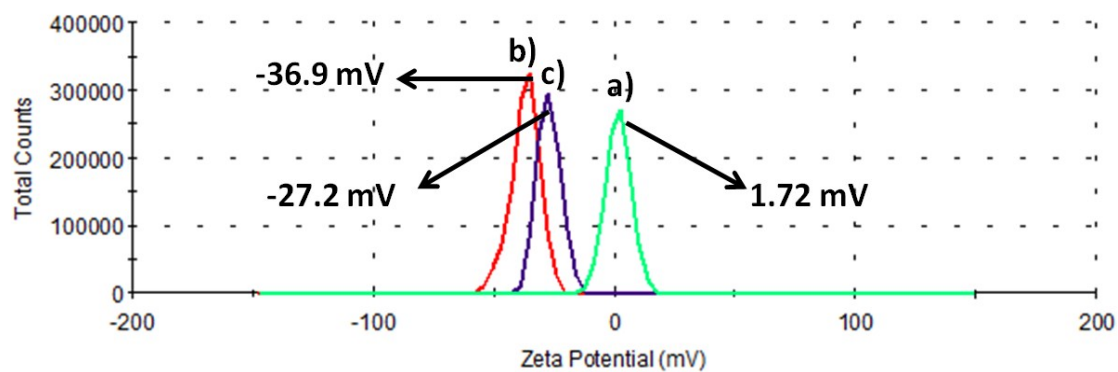


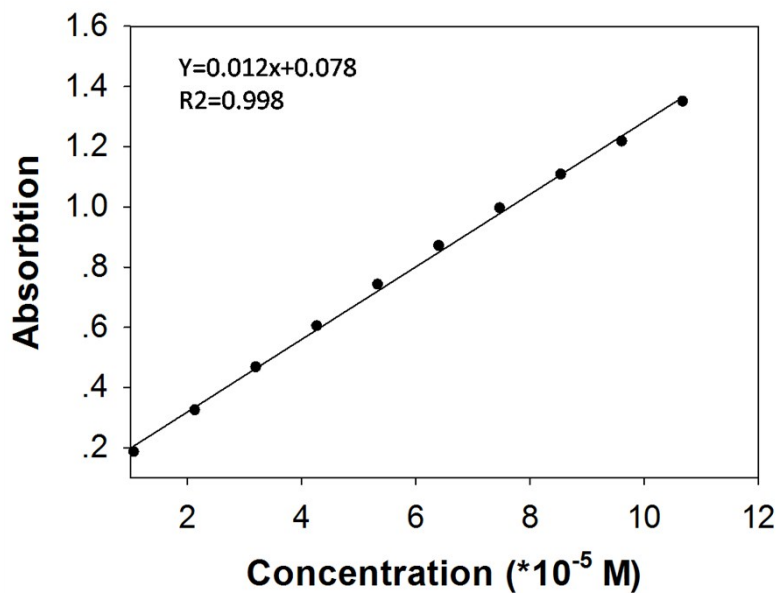
## Supporting Information

### **A reversible molecule-gated system using mesoporous silica nanoparticles functionalized with $K^+$ -stabilized G-rich quadruplex DNA**

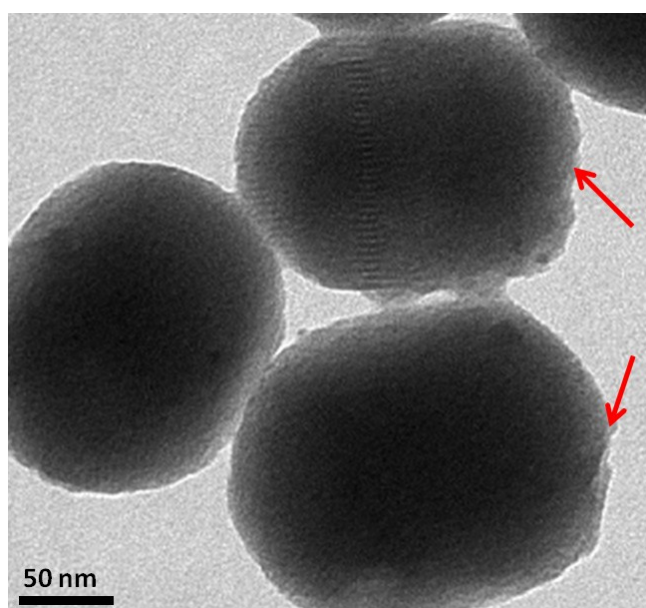
Xue Yang,<sup>†</sup> Dinggeng He,<sup>†</sup> Jie Cao, Xiaoxiao He\*, Kemin Wang\* and Zhen Zou



