

Bubble-Assisted HIFU Ablation Enabled by Calcium Peroxide

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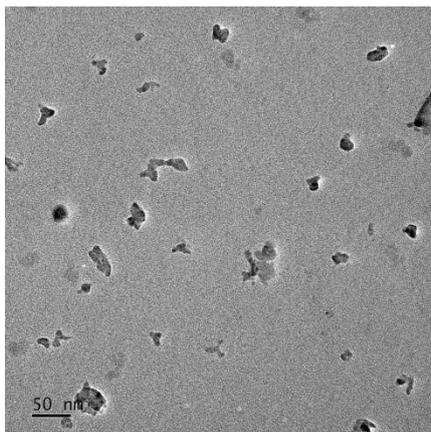


Figure S1. TEM image of CaO_2 NPs.

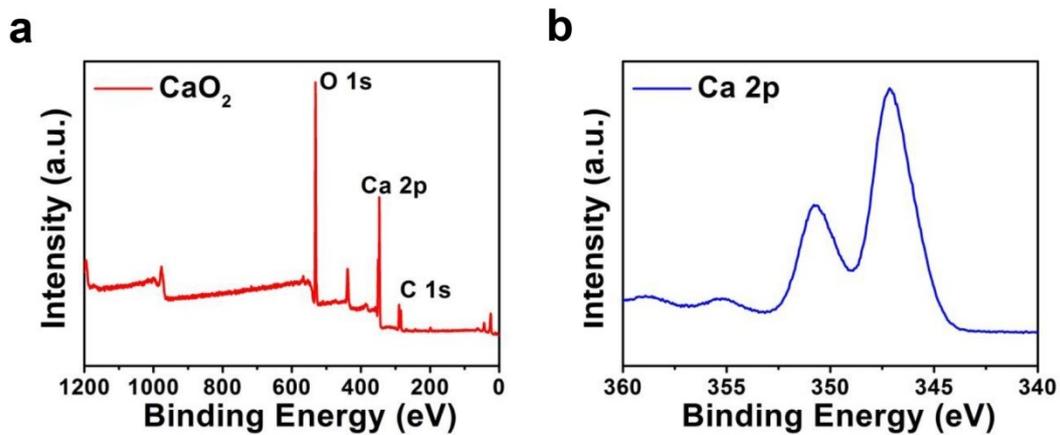


Figure S2. The XPS survey scan (a) and Ca 2p scan (b) of CaO_2 NP.

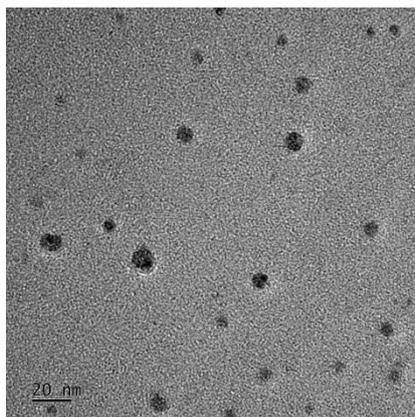


Figure S3. TEM image of CaO₂@SiO₂ NPs.

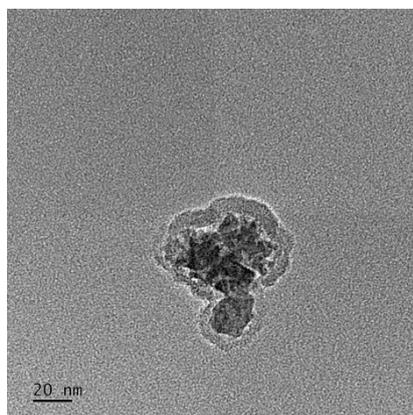


Figure S4. HRTEM image of CaO₂@SiO₂ NPs.

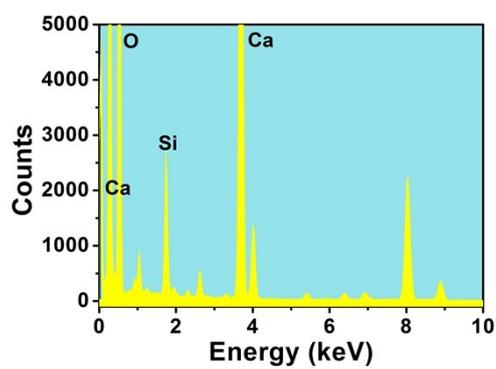


Figure S5. X-ray energy dispersive spectroscopy (EDS) of CaO₂@SiO₂ NPs.

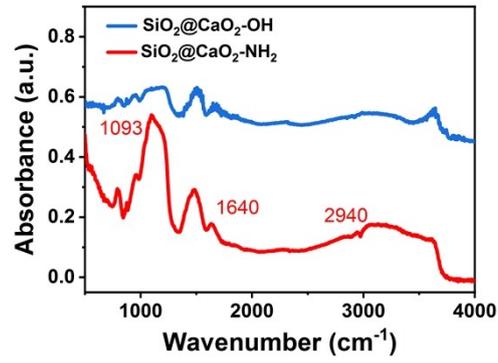


Figure S6. FTIR spectra of CaO₂@SiO₂ NPs before and after APTES modification.



