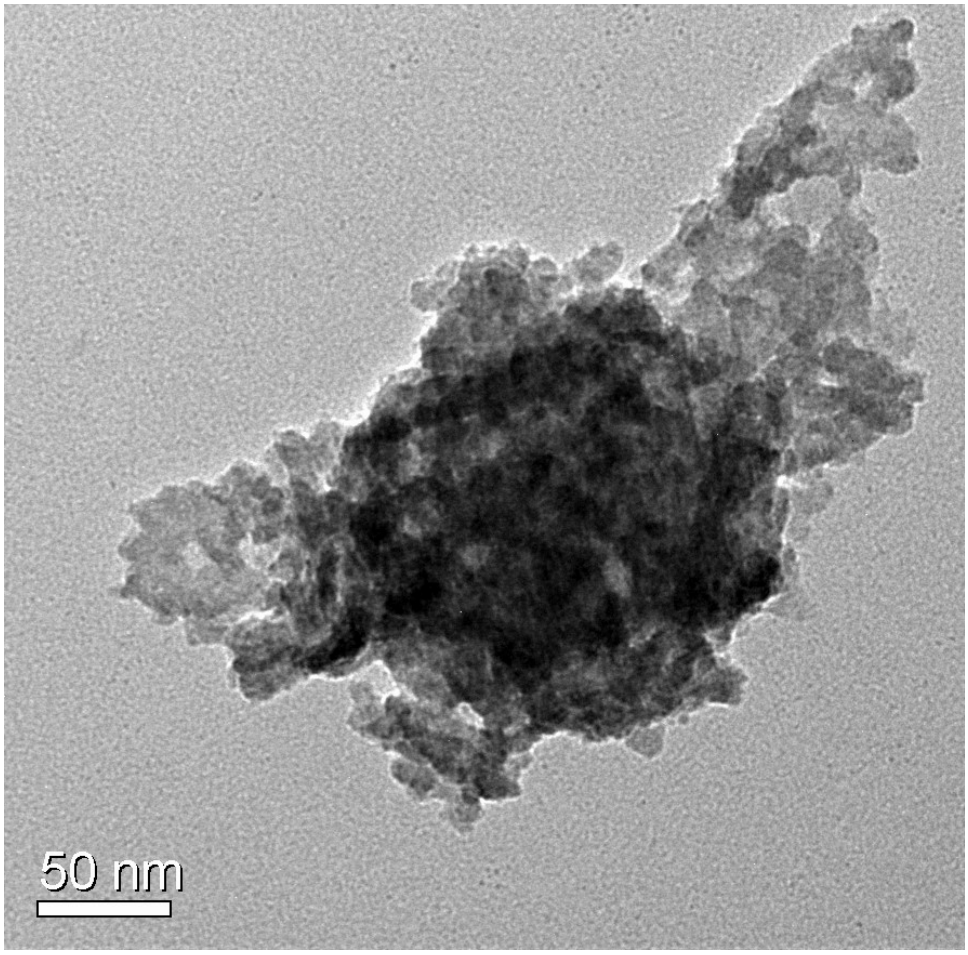


Figure S1 TEM image of the FCM nanoparticles oscillated at pH 5.0 for 24 h.

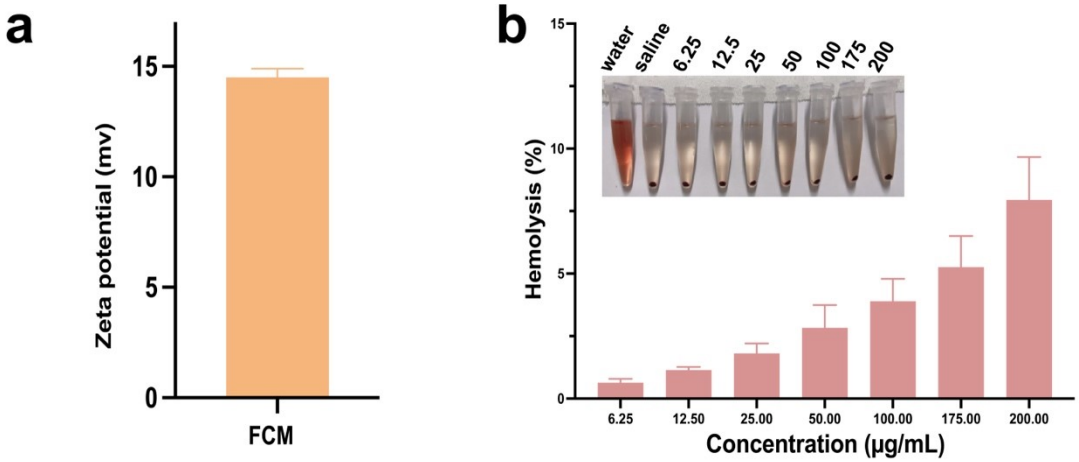


Figure S2 (a) Zeta potentials of FCM nanoparticles. (b) Corresponding quantitative hemolysis analysis of RBCs after incubation with FCM nanoparticles for 2 h at 37°C. Inset: actual images of RBC hemolysis.

