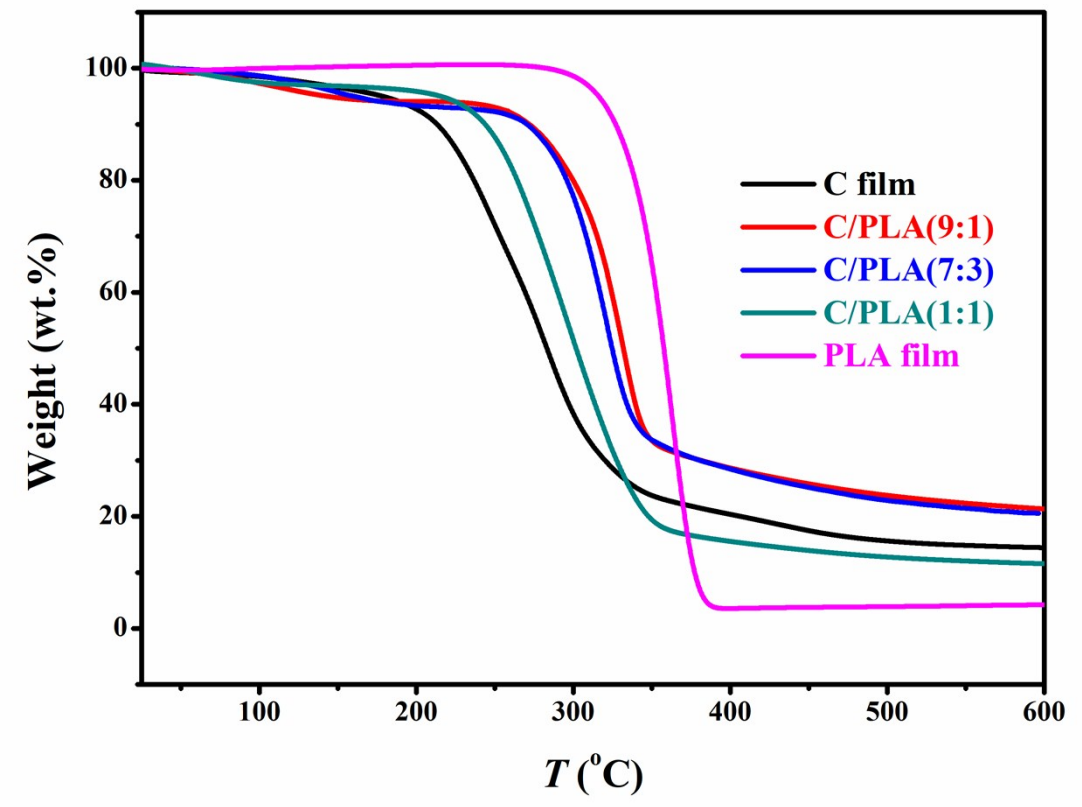

Figure S1. TGA curves of the cellulose, PLA and C/PLA films.

