Supporting Information

Intensifying the antimicrobial activity of poly[2-(*tert*-butylamino)ethyl methacrylate]/polylactide composites by tailoring their chemical and physical structures

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Supporting Figures

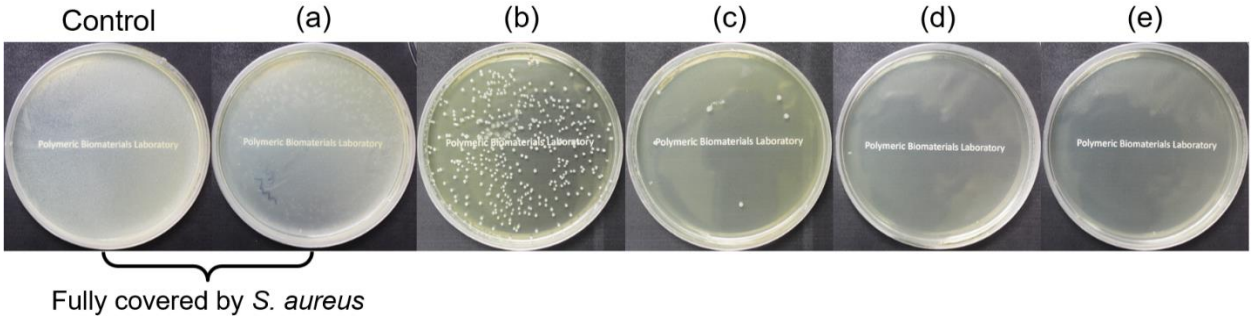

Figure S1. Agar plates after 18 h incubation of the untreated *S. aureus* bacterial suspension (Control) and the PTA-20-treated *S. aureus* bacterial suspensions with a PTA-20 concentration of a) 0.05 mg/mL, b) 0.1 mg/mL, c) 0.25 mg/mL, d) 0.5 mg/mL and e) 1 mg/mL.

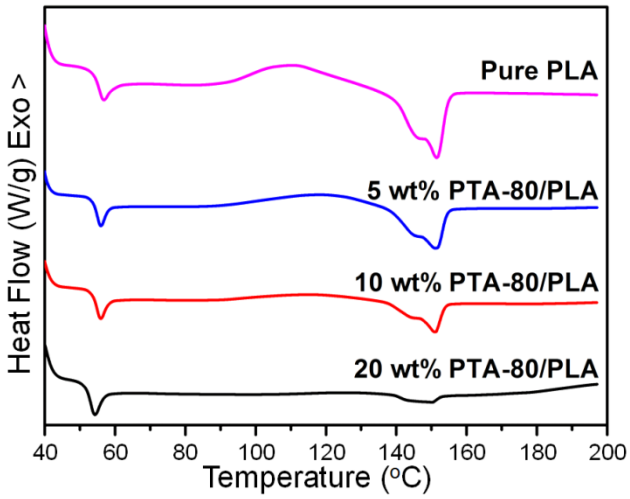

Figure S2. DSC thermograms of pure PLA and amorphous PTA-80/PLA composite thin films with an increasing PTA added content.

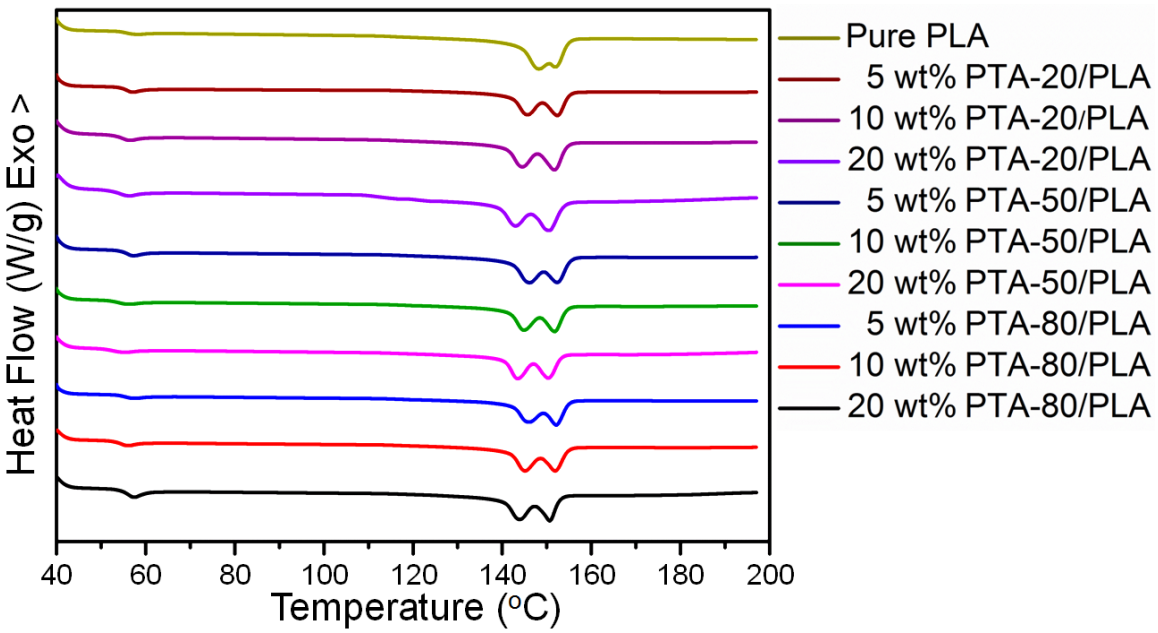

Figure S3. DSC thermograms of pure PLA and crystalline PTA/PLA composite thin films with a cooling down procedure of 110 °C for 2 h.

