

Engineered poly (amino acid) hydrogel synchronizes sequential infection elimination and osteogenic activation for single-stage reconstruction of infected bone defects

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Table S1 The primer sequences in this study

| Gene subtype | Oligonucleotide Primers (5'-3') |
|---------------------|--|
| <i>Runx2</i> | F: 5'-TCAGGCATGTCCCTCGGTAT-3' R: 5'-TGGCAGGTAGGTATGGTAGTGG-3' |
| <i>ALP</i> | F: 5'-GCACTCCCACTTGTCTGGA-3' R: 5'-TCCTGTTCAGCTCGTACTGC-3' |
| <i>OPN</i> | F: 5'-CACCATGAGAATCGCCGT-3' R: 5'-CGTGACTTGGGTTCTACGC-3' |
| <i>OCN</i> | F: 5'- CAGAGCGACAGCATGAGGG-3' R: 5'- CCTCTGCCAGACTCTGCACC-3' |
| <i>GAPDH</i> | F: 5'- GTTCCACGGCACGGTCAAGG-3' R: 5'- CCAGGGGGGCTAAGCAGTTG-3' |

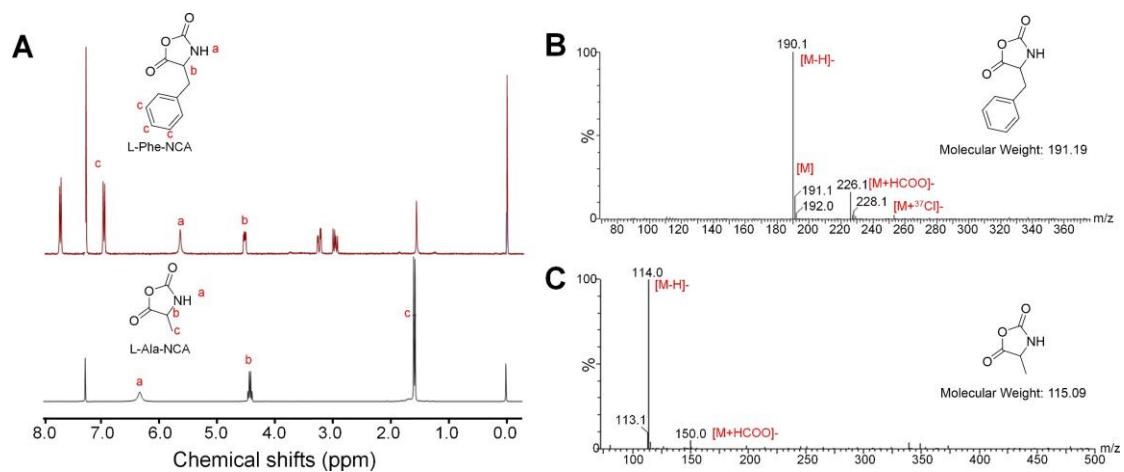


Figure S1. Characterization of L-Ala-NCA and L-Phe-NCA: A. ^1H NMR spectra of the synthesized L-Ala-NCA and L-Phe-NCA; B-C. Mass spectrometry analysis of the synthesized L-Ala-NCA (B) and L-Phe-NCA (C).

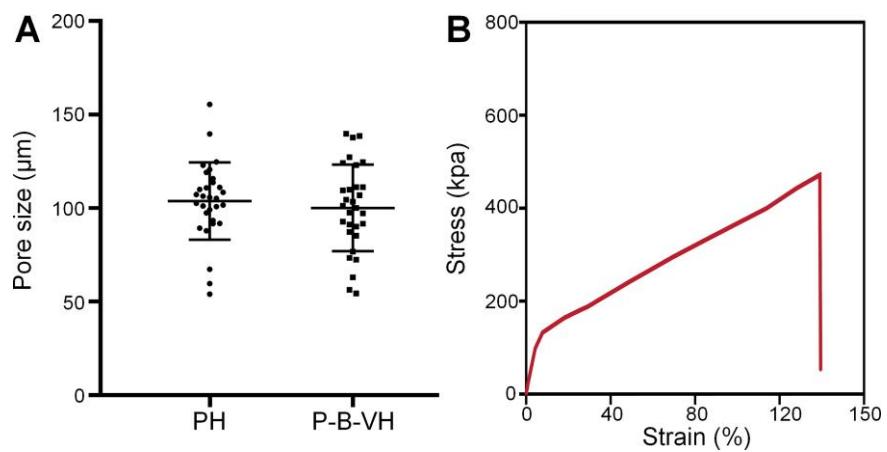


Figure S2. A. Evaluation of the pore size of the PH and P-B-VH hydrogel; B. Measurement of tensile strength of P-B-VH hydrogel.