2. DSC curves for the cellulose, PLA and C/PLA(1:1) films

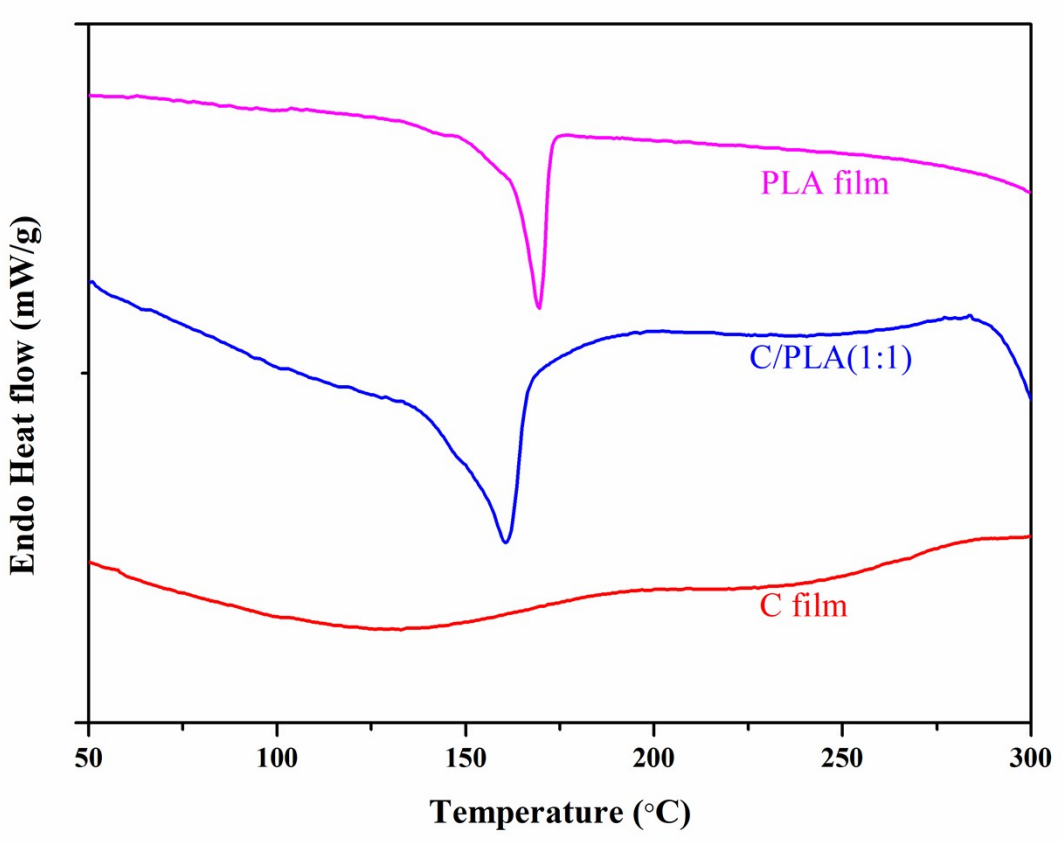

Figure S2. DSC curves for the C film, PLA film and C/PLA(1:1) film.

3. DSC thermograms of the C/PLA(1:1) film

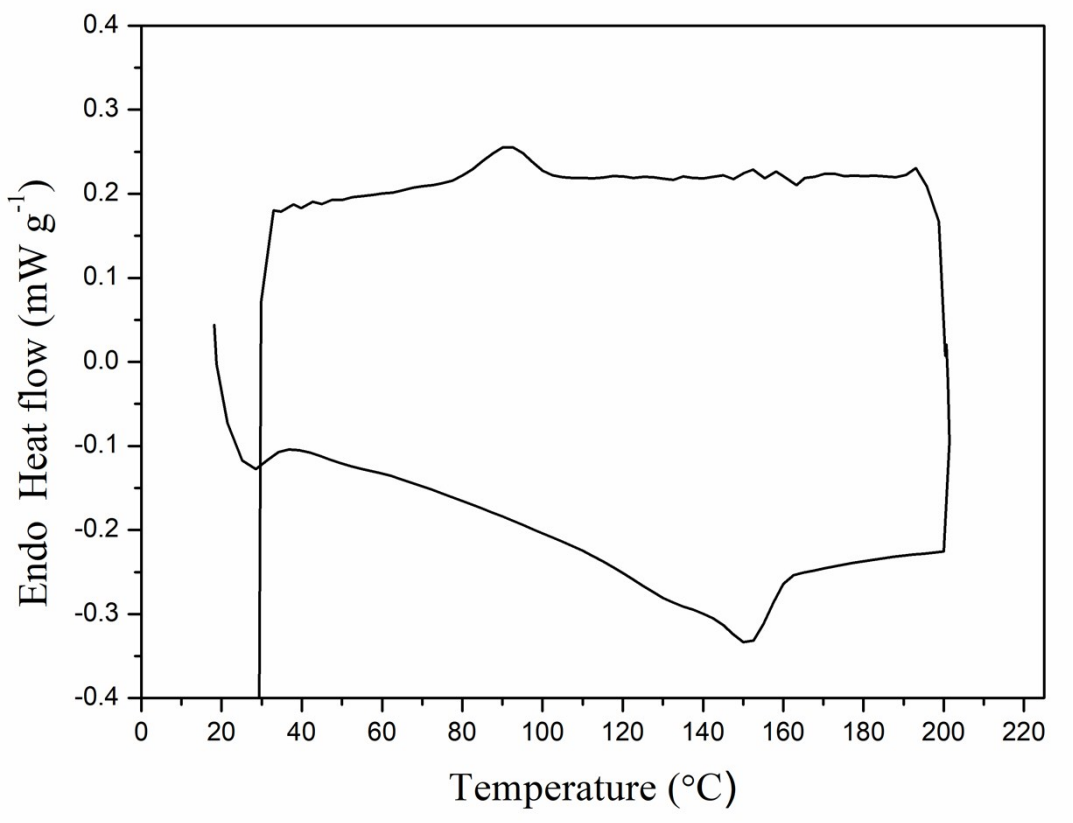

Figure S3. DSC thermograms of the C/PLA(1:1) film.