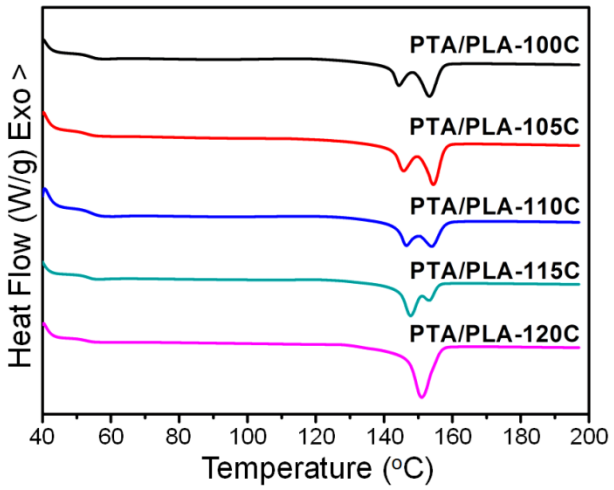

Figure S4. DSC thermograms of crystalline PTA-80/PLA composite thin films subjected to different crystallization temperatures for 2 h. The PTA content for those films was kept at 5 wt%.

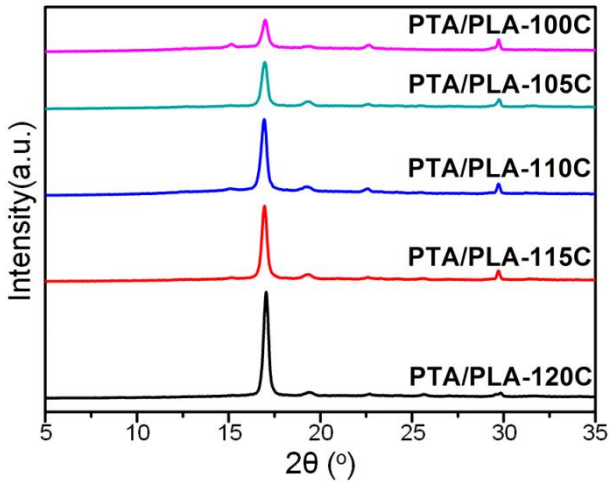

Figure S5. X-ray diffraction patterns of PTA/PLA-100C, PTA/PLA-105C, PTA/PLA-110C, PTA/PLA-115C and PTA/PLA-120C.

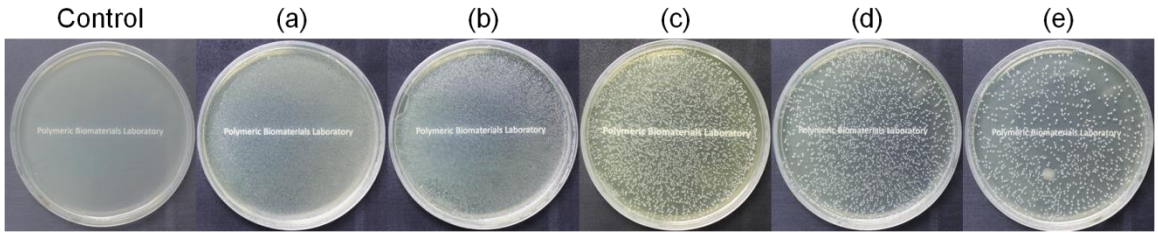

Figure S6. Agar plate results of a) PTA/PLA-120C, b) PTA/PLA-115C, c) PTA/PLA-110C, d) PTA/PLA-105C, e) PTA/PLA-100C.

Supporting Tables

Table S1. Thermal properties of amorphous PTA-80/PLA composite thin films containing an increasing PTA-added content.

Entry	T_g (°C)	T_m (°C)	T_{de} (°C)
Neat PLA films	55.58	151.48	335.56
PTA-80/PLA (5 wt% PTA-80)	55.03	151.12	331.32
PTA-80/PLA (10 wt% PTA-80)	54.9	151.0	327.91
PTA-80/PLA (20 wt% PTA-80)	53.14	150.17	302.33

Table S2. Mechanical properties of crystalline PTA-80/PLA composite thin films containing an increasing PTA-added content.

Entry[a)]	Tensile strength (MPa)	Young's modulus (MPa)	Elongation at break (%)
Neat PLA films	39.5 ± 1.7	29.7 ± 2.3	1.12 ± 0.12
PTA-80/PLA (5 wt% PTA-80)	36.5 ± 2.8	27.6 ± 2.7	1.21 ± 0.22
PTA-80/PLA (10 wt% PTA-80)	35.4 ± 2.4	26.4 ± 2.3	1.28 ± 0.21
PTA-80/PLA (20 wt% PTA-80)	33.8 ± 3.1	24.8 ± 2.4	1.34 ± 0.11

[a)]All the listed mechanical properties were an average value plus its standard deviation from three independent measurements.