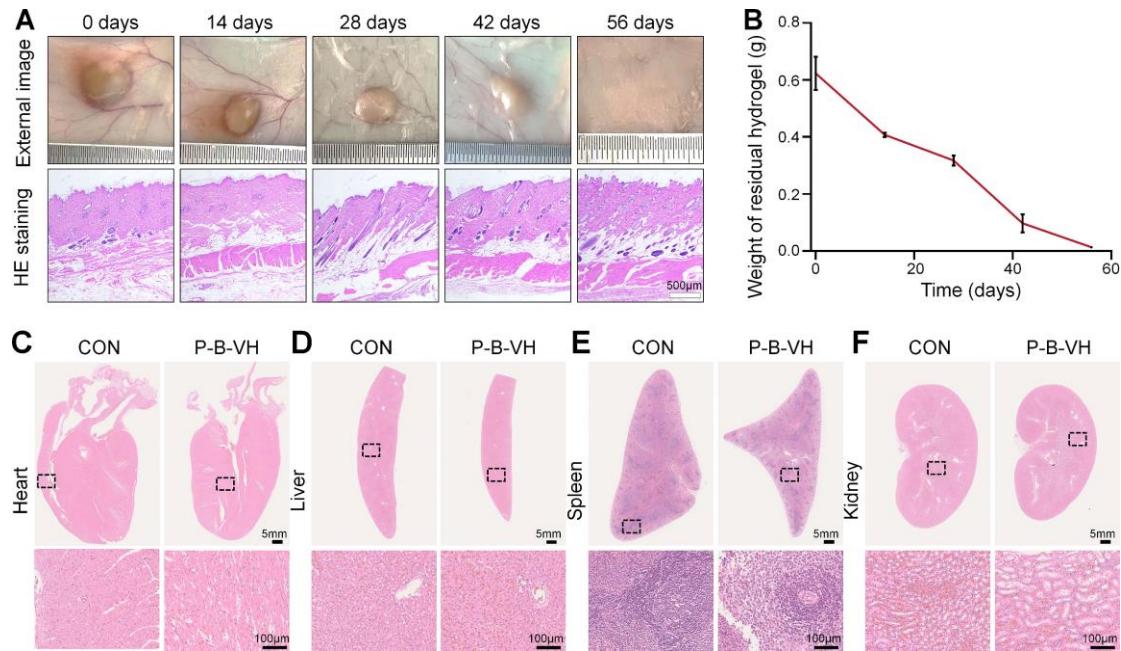


Figure S3. Evaluation of the biodegradability and histocompatibility of the P-B-VH hydrogel: A. Subcutaneous degradation of P-B-VH hydrogel and HE staining of the skin at the injection site; B. Quantitative analysis of the residual hydrogel weight of P-B-VH hydrogel after subcutaneous degradation; C-F. HE staining of the heart (C), liver (D), spleen (E) and kidney (F) after subcutaneous implantation of P-B-VH hydrogel in rats.

