

Supplementary Information

Cancer Cell Membrane-Modified biodegrade mesoporous silica nanocarriers for Berberine therapy of liver cancer

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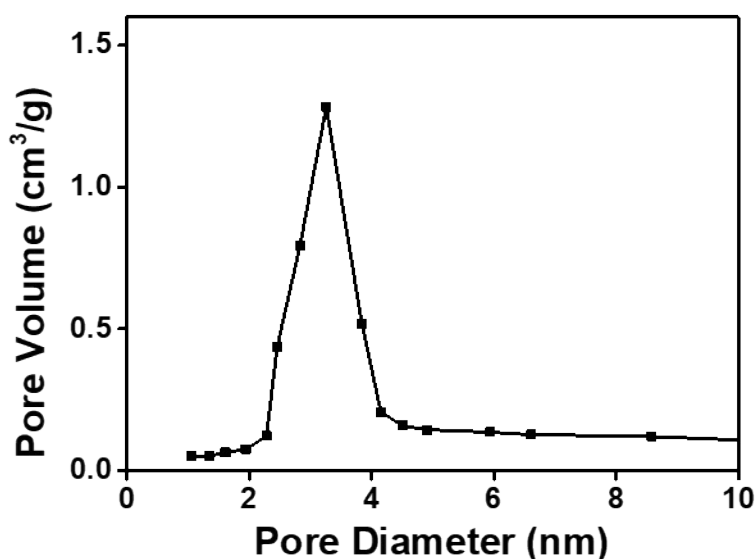
Materials

Tetraethoxysilane (TEOS), Cetyltrimethylammonium bromide (CTAB), Bis[3-(triethoxysilyl)propyl]tetrasulfide (BTES), 3-aminopropyltriethoxysilane (APS) and berberine hydrochloride were obtained from Sigma-Aldrich (St Louis, MO, USA). Hydrochloric acid (HCL), anhydrous ethanol, butanedioic acid (SAA), triethanolamine (TEA) and N, N-dimethylformamide (DMF) were purchased from Sinopharm Chemical Reagent Company (Beijing, China). Fluorescein isothiocyanate (FITC) was purchased from Shanghai Hualan Chemical Co. (Shanghai, China). DMEM medium and foetal bovine serum (FBS) were purchased from HyClone (USA). Glutathione (GSH) and 5-diphenyltetrazoliummerma bromide (MTT) assay kits were purchased from Energy Chemical (Shanghai, China), H&E was purchased from Roche (Switzerland).

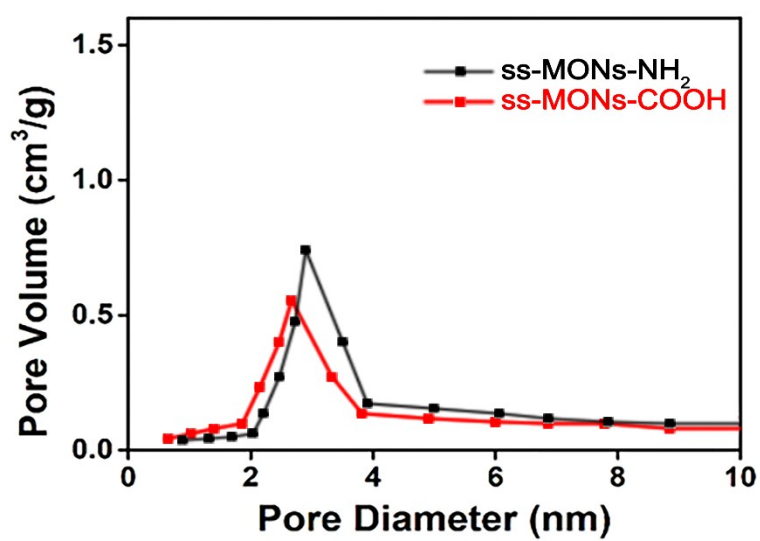
Cell Culture: HepG2 cell line and HL-7702 cell line were obtained from cell

bank of Shanghai, CAS (Shanghai, China) and were grown in RPMI 1640 (Gibico, USA) with 10% FBS, 100 U mL⁻¹ penicillin G sodium, 100 µg mL⁻¹ streptomycin sulfate, 2.5 g L⁻¹ glucose, and 0.11 g L⁻¹ sodium pyruvate. The cells were incubated at 37°C in a humidified incubator with 5% CO₂.

