Electronic Supplementary Material (ESI) for Biomaterials Science.

Size Effect of Mesoporous Organosilica Nanoparticles on Penetration and Accumulation for Tumor

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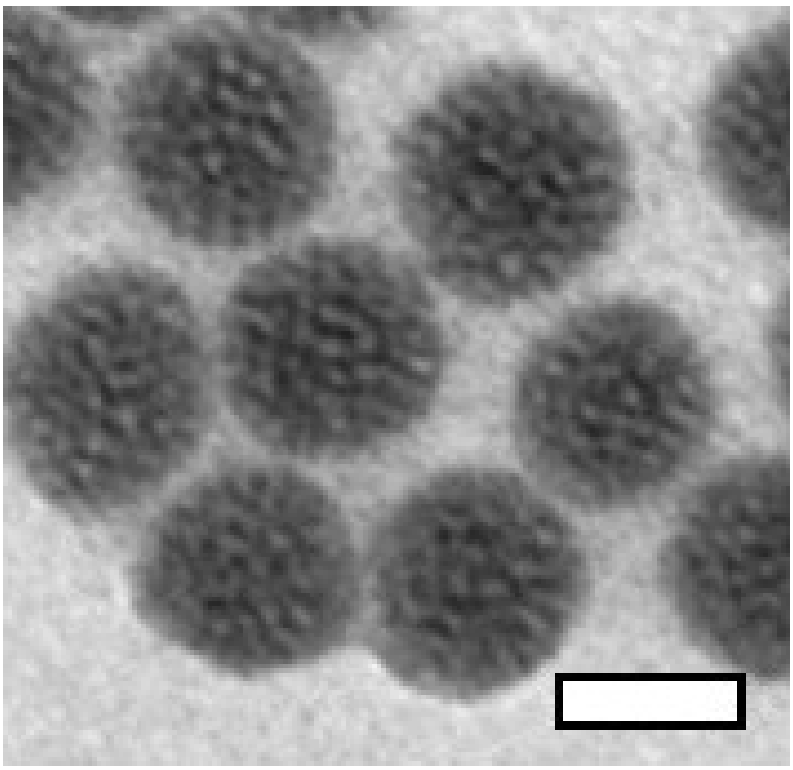

Figure S1. High magnification TEM image of the 60-nm MONs. scale bar: 50 nm.

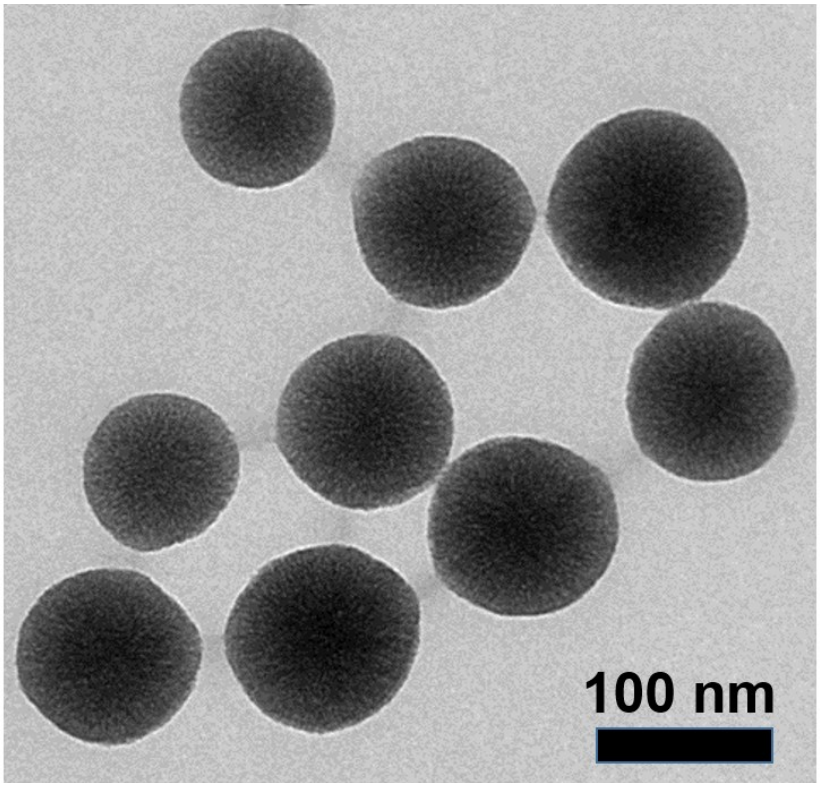

Figure S2. High magnification TEM image of the100-nm MONs.