4. SEM images of the pure cellulose film embedded in soil for different days

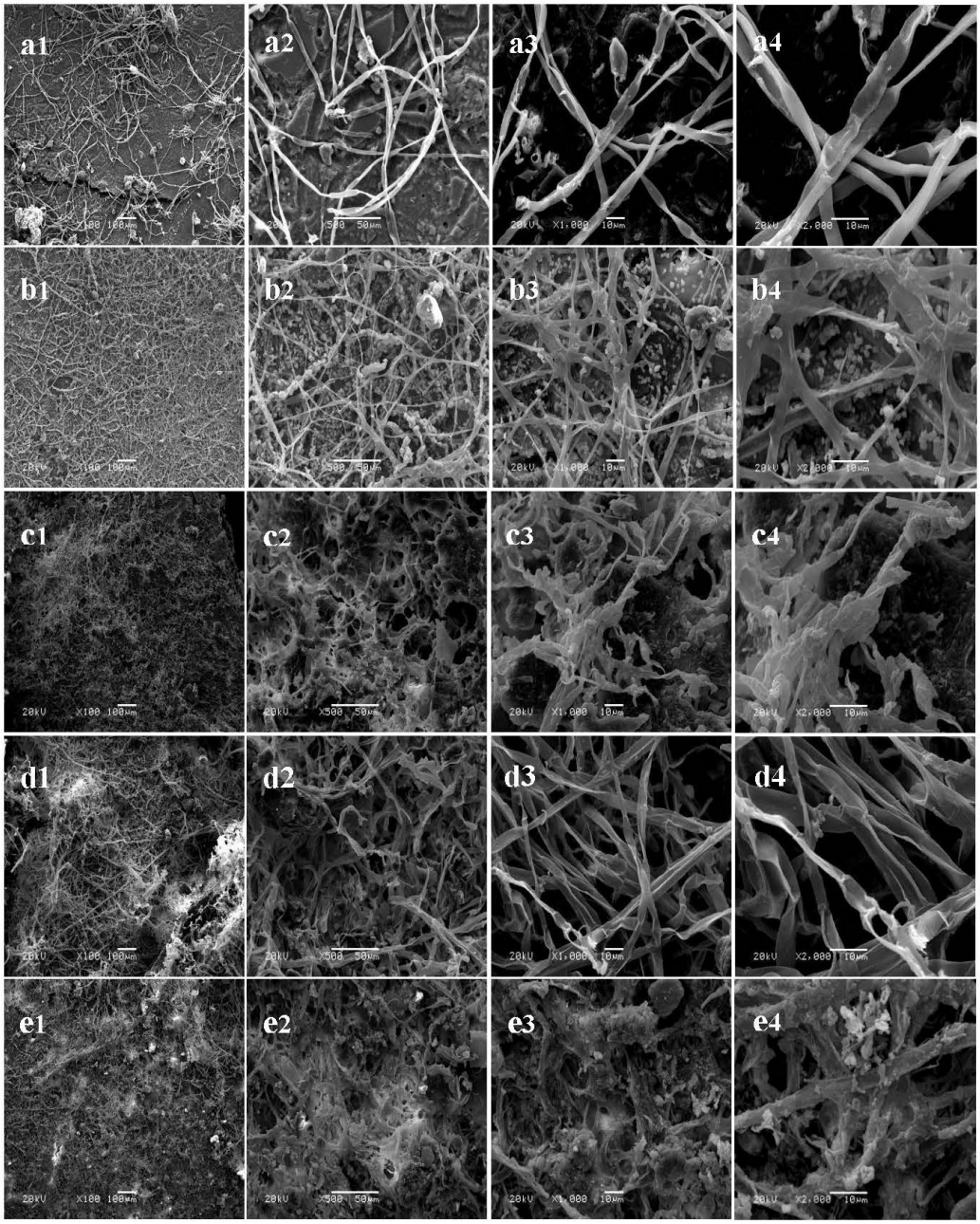

Figure S4. SEM images of the surfaces of the pure cellulose film: Degradation of 10 days at 100× magnification (a1), 500× magnification (a2), 1000× magnification (a3) and 2000× magnification (a4); degradation of 30 days at 100× magnification (b1), 500× magnification (b2), 1000× magnification (b3) and 2000× magnification (b4); degradation of 45 days at 100× magnification (c1), 500× magnification (c2), 1000× magnification (c3) and 2000× magnification (c4); degradation of 60 days at 100× magnification (d1), 500× magnification (d2), 1000× magnification (d3) and 2000× magnification (d4); degradation of 90 days at 100× magnification (e1), 500× magnification (e2), 1000× magnification (e3) and 2000× magnification (e4).