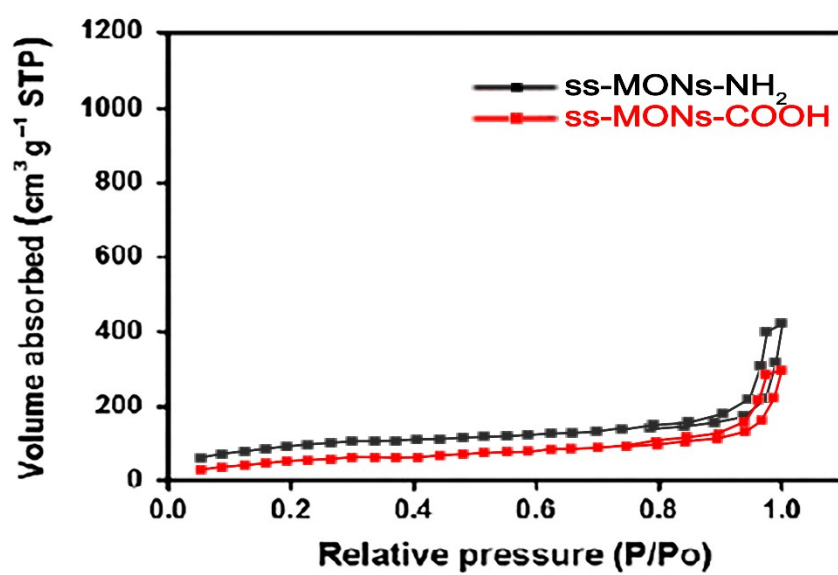
Animals: Female BALB/c Nude mice (4-5 weeks old, 18-22 g) were purchased from Shanghai Experimental Animal Center (Shanghai). All the animal procedures were carried out under the guideline approved by the Institutional Animal Care and Use Committee (IACUC) of the Shanghai Institute of Materia Medica, CAS.



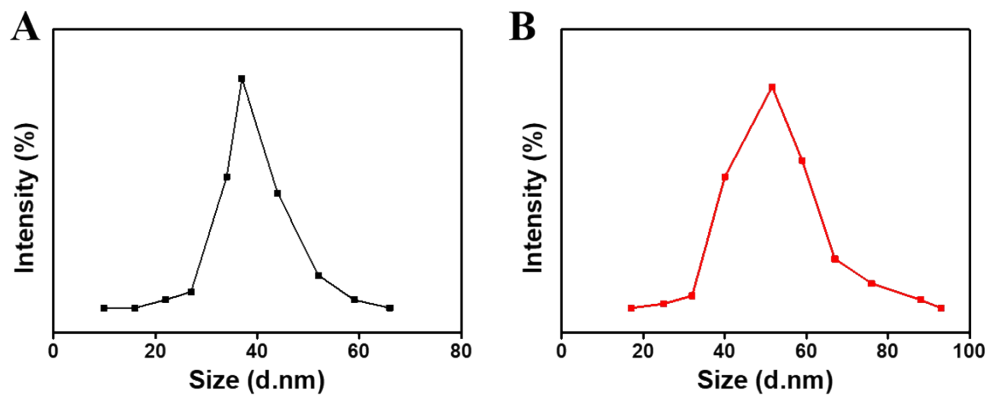
FigS1A. The porous diameter distribution of *ss*-MONs.



FigS1B. The porous diameter distribution of *ss*-MONs-NH₂ and *ss*-MONs-COOH.



FigS1C. N₂ sorption isotherms and porous size distribution of *ss*-MONs-NH₂ and *ss*-MONs-COOH.



FigS2. The size distribution of ss-MONs (A) and CM-ss-MONs (B)

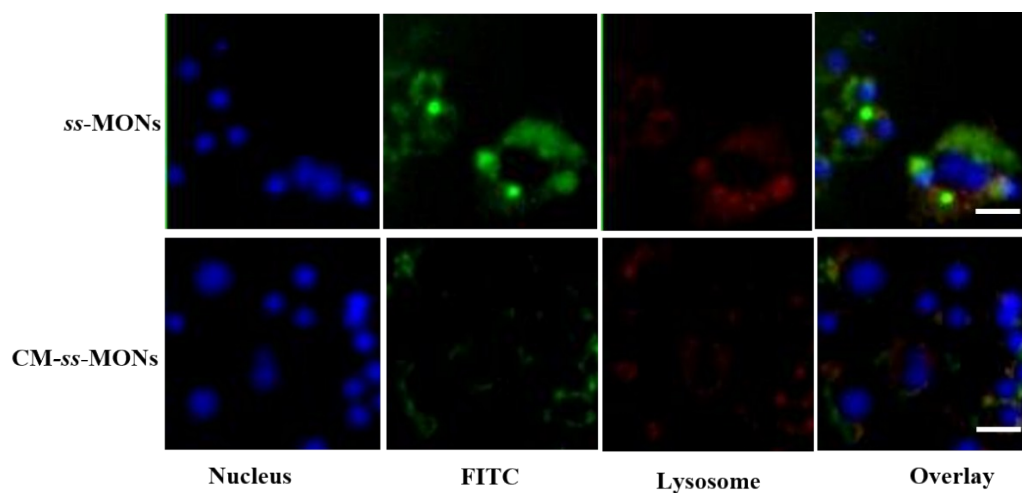


Fig S3. CLSM images of RAW264.7 cells after treated with FITC- labeled ss-MONs or FITC- labeled CM-ss-MONs for 3 h