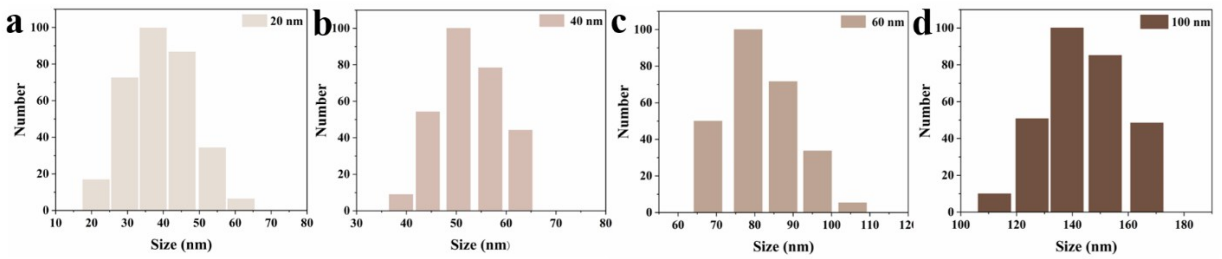

Figure S3.The hydrodynamic size distributions in DMEM containing 10% FBS.

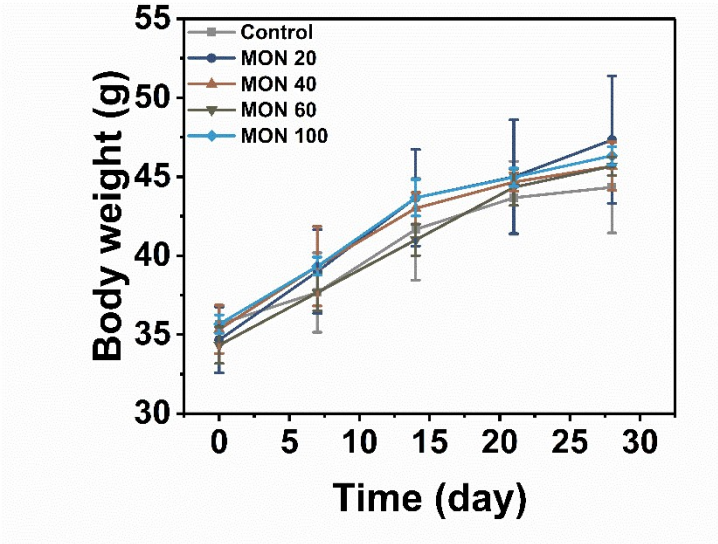

Figure S4. Weight change of the MON-treated mice 30 days post-injection at a dose of 5 mg kg^{-1}.

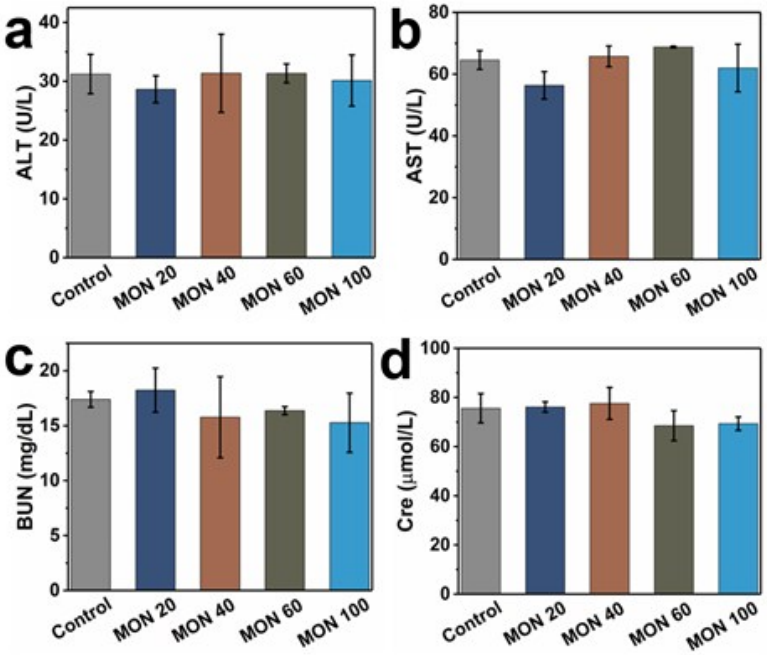

Figure S5. Serum biochemical analysis of the mice after injection with different-sized MONs at a dose of 5 mg/kg. The measures include ALT, AST, BUN, and Cre.