Figure S7. Digital photos of TMB before and after adding CaO₂@SiO₂ NPs in the presence of Fe²⁺.



Figure S8. The digital photos of ablated liver in different treatment groups including PBS, SiO₂ and CaO₂@SiO₂ after HIFU treatment.

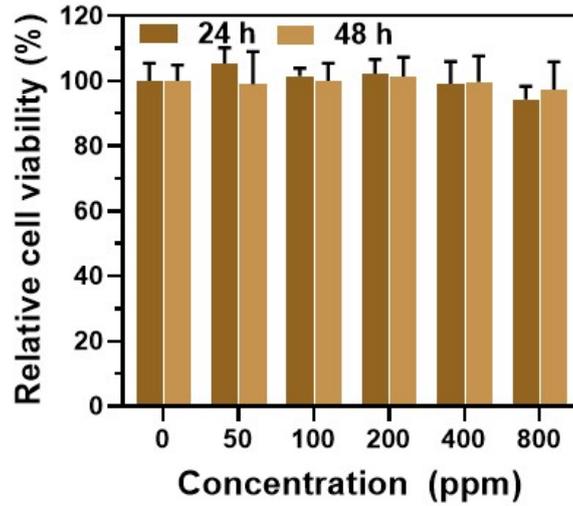


Figure S9. Relative viabilities of 4T1 cells after incubation with CaO₂@SiO₂ NPs at elevated concentrations (0, 50, 100, 200, 400 and 800 μg mL⁻¹) for 24 h and 48 h.

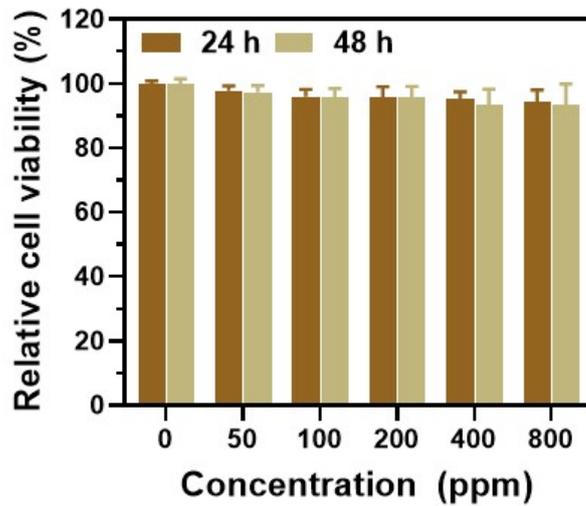


Figure S10. Relative viabilities of LLC cells after incubation with CaO₂@SiO₂ NPs at elevated concentrations (0, 50, 100, 200, 400 and 800 μg mL⁻¹) for 24 h and 48 h.

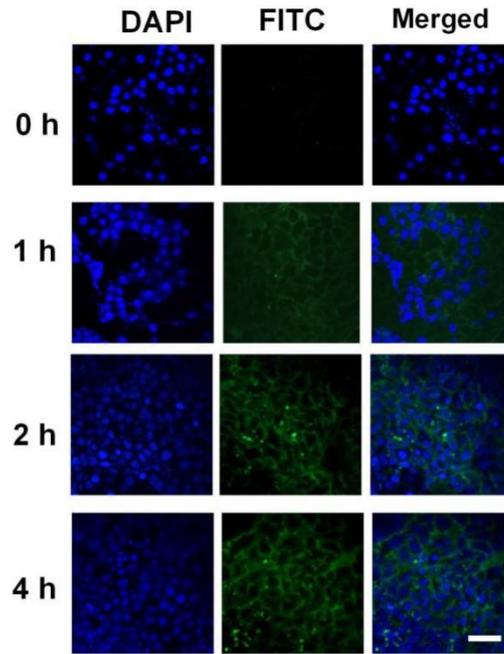


Figure S11. CLSM images of 4T1 cells after co-incubation with FITC-labeled $\text{CaO}_2@SiO_2$ NPs for 0, 1, 2 and 4 h. All the scale bars are 50 μm .

