Electronic Supplementary Information

Overcoming Acquired Drug Resistance in Colorectal Cancer Cells by Targeted Delivery of 5-FU with EGF Grafted Hollow Mesoporous Silica Nanoparticles

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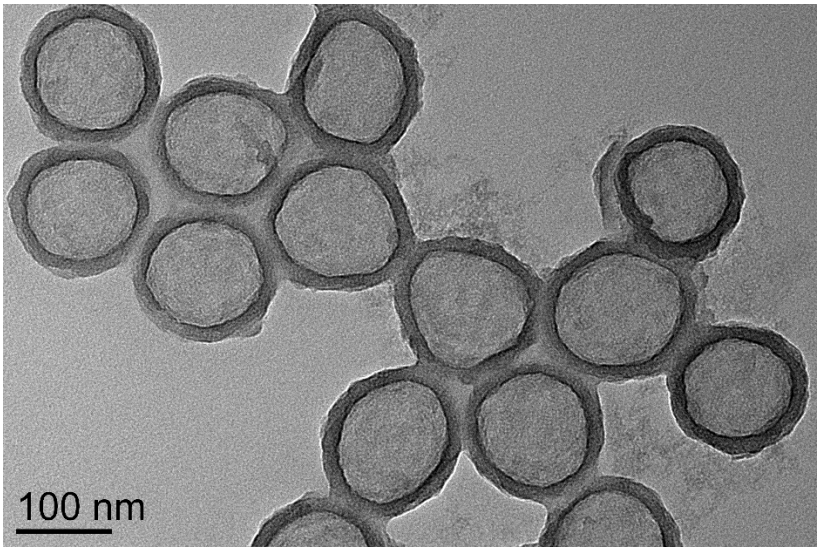

Figure S1. TEM image of EGF-HMSNs

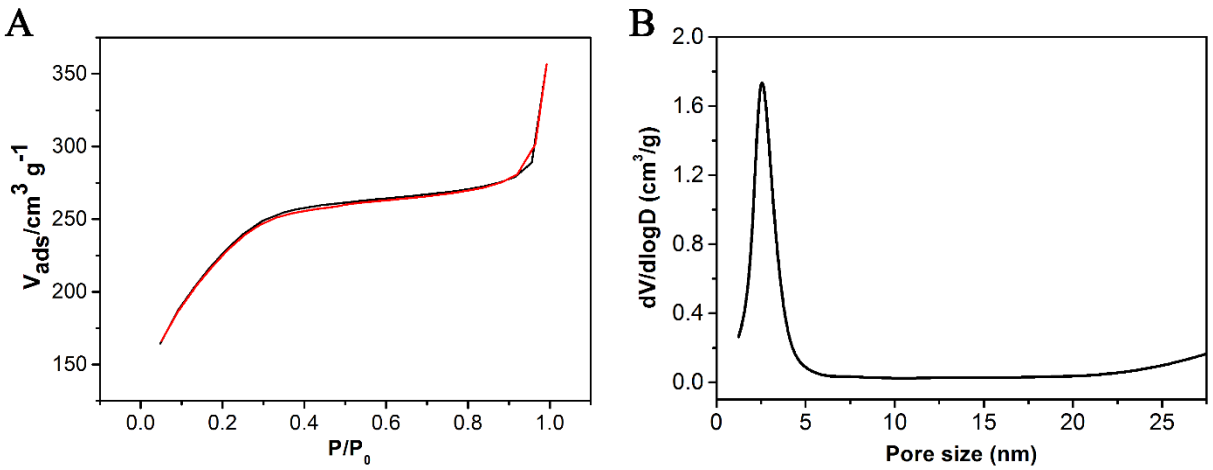

Figure S2. Nitrogen adsorption-desorption isotherm (A) and the pore size distribution (B) of HMSNs.

