Supporting Information

Noncovalent assembly of reduced graphene oxide and alkyl-grafted mesoporous silica: an effective drug carrier for near-infrared light-responsive controlled drug release

Dinggeng He, † Xuecai Li, † Xiaoxiao He,* Kemin Wang,* Jinlu Tang, Xiaoxiao Yang, Xing He, Xue Yang and Zhen Zou
Fig. S1 FTIR spectra of the synthesized MSN-C$_{18}$ and MSN. Inset: photo of MSN-C$_{18}$ (left) and MSN (right) solutions. The red circle illustrates the hydrophobicity of MSN-C$_{18}$.

Fig. S2 a) Powder XRD pattern of MSN-C$_{18}$. b) BET nitrogen adsorption-desorption isotherm of MSN-C$_{18}$. Inset: BJH pore size distribution of MSN-C$_{18}$. 
Fig. S3  a) TEM image of MSN nanoparticles after being treated with RGO sheets. b) photo of MSN nanoparticles treated with RGO sheets. A white precipitate was observed in the bottom of centrifuge tube, further indicating that RGO sheets did not exist in the MSN surface.

Fig. S4 UV-vis spectra of MSN-C$_{18}$-RGO and DOX@MSN-C$_{18}$-RGO in aqueous solution (1.0 mg mL$^{-1}$). Inset: photo of MSN-C$_{18}$-RGO (left) and DOX@MSN-C$_{18}$-RGO (right) nanoparticles.
**Fig. S5** CLSM images of SMMC-7721 cells after being incubated with DOX@MSN-C_{18}-RGO for 1 h. Lysotracker Blue (blue fluorescence) was used to stain the lysosomes. Cells were imaged using a 100× oil-immersion objective.

**Fig. S6** CLSM images of SMMC-7721 cells after being treated with DOX@MSN-C_{18}-RGO for 8 h in the absence of NIR light irradiation. Lysotracker Blue (blue fluorescence) was used to stain the lysosomes. Cells were imaged using a 100× oil-immersion objective.
Fig. S7 Viability of SMMC-7721 cells incubated with various MSN-C$_{18}$-RGO (0-200 μg mL$^{-1}$) concentrations with and without NIR light irradiation.