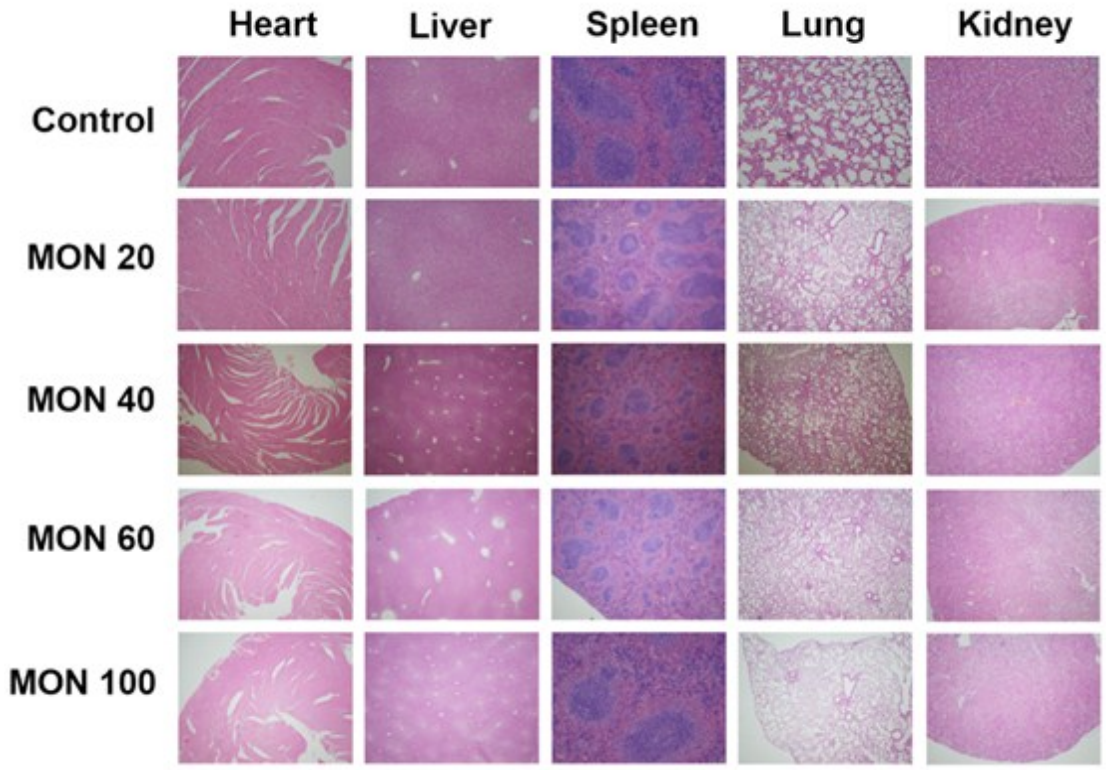

Figure S6. Histological images of the major organs of mice after intravenous administration of different-sized MONs at a dose of 5 mg kg^{-1} at 30 days postinjection. All images shown are of 100× magnification.