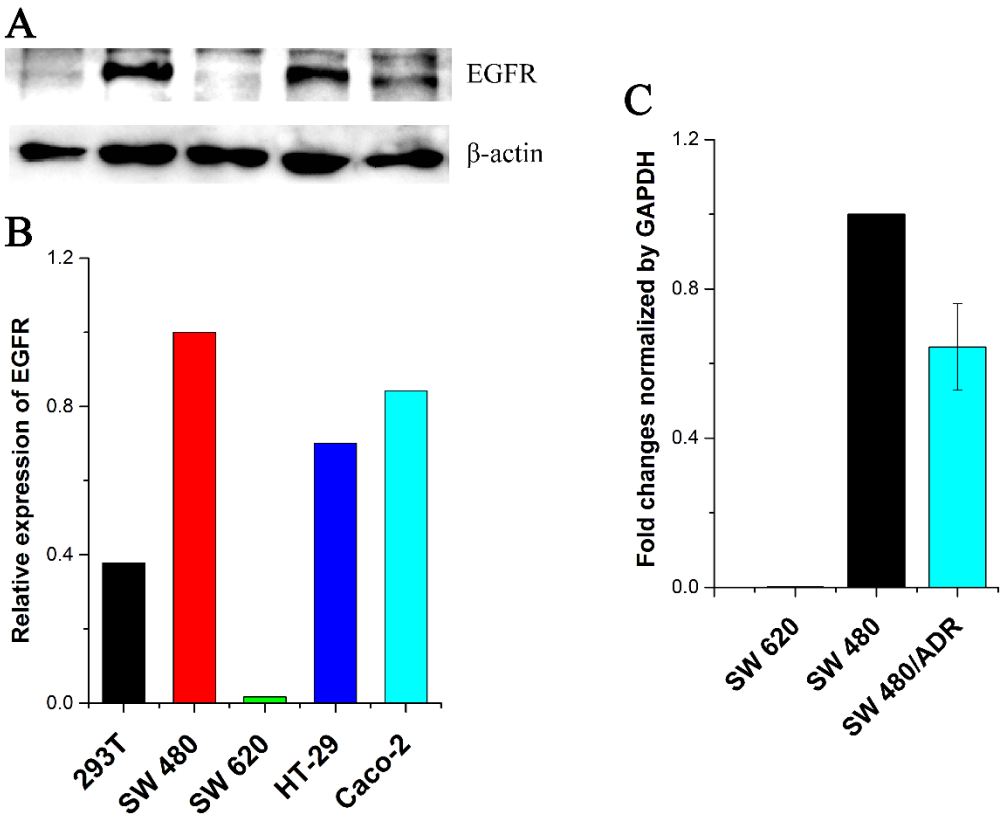

Figure S3. EGFR expression in colorectal cancer cell lines. A: Western blotting analysis of EGFR expression in 293T, SW480, SW620, HT-29 and Caco-2 cells; B: The EGFR expression level was represented by the density of protein band and normalized to the house keeper protein, β-actin; C: EGFR expression of SW620, SW480 and SW480/ADR on mRNA level studied by qRT-PCR.

