Supporting Information

Green and Kilogram-Scale Synthesis of Fe Hydrogel for Photothermal Therapy of Tumors in Vivo

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Figure S1. SEM image of Fe powder.



Figure S2. Photograph of Fe powder added into PBS (30 mg Fe/mL) for a few seconds.



Figure S3. The loading capability and long-term stability of ALG-Ca²⁺-Fe with different concentrations of Fe stored at 4 $^{\circ}$ C for 28 days.



Figure S4. SEM image of ALG-Ca²⁺-Fe (30 mg Fe/mL).



Figure S5. (a) The images of ALG-Ca²⁺-Fe (30 mg Fe/mL) before and after centrifugation at different rotational speeds for 3 min. (b) The images of ALG-Ca²⁺-Fe before and after centrifugation (1000 r/min, 3 min) with different concentrations.



Figure S6. The XRD patterns of Fe powder stored in different conditions for different times.



Figure S7. Large-scale production of ALG-Ca²⁺-Fe in lab synthesis (1019.4 g).



Figure S8. (a) The photothermal heating curves of PBS and ALG-Ca²⁺-Fe (30 mg Fe/mL) irradiated by an 808 nm laser irradiation at different power densities for 10 minutes. (b) IR thermal images of PBS and ALG-Ca²⁺-Fe (30 mg Fe/mL) irradiated by an 808 nm laser irradiation at different power densities for 10 minutes.



Figure S9. Blood biochemistry analysis of Kunming mice after subcutaneous injection of ALG-Ca²⁺-Fe for different times (50 μ L, 80 mg Fe/mL, n=5).



Figure S10. Photographs of excised tumors from 4T1 tumor-bearing mice with different treatments after 14 days.



Figure S11. H&E staining images of tumors from 4T1 tumor-bearing mice after different treatments for 14 days.