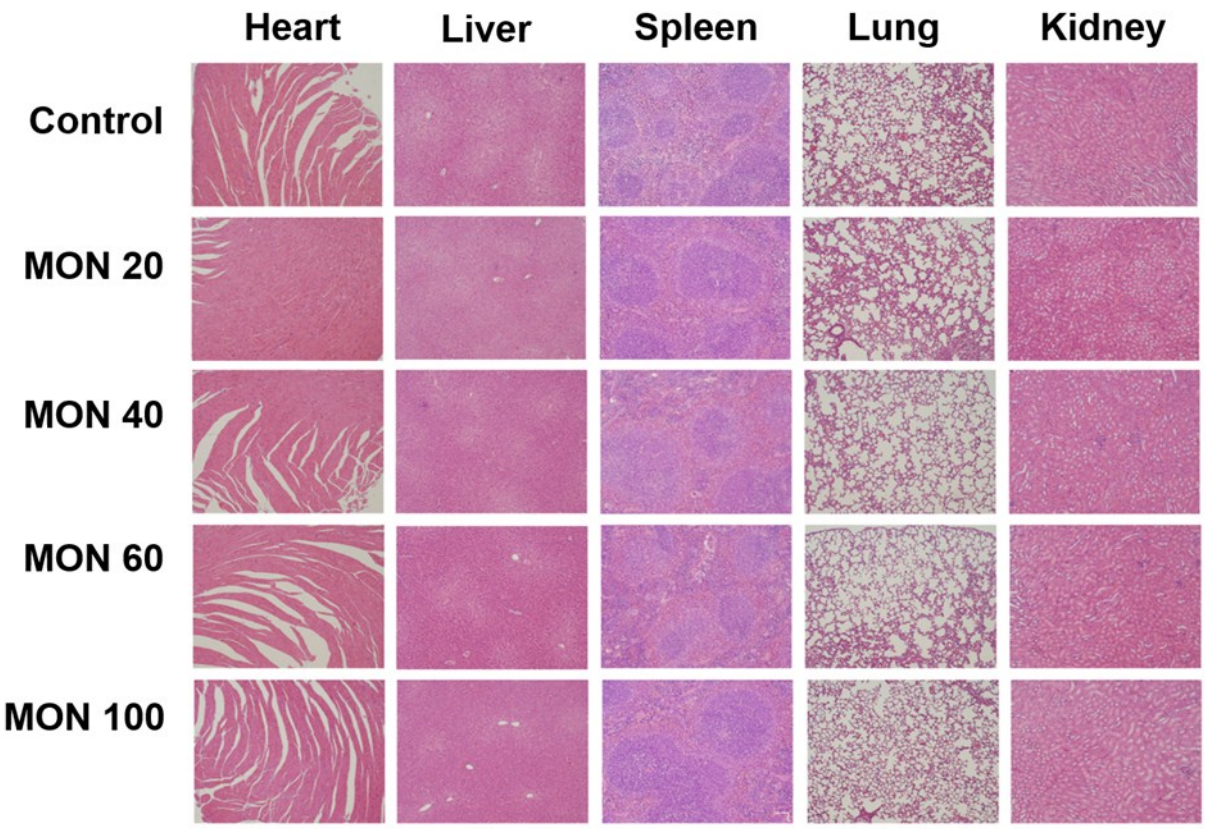

Figure S7. Histological images of the major organs of mice after intravenous administration of different-sized MONs at a dose of 20 mg kg^{-1} at 30 days postinjection. All images shown are of 100× magnification.

