

## Electronic Supplementary Information

### The intracellular controlled release from bioresponsive mesoporous silica with folate as both targeting and capping agent

#### 1. Characterizations

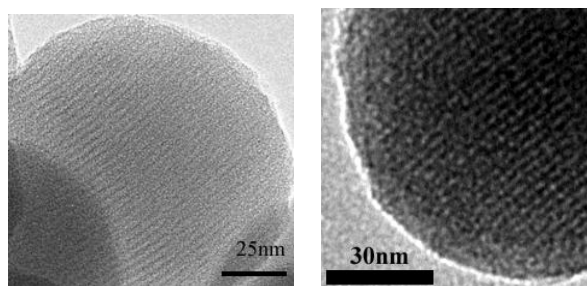


Fig. S1. HRTEM images of the nanoparticles MSH(left) and M-N (right).

#### 2. Release result

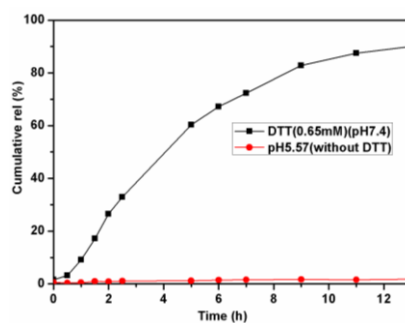


Fig. S2. Release profile of FSS release from FCM-F in an acidic solution (pH = 5.57) without DTT or GSH

#### 3. Measurement of intracellular uptake of the nanoparticles by HeLa Cells

##### 3.1. Flow cytometry

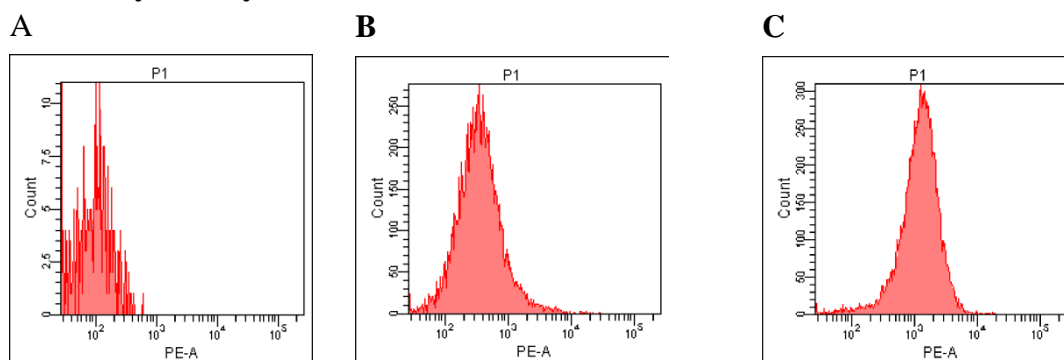


Fig. S3. The mean fluorescent intensity of the blank group (A), control group (B) and experimental group (C).

### 3.2. Confocal fluorescence microscopy measurements

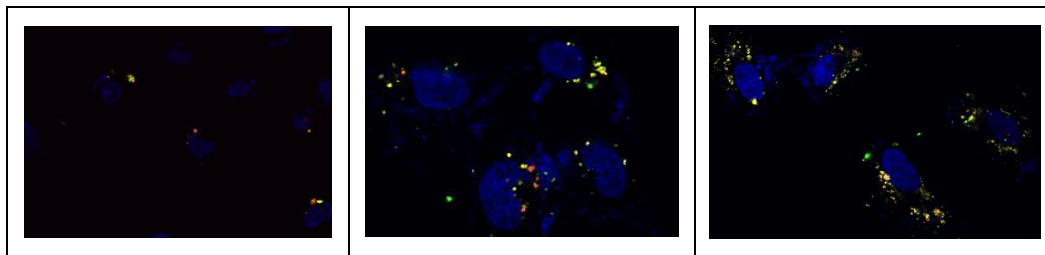


Fig. S4. The merged images of green (fluorescein sodium), red (Rhodamine B), and blue (Hoechst 33258) fluorescent image of the HeLa cells at the certain time intervals 3, 24, 48h. The nuclei of the cells were stained with Hoechst 33258, blue.

### 4. The selected distances in the folate derivatives

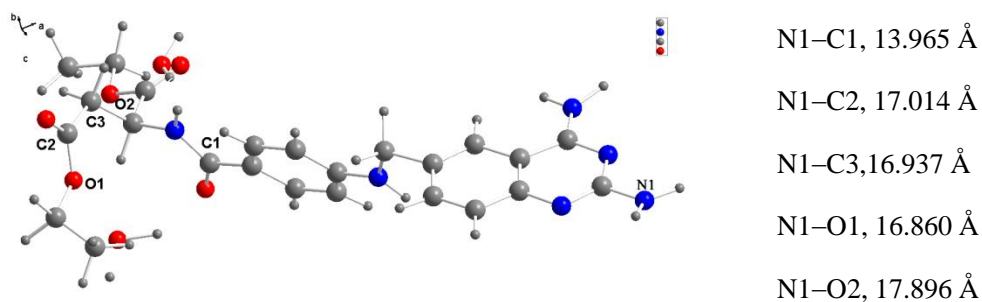


Fig. S5. Selected distances of the folate ester, crystal data of which is obtained from CSD.

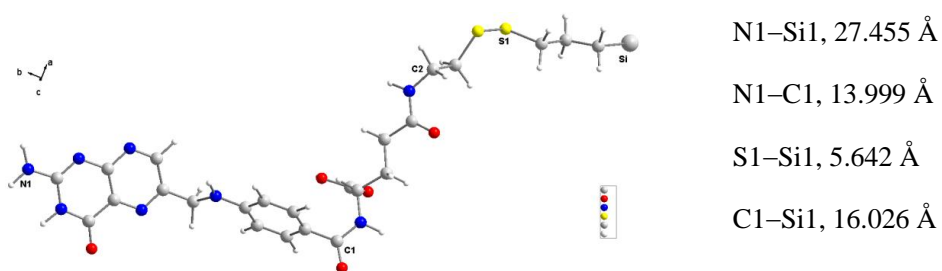


Fig. S6. The fitted stable configuration from Chem 3D and selected distance of folate 7 connected with silica via disulfide bond.