Bioactive glass/ciprofloxacin-loaded dual-layer coating on polyetheretherketone scaffolds for enhanced antibacterial and osteogenic properties

Supplementary File

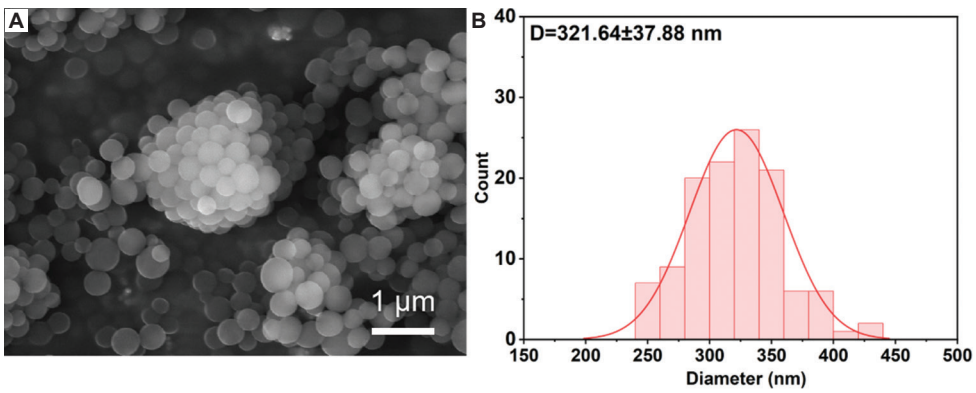

Figure S1. Morphology and size distribution of gelatin nanospheres. (A) Scanning electron microscopy image of gelatin nanospheres (scale bar = 1 μm; magnification = 20,000×). (B) Size distribution of gelatin nanospheres calculated from the scanning electron microscopy image.

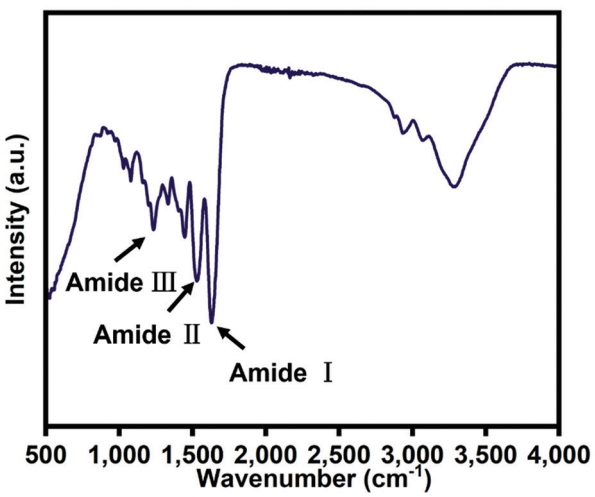

Figure S2. Fourier-transform infrared spectra of gelatin nanospheres collected in attenuated total reflection mode

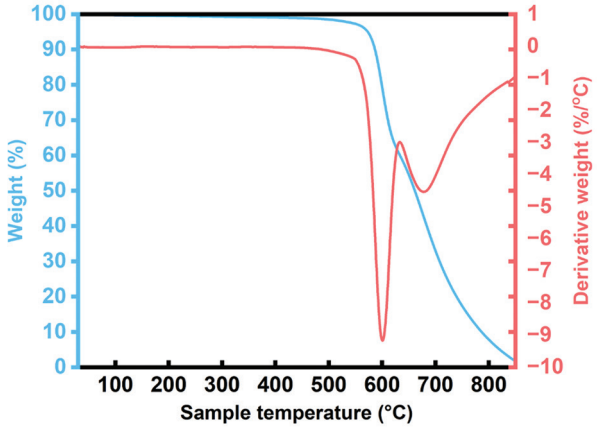

Figure S3. Thermogravimetric spectra of polyetheretherketone heated from 30°C to 850°C in an air atmosphere