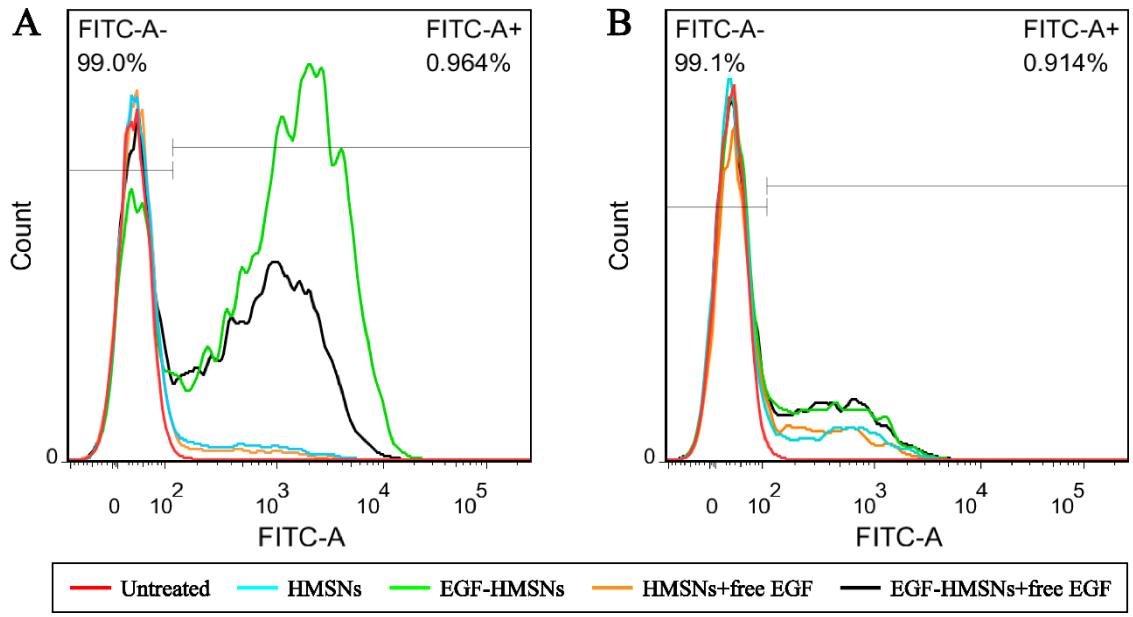

Figure S4. The representative cellular uptake curve of HMSNs and EGF-HMSNs in SW480/ADR (A) and SW620 (B) cells with or without free EGF pre-treatment by flow cytometer.

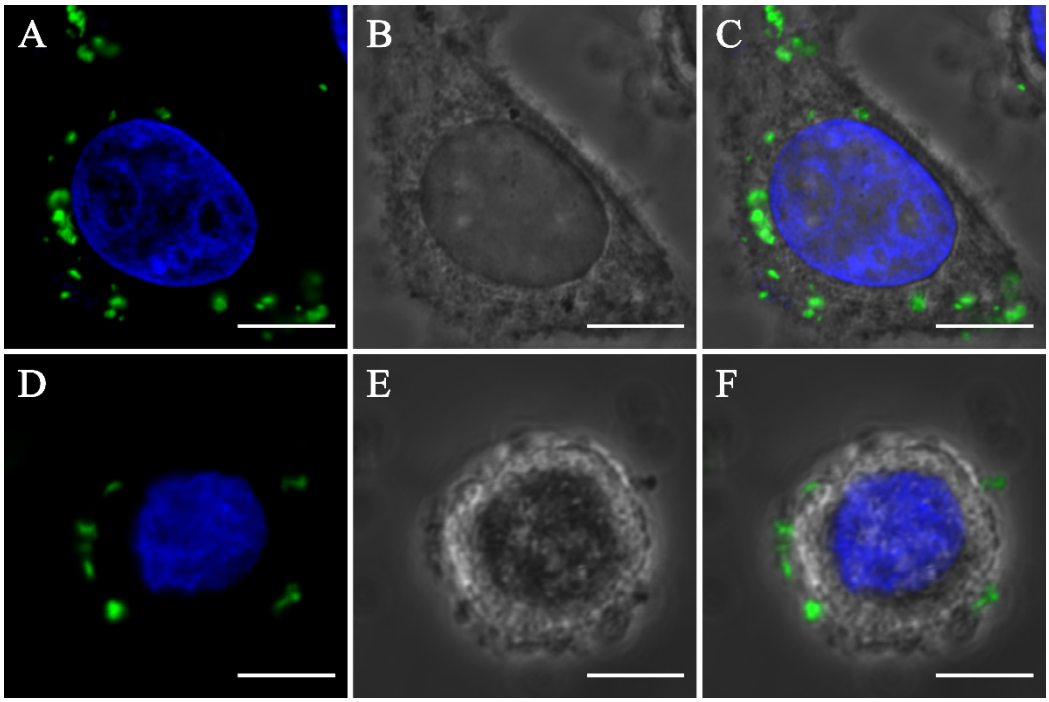

Figure S5. Confocal microscope images of SW480/ADR cells treated with 5 μg/mL of EGF-HMSNs-FITC for 2 hours with (D, E and F) or without (A, B and C) potassium depletion (A and D: fluorescence channel, B and E: phase contrast, C and F: merged images, scale bars: 10 μm).

