

Supplementary Information

**Superparamagnetic Core–Shell Electrospun Scaffolds with Sustained Release of IONPs Facilitating *in vitro* and *in vivo* Bone Regeneration**

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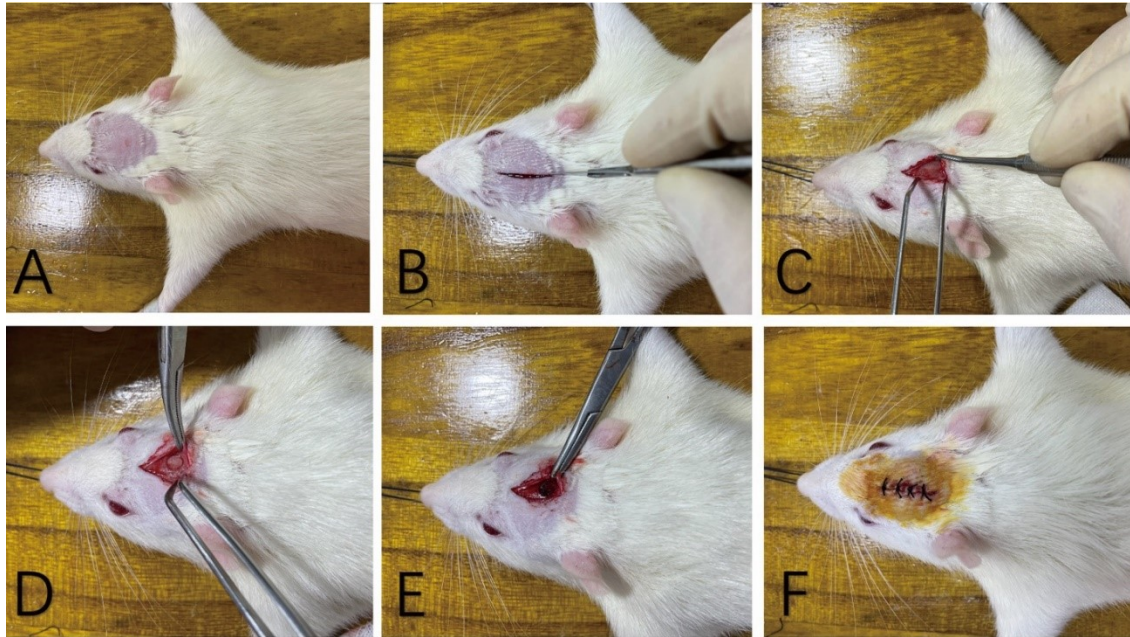
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Feimin Zhang