5. SEM images of the C/PLA (1:1) film embedded in soil for different days

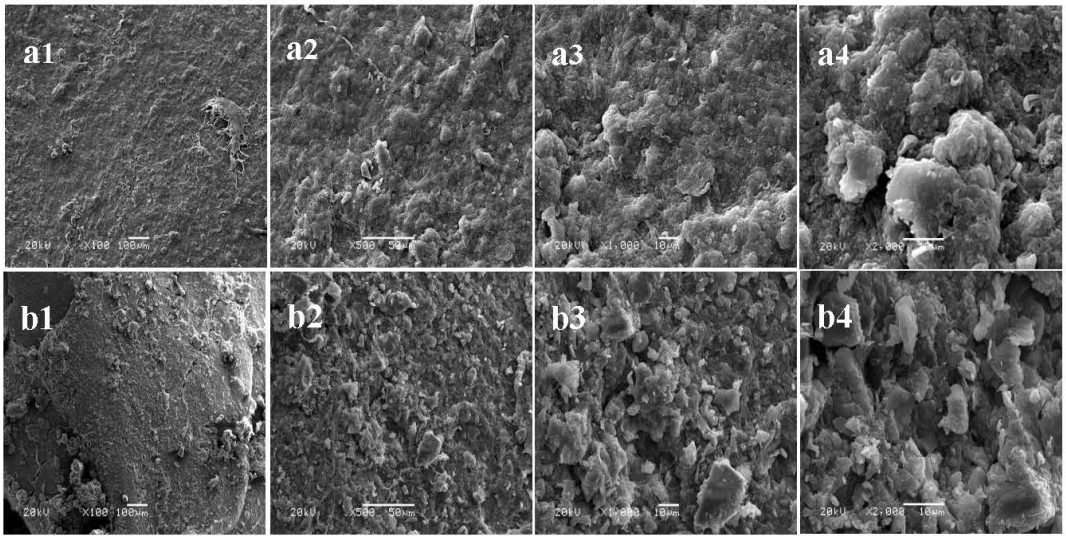

Figure S5. SEM images of surfaces of the C/PLA(1:1) composite film: Degradation of 10 days at 100× magnification (a1), 500× magnification (a2), 1000× magnification (a3) and 2000× magnification (a4); degradation of 30 days at 100 × magnification (b1), 500 × magnification (b2), 1000× magnification (b3) and 2000× magnification (b4).