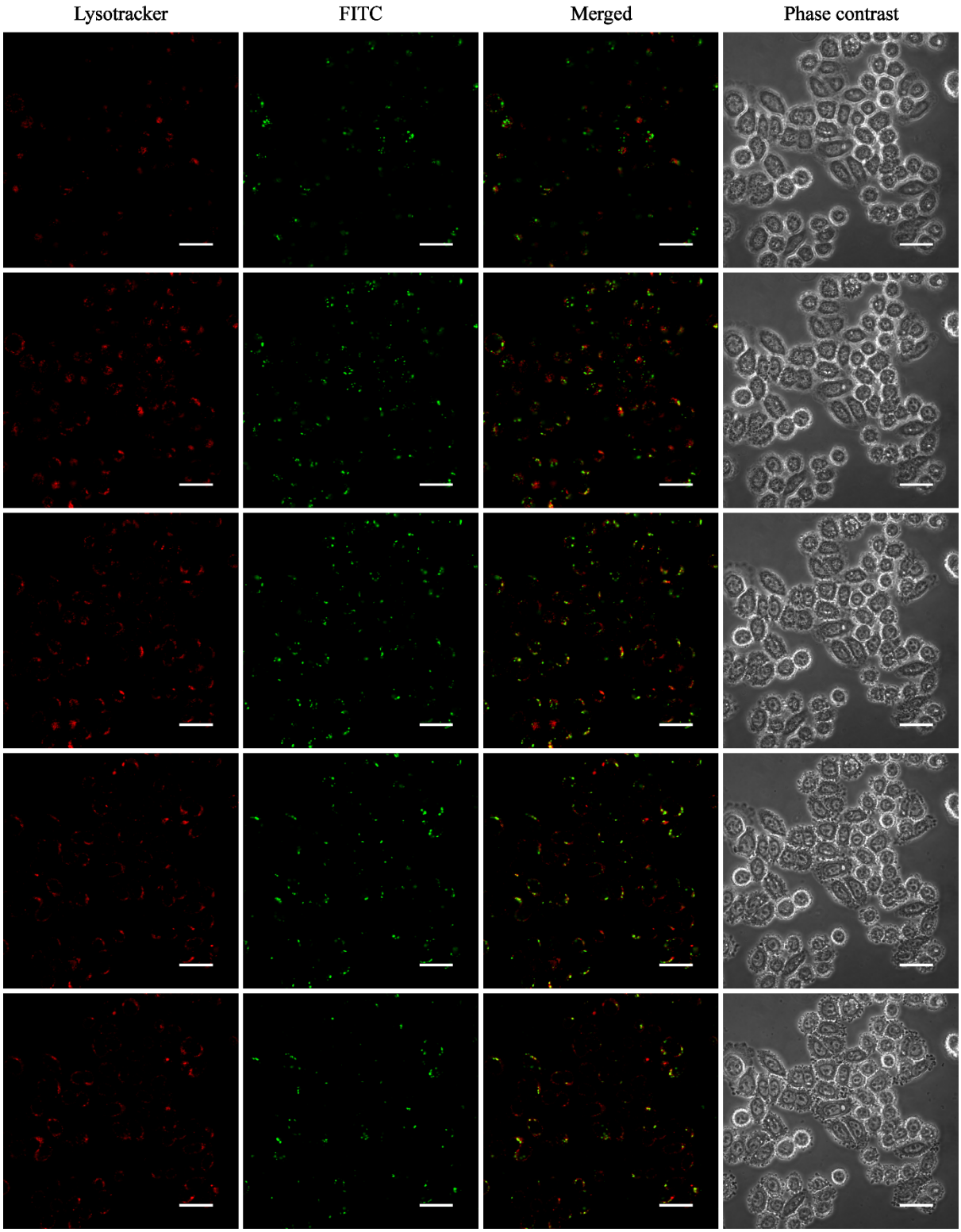

Figure S6. The representative confocal microscope images of different layers from the same field to show the co-localization of EGF-HMSNs with lysosomes. SW480/ADR cells were treated with 10 μg/mL of EGF-HMSNs-FITC (green) for 4 hours and the lysosomes were stained with lysotracker (red). Scale bars: 30 μm.

