

Supplementary Information

Table S1. Measured dry weights of rectangular strips (1×7 cm) of SIS and GO-SIS biocomposite films, and the calculated GO loading.

Sample	W_{SIS} (mg) ¹	$W_{\text{GO-SIS}}$ (mg) ²	$W_{\text{GO-SIS}} - W_{\text{SIS}}$ (mg) ³	GO Loading (mg cm^{-2}) ⁴
1	6.74	7.13	0.39	0.06
2	7.31	7.62	0.31	0.04
3	7.63	8.05	0.42	0.06
4	8.13	8.47	0.34	0.05
5	8.31	8.60	0.29	0.04
6	7.29	7.64	0.35	0.05
7	6.62	6.98	0.36	0.05
8	8.43	8.80	0.37	0.05
9	7.68	7.99	0.31	0.04
10	7.55	7.91	0.36	0.05
11	6.79	7.07	0.28	0.04
12	8.11	8.45	0.34	0.05
13	7.56	8.01	0.45	0.06
14	8.07	8.39	0.32	0.05
15	7.19	7.57	0.38	0.05
16	7.48	7.92	0.44	0.06
17	7.10	7.41	0.31	0.04
18	7.26	7.61	0.35	0.05
19	6.95	7.25	0.30	0.04
20	8.14	8.46	0.32	0.05
Mean $\pm$ SD	7.52 ± 0.54	7.87 ± 0.54	0.35 ± 0.05	0.05 ± 0.01

¹ W_{SIS} , weight of a dried SIS film strip (1×7 cm).

² $W_{\text{GO-SIS}}$, weight of a dried GO-SIS biocomposite film strip (1×7 cm) after coating.

³ $W_{\text{GO-SIS}} - W_{\text{SIS}}$, weight difference between a coated GO-SIS biocomposite film strip (1×7 cm) and a pure SIS film strip (1×7 cm).

⁴ GO Loading = $(W_{\text{GO-SIS}} - W_{\text{SIS}}) / 7 \text{ cm}^2$.

Table S2. Absorbance data of the Hyp standards.

Hyp concentration ($\mu\text{g mL}^{-1}$)	Abs
0	0.104
0.117	0.107
0.234	0.109
0.469	0.114
0.938	0.121
1.875	0.132
3.75	0.159
7.5	0.215
15	0.319

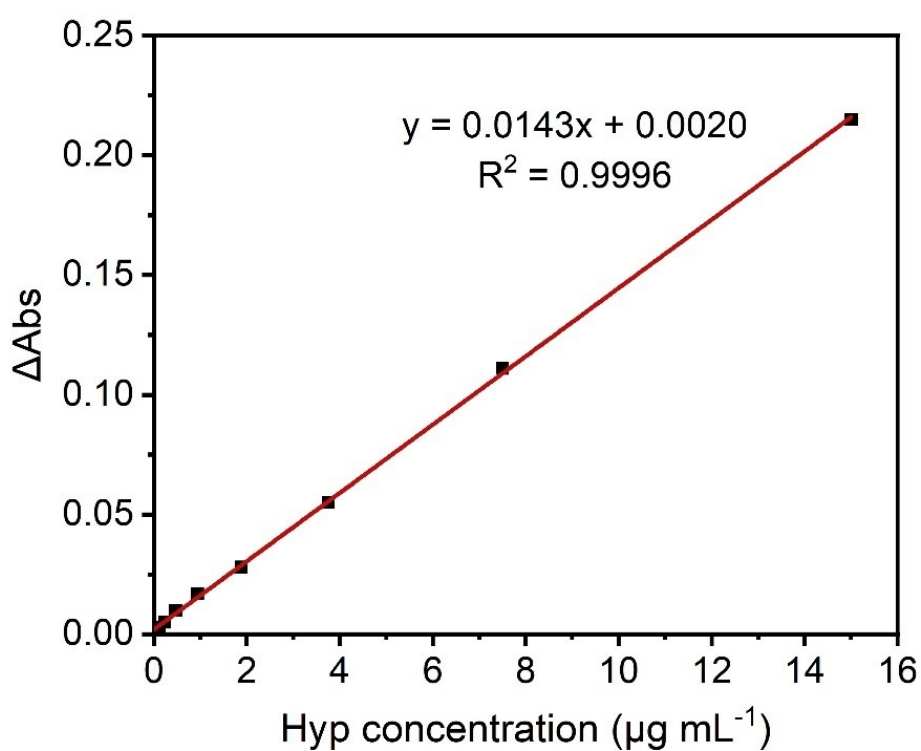


Fig. S1. Standard curve for determination of Hyp concentration.

Table S3. Thickness of SIS.

Sample	Thickness (μm)										Average thickness (μm)
SIS	12	17	22	15	13	11	24	12	12	14	17 ± 3
	11	11	17	17	16	14	21	16	20	23	
	18	13	15	12	19	15	16	17	20	15	
	20	17	12	15	13	21	12	18	18	17	
	12	22	15	14	11	13	11	12	19	17	
	17	19	23	23	20	16	21	16	14	11	
	17	12	16	20	14	17	16	15	13	24	
	15	20	16	18	21	17	19	21	20	14	
	14	19	15	16	13	20	18	19	15	20	
	16	22	20	17	15	16	14	16	12	23	

Table S4. Thickness of GO-SIS biocomposite films.