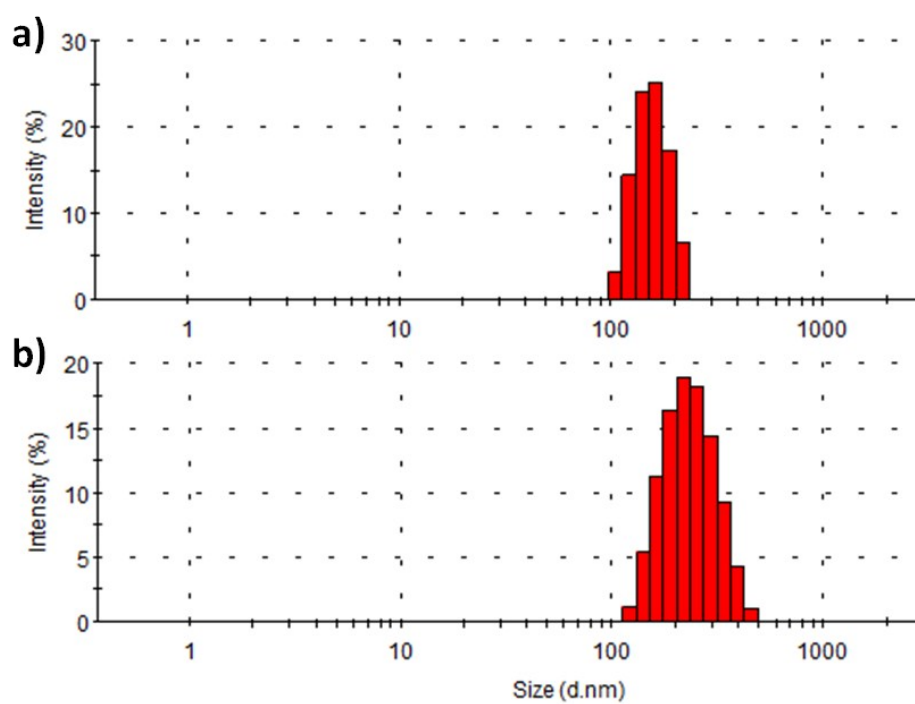
**Fig. S1** Zeta potential of MSN a), MSN-N<sub>3</sub> b) and MSN-GQDNA c)



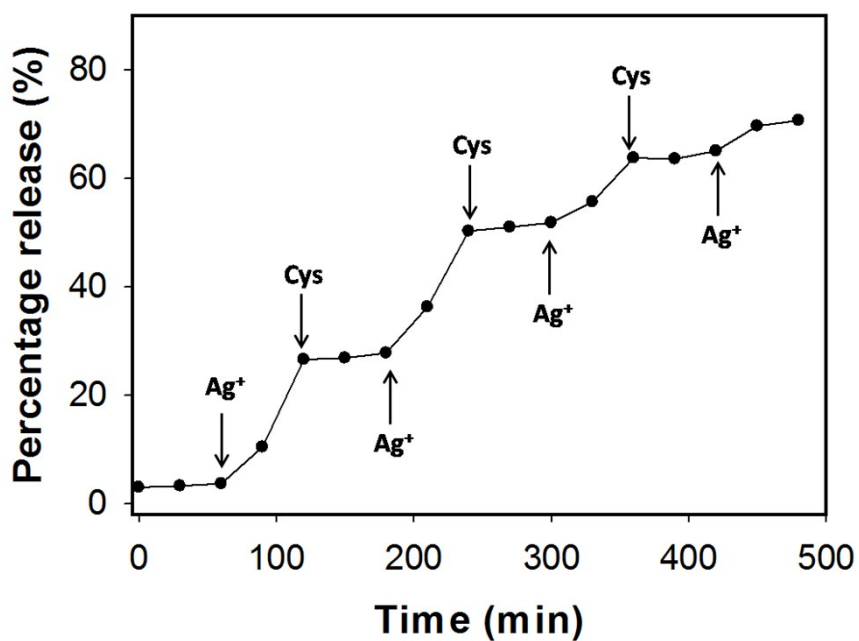
**Fig. S2** Standard curve of Ru(bipy)<sub>3</sub><sup>2+</sup>



**Fig. S3** TEM image of MSN-GDDNA



**Fig. S4** Size distribution of MSN-N<sub>3</sub> a) and MSN-GDDNA b)



**Fig. S5** Partial molecular release profile of  $\text{Ru}(\text{bipy})_3^{2+}$  from MSN-Ru-GQDNA as a function of  $\text{Ag}^+$  and Cys alternative addition

**Table S1.** BET and BJH parameters

	BET surface area SBET ( $\text{m}^2 \text{g}^{-1}$ )	BET pore volume VP ( $\text{cm}^3 \text{g}^{-1}$ )	BJH pore diameter Dp (nm)
MSN-N <sub>3</sub>	851.2	0.782	2.2