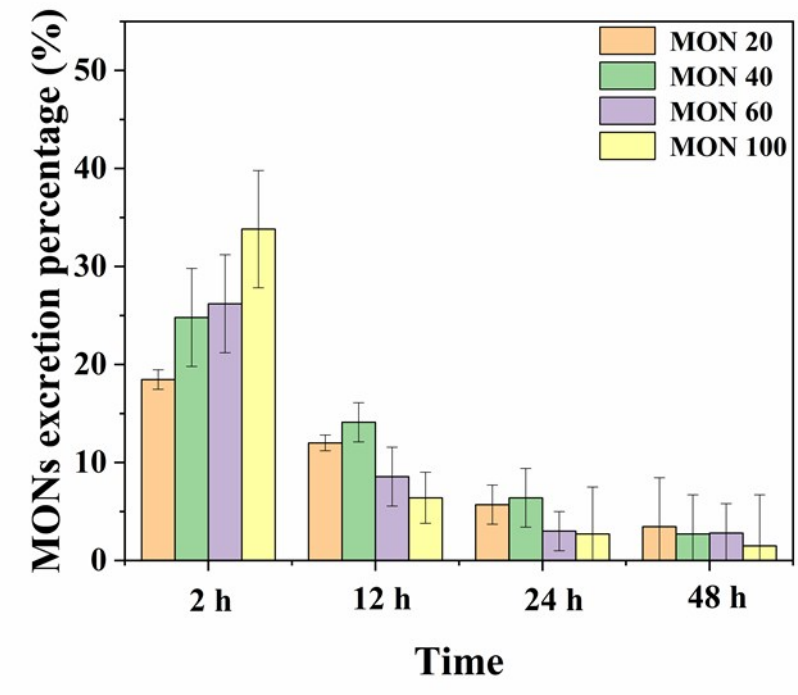

Figure S8. Excretion percentages of the MONs of different particle sizes in urine of ICR mice after tail intravenous injection. Male ICR mice were randomly separated into four groups (n = 5) and intravenously injected with MONCs (MON-Cy5.5) at doses of 5 mg $kg^{-1}d$. At 2, 12, 24 and 48 h, liquid urine (50 μL) was mixed with cool methanol (450 μL) to determine the fluorescence intensity (A_u, in count per mg urine) and protein concentration of urine (C_p, in mg protein per mg urine). The protein content in urine (expressed by C_p) was measured by the Bradford method using a Bradford Protein Assay Kit, which was purchased from Nanjing KeyGen Biotech Co. Ltd. (Nanjing, China). Furthermore, the sample percentages in each urine specimen (P_{s_urine}, in %) could be calculated according to the volume of urine (V_{urine}, in mL), the protein concentration in urine (C_{p_urine}, in mg protein per mL urine), the fluorescence density of each sample in urine ($A_{s\_urine} = A_u/C_{p\_urine}$, in count per mg protein), and the fluorescence intensity of each unit mass sample (A_{s0}, in count per μg MONs), namely $P_{s\_urine} = C_{p\_urine} \times V_{urine} \times A_{s\_urine}/A_{s0}$.

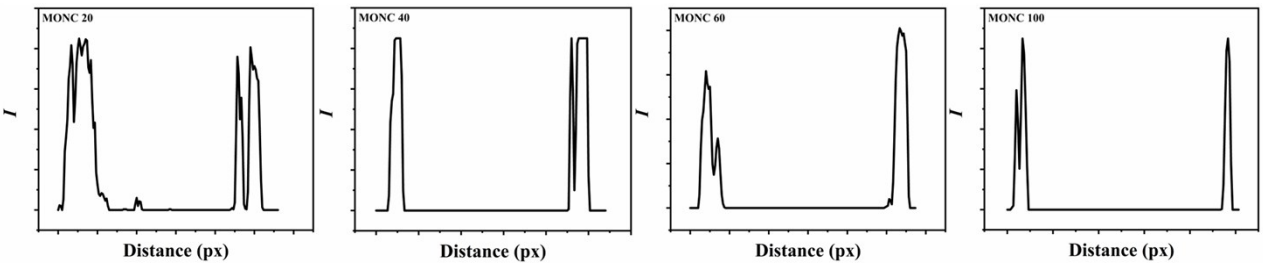

Figure S9. Fluorescent linear profiles of the U87MG MCSs at a depth of 120 μm after incubating with different sized MONs for 4 h**.**

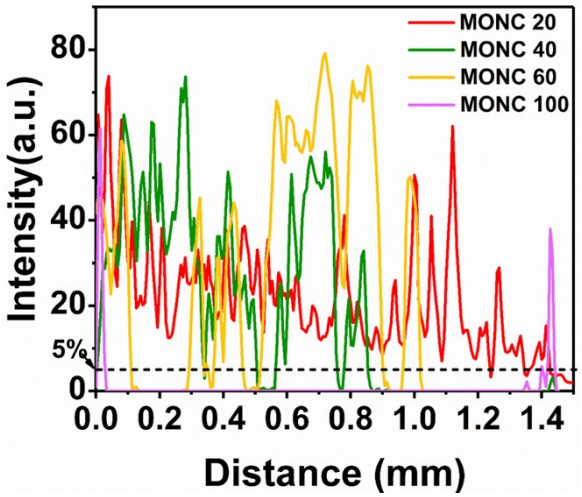

Figure S10. Tumor penetration depth analysis. The profile lines show the fluorescence changes from the tumor periphery to the interior as shown in Figure 4g.