6. SEM images of the pure PLA film embedded in soil for different days

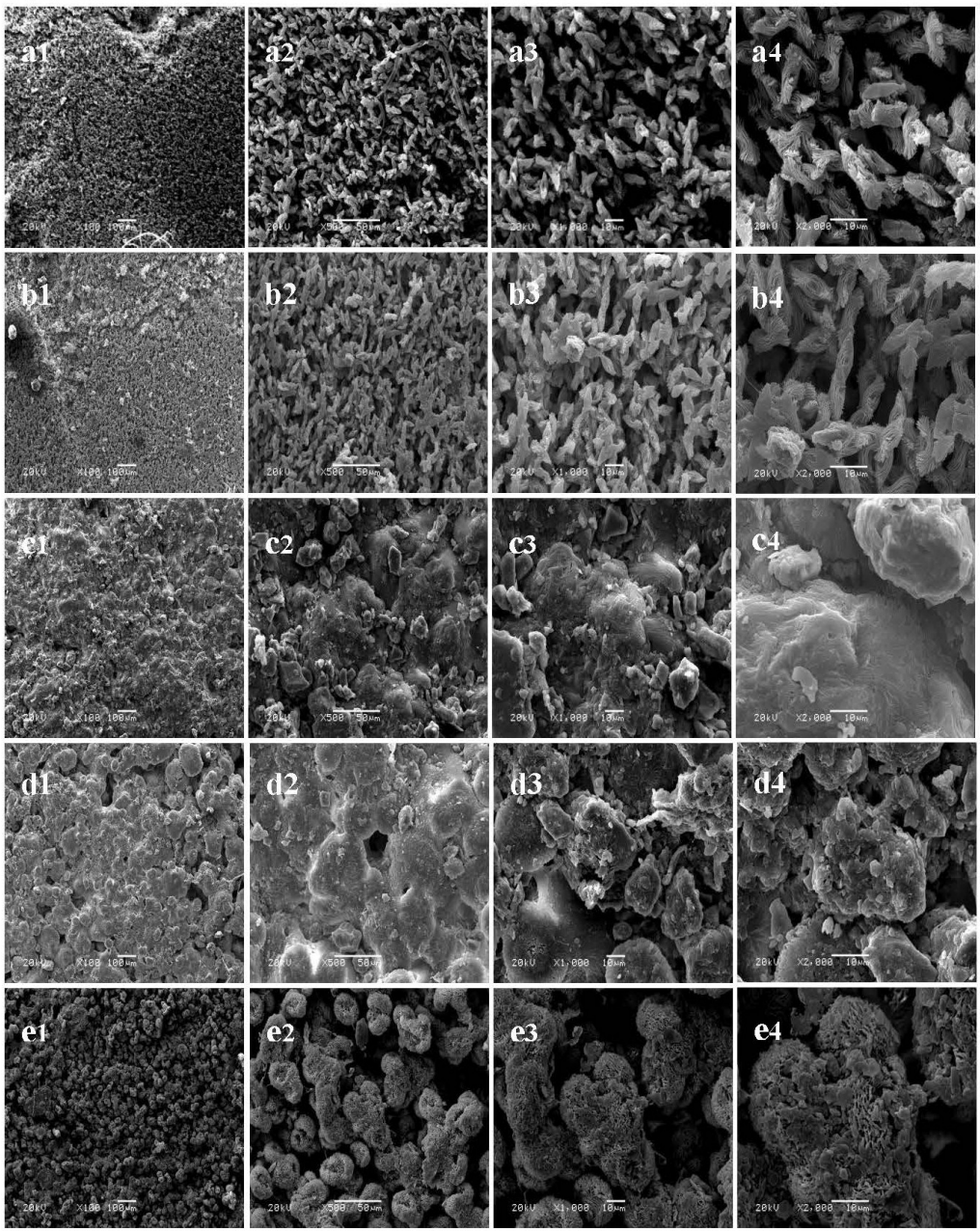

Figure S6. SEM images of the surfaces of the pure PLA film: Degradation of 10 days at 100× magnification (a1), 500× magnification (a2), 1000× magnification (a3) and 2000 magnification (a4); degradation of 30 days at 100× magnification (b1), 500× magnification (b2), 1000× magnification (b3) and 2000 magnification (b4); degradation of 45 days at 100× magnification (c1), 500× magnification (c2), 1000× magnification (c3) and 2000 magnification (c4); degradation of 60 days at 100× magnification (d1), 500× magnification (d2), 1000× magnification (d3) and 2000× magnification (d4); degradation of 90 days at 100× magnification (e1), 500× magnification (e2), 1000× magnification (e3) and 2000 magnification (e4).

7. Breaking elongation of the cellulose and C/PLA films

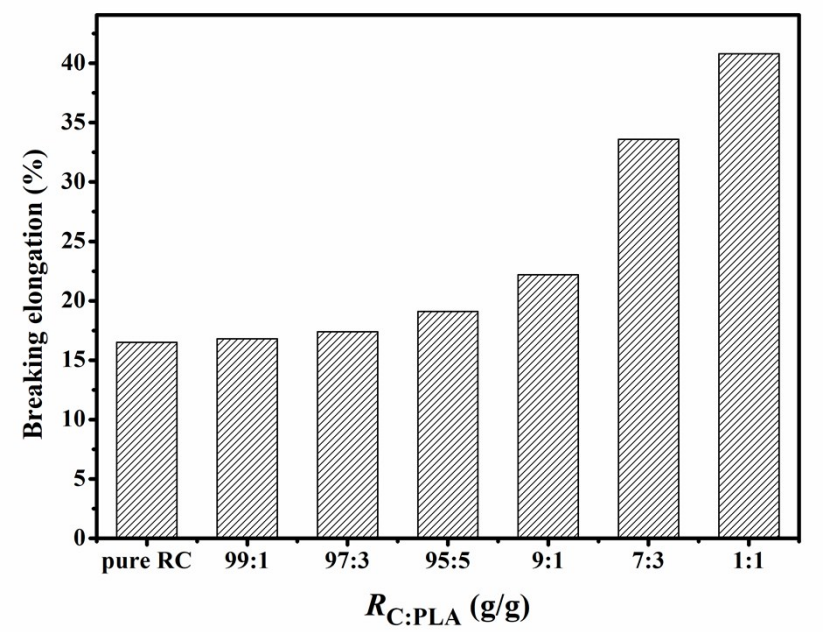

Figure S7. Breaking elongation of the cellulose and C/PLA films

8. The cell viability data at different incubation times

Table S1. The cell viability (%) at different incubation times

sample	cell viability (%)			
	1d	3d	5d	7d
Pure cellulose film	108	107	107	107
C/PLA (9:1)	116	126	126	124
C/PLA (7:3)	116	126	126	127
C/PLA (1:1)	120	132	130	132