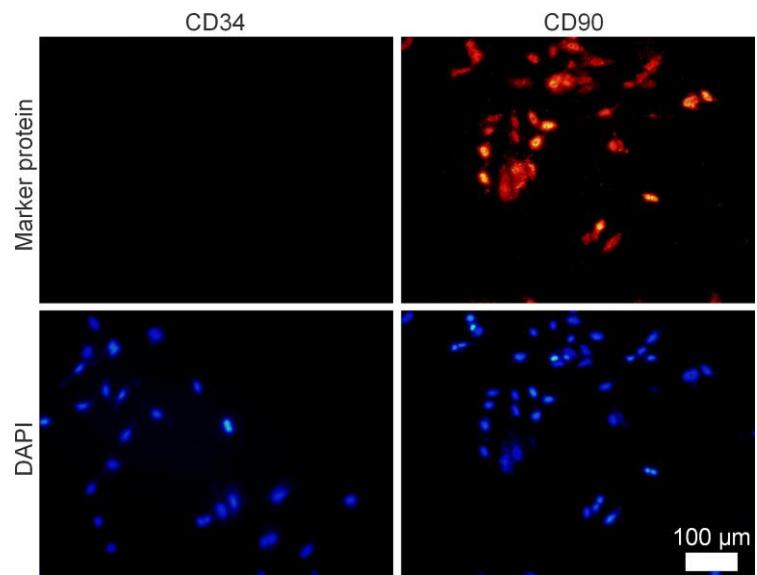


Figure S4. Immunofluorescence staining of stem cell marker proteins CD34 and CD90.

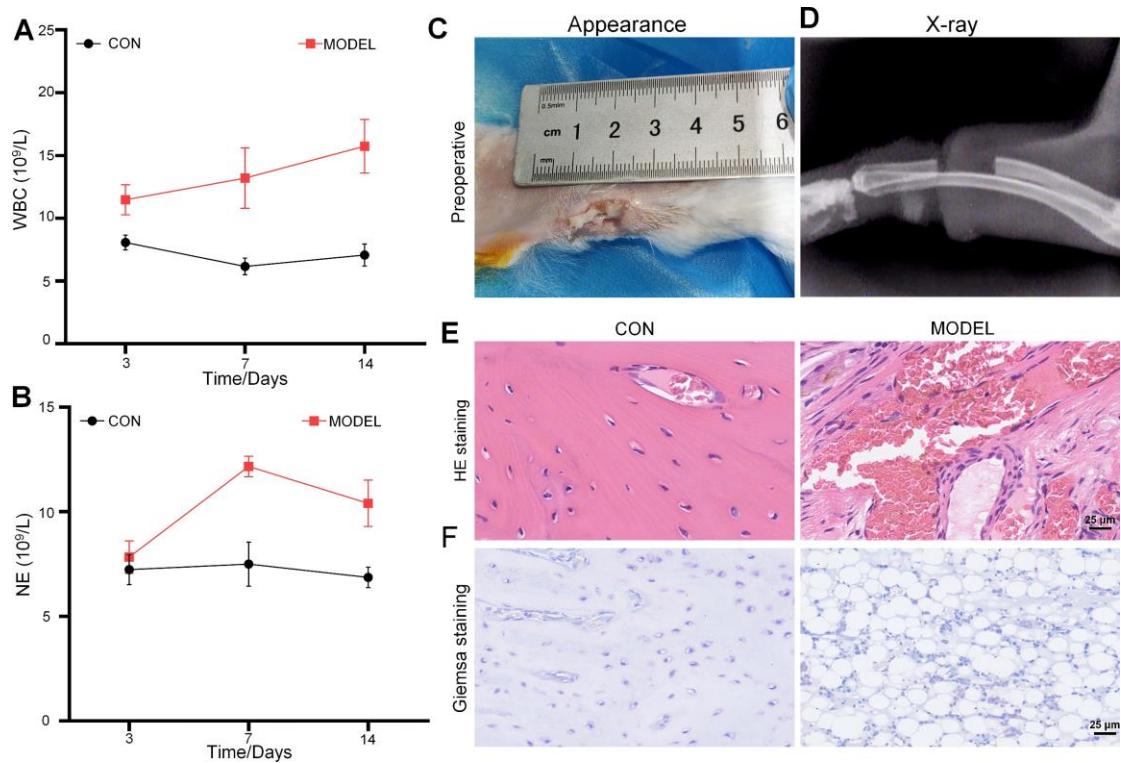


Figure S5. Evaluation of the animal model of infectious bone defect: A-B. Changes in white blood cell (A) and neutrophil (B) content after the preparation of the infection model; C. Local appearance at 2 weeks after surgery; D. X-ray at 2 weeks after surgery; E-F. HE and Giemsa staining at 2 weeks after surgery.