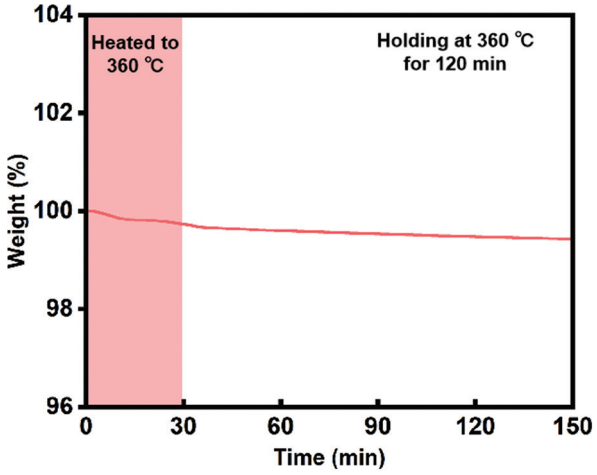

Figure S4. Thermogravimetric spectra of polyetheretherketone heated at 360°C for 120 min in an air atmosphere

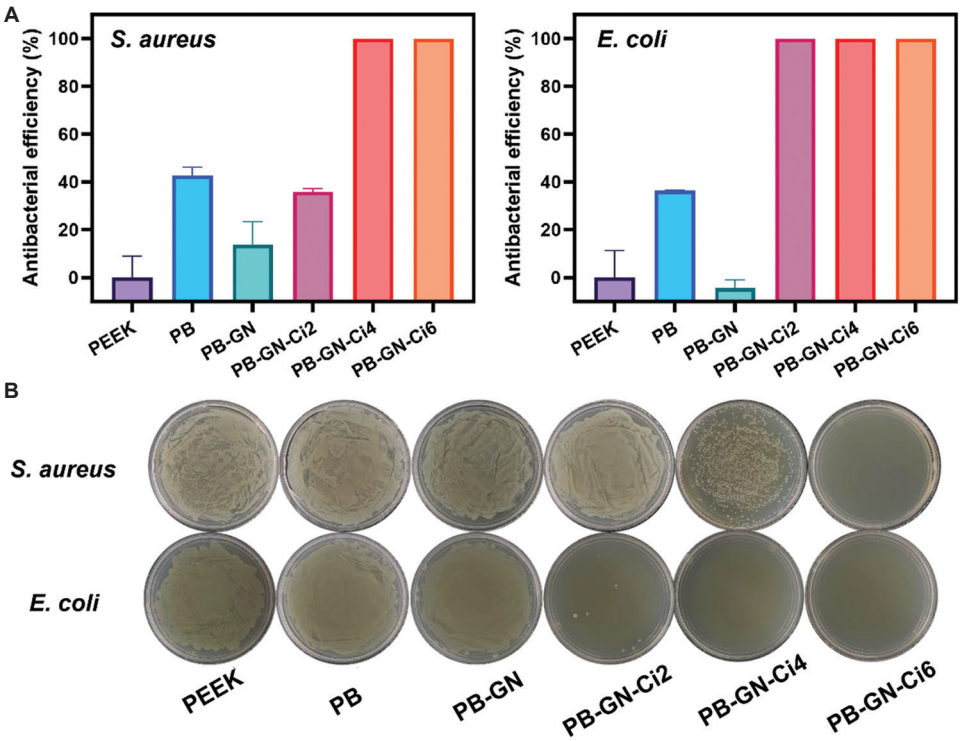

Figure S5. *In vitro* antibacterial properties of the scaffolds loaded with different concentrations of Ci. (A) Antibacterial rate of PEEK, PB, PB-GN, and PB-GN-Ci scaffolds loaded with different concentrations of Ci (2 mg/mL, 4 mg/mL, and 6 mg/mL) against *S. aureus* and *E. coli*. (B) Representative optical images of bacterial colonies after incubation.

Abbreviations: Ci: Ciprofloxacin hydrochloride; *E. coli*: *Escherichia coli*; GN: Gelatin nanosphere; PB: Polyetheretherketone/bioactive glass; PEEK: Polyetheretherketone; *S. aureus*: *Staphylococcus aureus*.