Supplementary Material

## Supplementary Figures



**Supplementary Figure 1.** Photographs of MSN, MSN-NH2, MSN-Ce6 and MCPM NPs at days 0, 1, 3, 7 and 21. (From left to right in the photos, four EP tubes are solutions of MSN, MSN-NH2, MSN-Ce6 and MCPM NPs)



**Supplementary Figure 2.** The hydrodynamic size of MSN and MCPM NPs in a 21-day period. (The green line is solutions of MSN and the red line is solutions of MCPM NPs)



**Supplementary Figure 3.** The hydrodynamic size of MCPM NPs with or without laser irradiation in a 7-day period. (The red line is size of MCPM NPs without laser irradiation and the black line is size of MCPM NPs with laser irradiation)



**Supplementary Figure 4**. The changes in T1 relaxation time of MCPM NPs in a 21-day period. (The red line is T1 relaxation time value of MCPM NPs, the embedded image is the corresponding MRI images)



**Supplementary Figure 5**. The infrared thermal images of PBS and different concentrations of MCPM NPs solution (0, 0.03, 0.1, 0.3, 0.5 mg mL-1) during 808 nm laser irradiation (0, 2, 5, 8, 10 min).