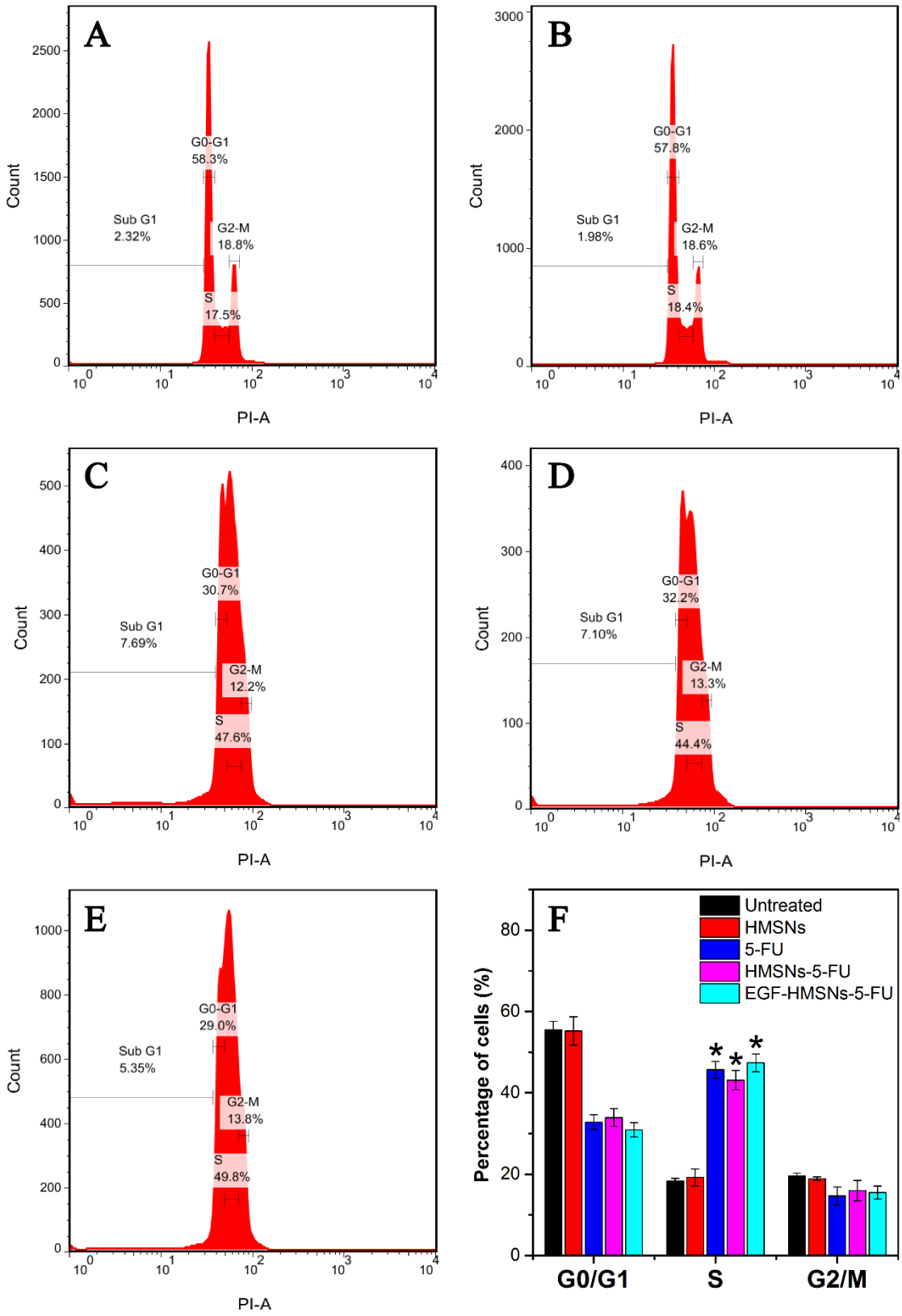

Figure S7. The percentage of cells in each phase after different treatments (A) and the cell cycle distribution of SW480 cells treated without (B, blank control) and with HMSNs (C), free 5-FU (D), HMSNs-5-FU (E) and EGF-HMSNs-5-FU (F). Data was presented as mean ± SD (n=3). (*$p<0.05$)