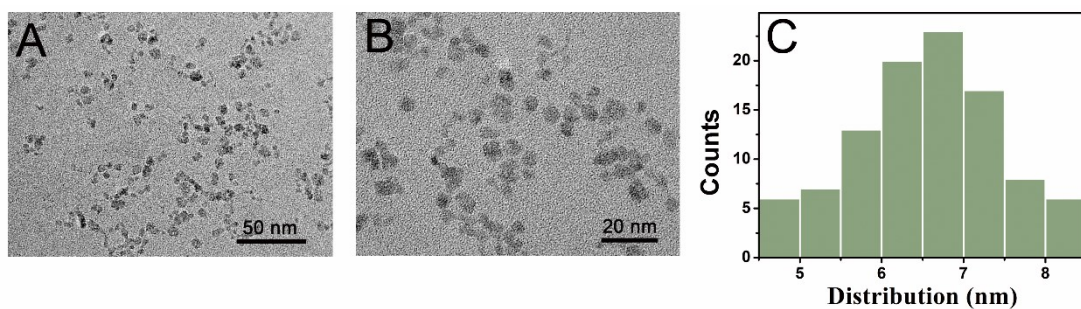
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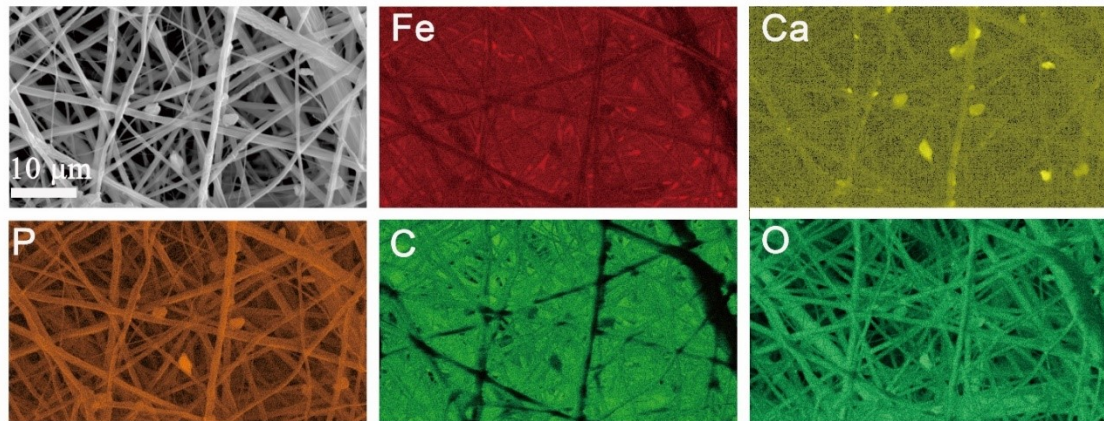
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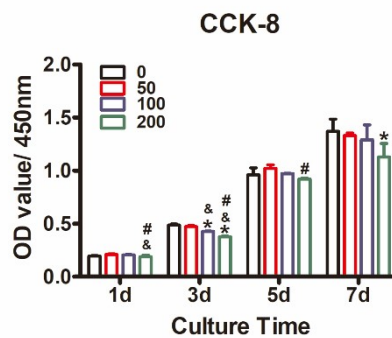
**Fig. S1** Surgical steps of preparation of the calvarial defect model and scaffold implantation in rats. (A) The operation area was shaved and sterilized. (B) A sagittal incision was made along the middle line. (C) The periosteum was softly separated, and the calvarium was adequately exposed. (D) Full-thickness calvarial bone of 5-mm diameter was removed on the right side of the skull. (E) A scaffold was implanted. (F) The periosteum and skin were sutured.



**Fig. S2** TEM images (A, B) and size distribution (C) of  $\gamma$ -Fe<sub>2</sub>O<sub>3</sub> nanoparticles



**Fig. S3** EDS mapping of distribution of elements in PPT-Fe scaffolds



**Fig. S4** Cell proliferation of rADSCs incubated with  $\gamma\text{-Fe}_2\text{O}_3$  at different concentrations measured by the CCK-8 assay (\*  $p < 0.05$  vs. 0  $\mu\text{g/mL}$ ; &  $p < 0.05$  vs. 50  $\mu\text{g/mL}$ ; #  $p < 0.05$  vs. 100  $\mu\text{g/mL}$ )

**Table S1** Primer sequences for RT-PCR analysis

| Gene         | Forward primer (5'–3') | Reverse primer (5'–3') |
|--------------|------------------------|------------------------|
| GAPDH        | GGCACAGTCAAGGCTGAGAATG | ATGGTGGTGAAGACGCCAGTA  |
| <i>alp</i>   | CGAGCAGGAACAGAAGTTTGC  | GAATCCGACCCACGGAGG     |
| <i>bmp2</i>  | CAGTGGGAGAGCTTTGATGT   | ACCTGGCTTCTCCTCTAAGT   |
| <i>coll</i>  | GAAGACCTGGCGAGAGAGGA   | TCAATCCATCCAGACCGTTG   |
| <i>runx2</i> | GCCGGGAATGATGAGAACTA   | GGACCGTCCACTGTCACTTT   |