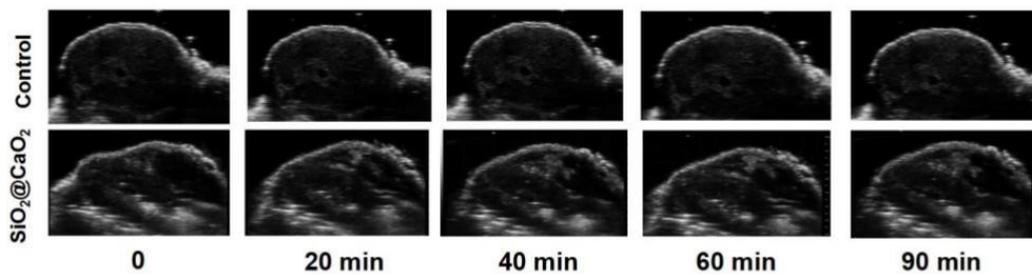


Figure S12. Real time B-mode US imaging of 4T1 tumor-bearing mice after *i.t.* administration of $\text{CaO}_2@SiO_2$ NPs for prolonged time intervals.

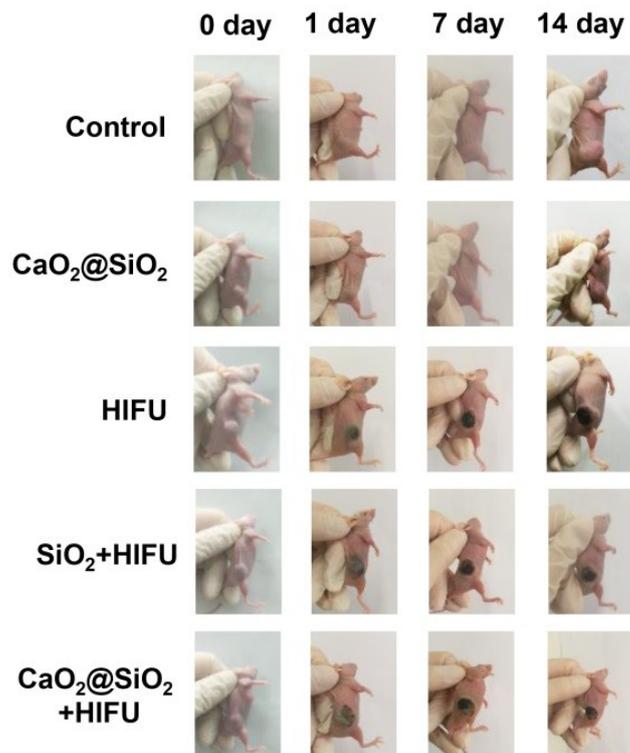


Figure S13. Digital images of 4T1 tumors from each group after different treatments for two weeks.

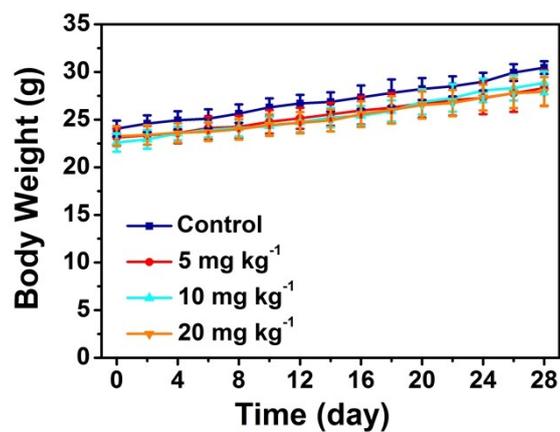


Figure S14. Time-dependent body-weight changing curves of Kunming mice during one-month's feeding period.

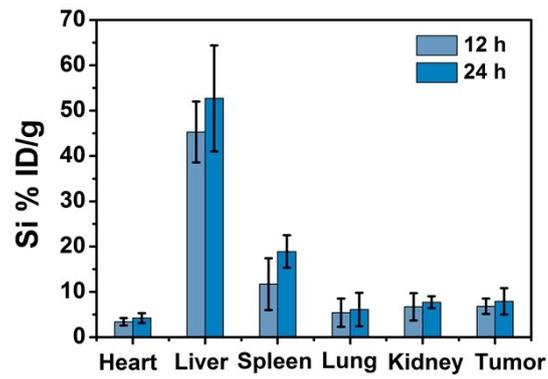


Figure S15. Biodistribution test after the intravenous administration of $\text{CaO}_2@SiO_2$ NPs into LCC tumor-bearing mice for 12 and 24 h (n = 3).

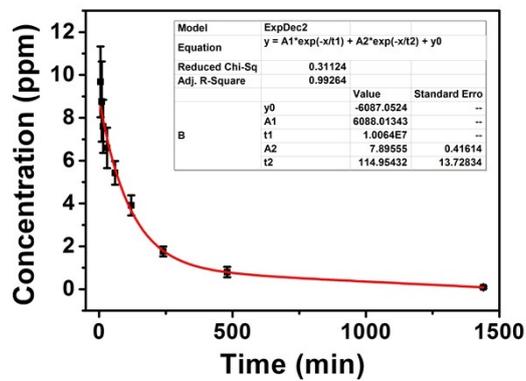


Figure S16. Blood circulation curve of intravenously injected $\text{CaO}_2@SiO_2$ NPs (n = 3).