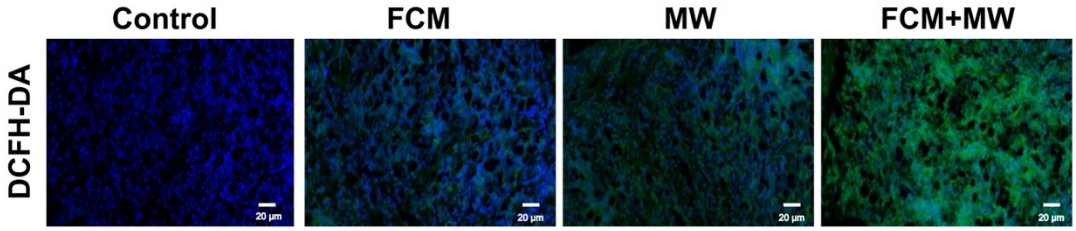


Figure S3 DCFH-DA staining images of tumor tissue sections obtained from H22 BALB/c mice with various treatments. (Scale bar: 20 μm).

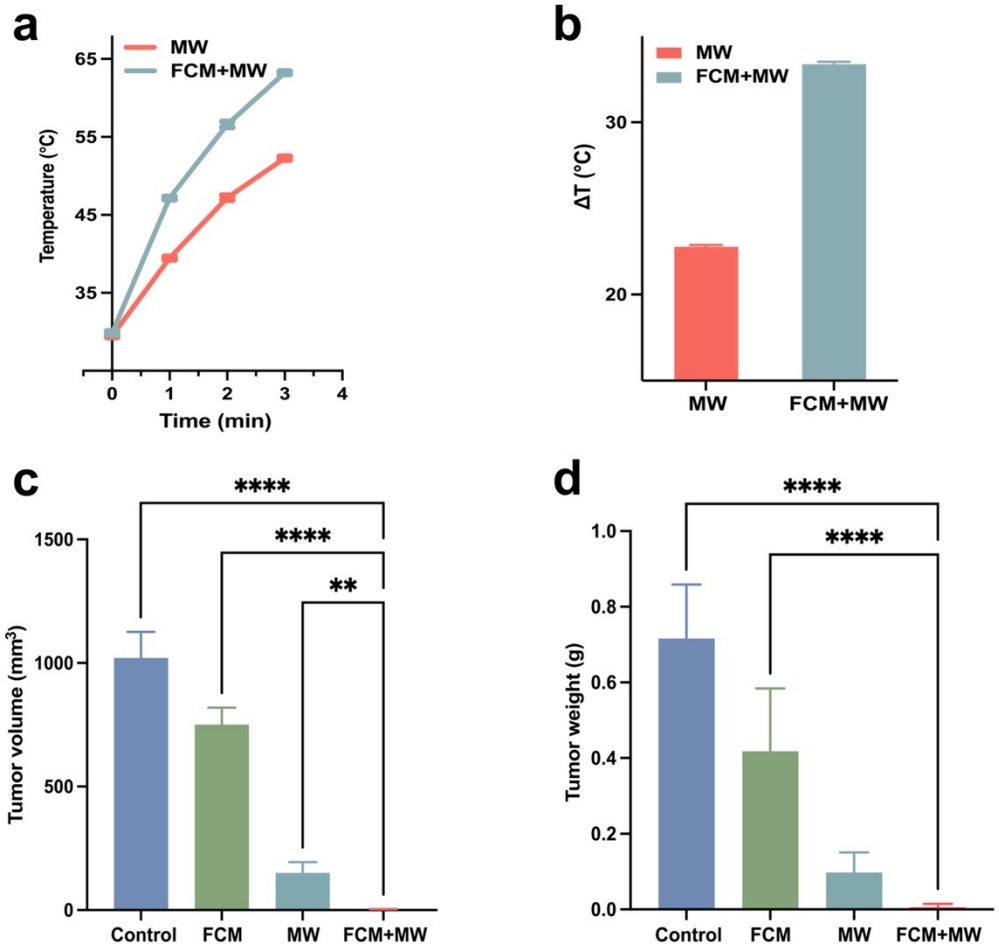
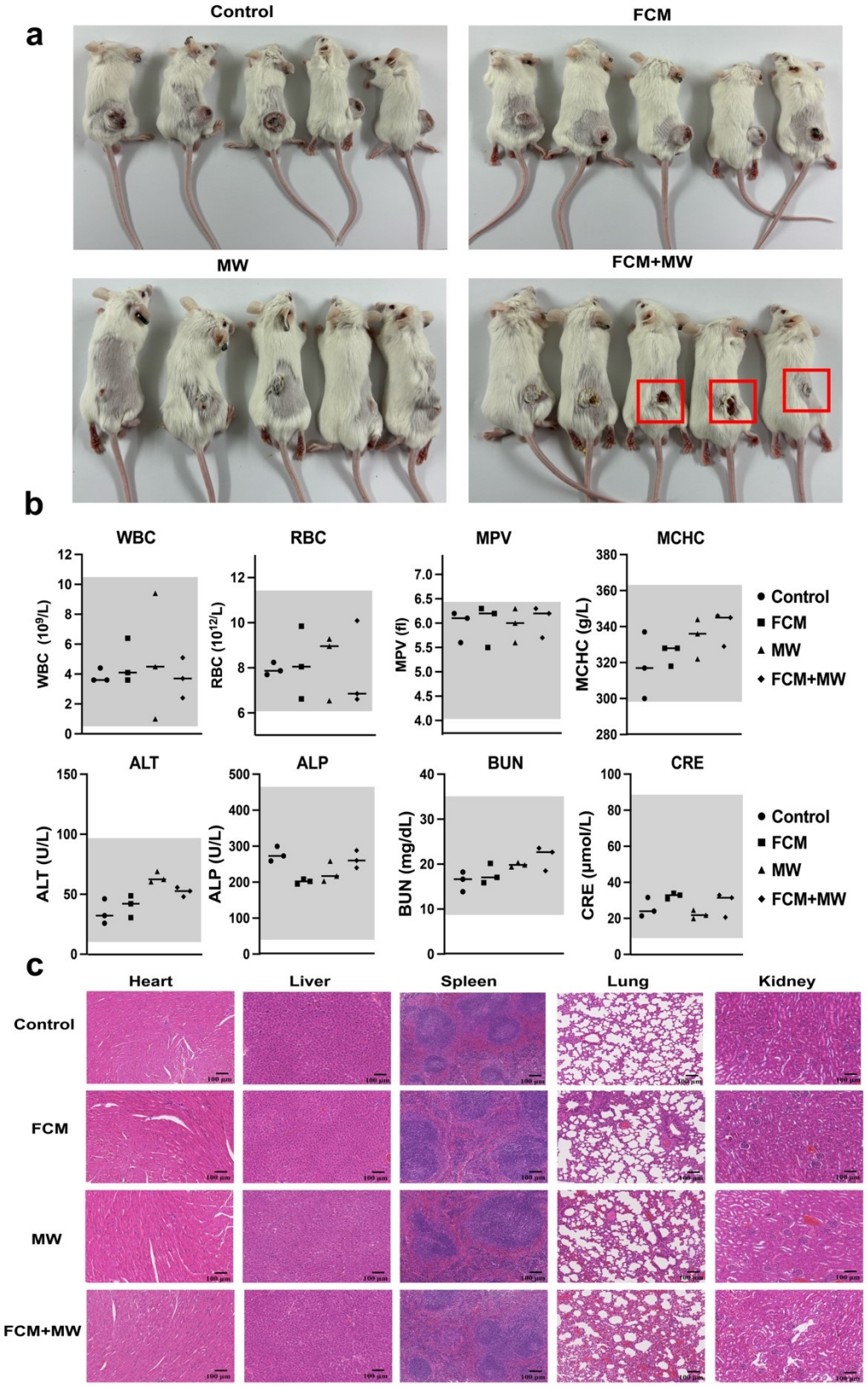


Figure S4 (a, b) Corresponding temperature increase curves and temperature change values at the tumor site upon exposure to microwave irradiation for 3 min. (c, d) Tumor volume and tumor weight of mice after treatment (**P < 0.01, ****P < 0.0001).



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15 **Figure S5** (a) In vivo antitumor efficacy of FCM nanoparticles on H22 BALB/c mice.

16 (b) Blood routine and blood biochemical data were obtained from mice after two weeks

of treatment (n=3). (The gray zone represents the normal interval). (c) H&E staining images of tumor tissue and other major organs after treatment in the different groups (scale bar: 100 μm).

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