Sample	Thickness (μm)										Average thickness (μm)
GO-SIS	10	16	10	20	17	21	11	19	14	11	16 ± 3
	23	14	21	12	18	16	10	16	20	17	
	17	18	19	10	17	16	12	12	12	17	
	15	23	18	12	16	13	14	16	17	11	
	12	17	14	18	17	17	12	17	16	15	
	20	18	17	10	10	19	18	21	18	19	
	13	14	14	16	17	15	17	14	18	17	
	17	16	11	13	10	18	15	10	22	10	
	10	13	17	10	16	21	11	19	12	12	
	17	16	19	20	13	15	16	19	14	18	

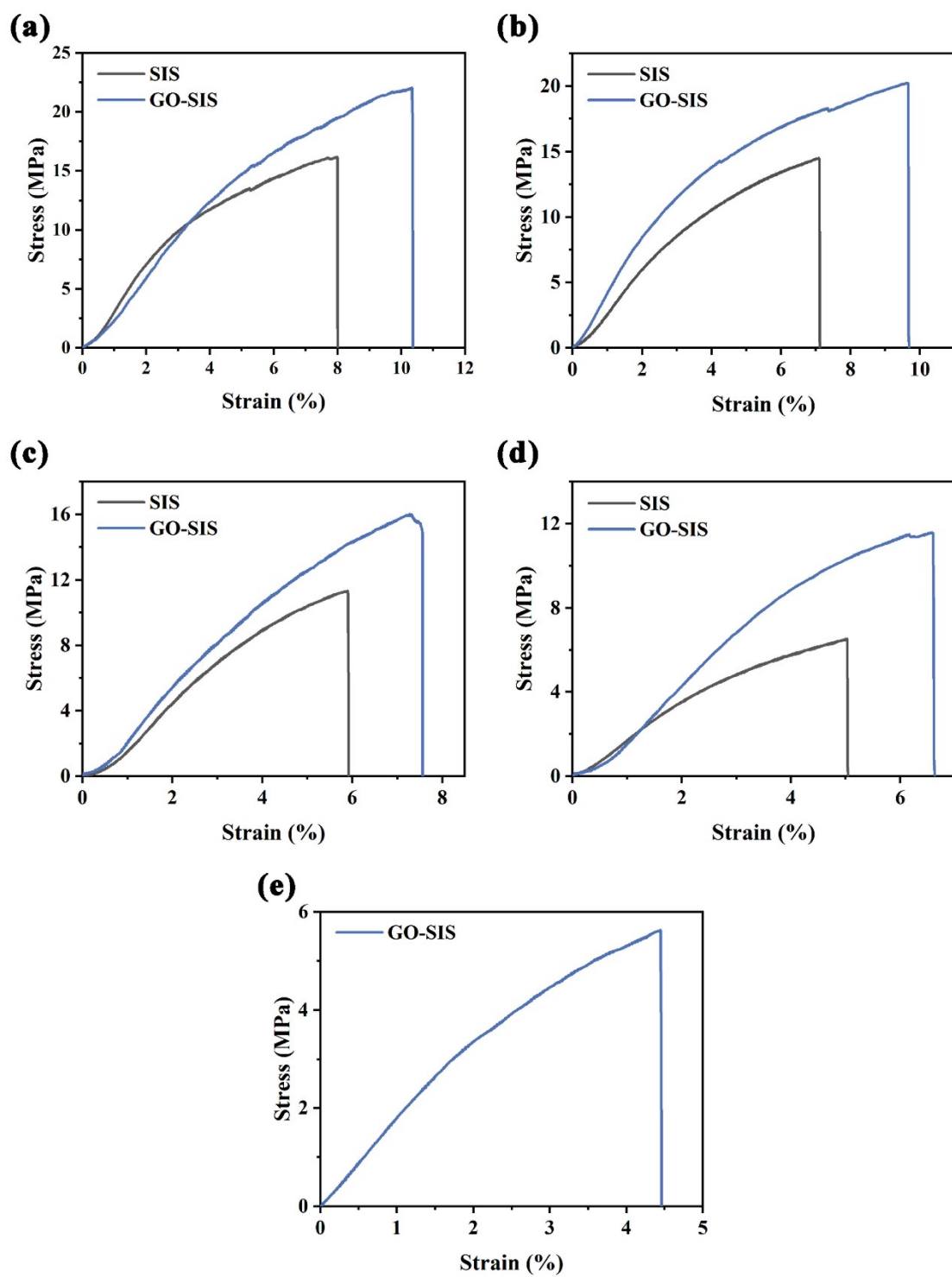


Fig. S2. Representative stress-strain curves of dried SIS films and GO-SIS biocomposite films after (a) 4 h, (b) 8 h, (c) 16 h, (d) 24 h, and (e) 48 h of in vitro degradation.