

## Supporting information

### Single-step formulation of levodopa based nanotheranostics - Strategy for ultra-sensitive high longitudinal relaxivity MRI guided switchable therapeutics

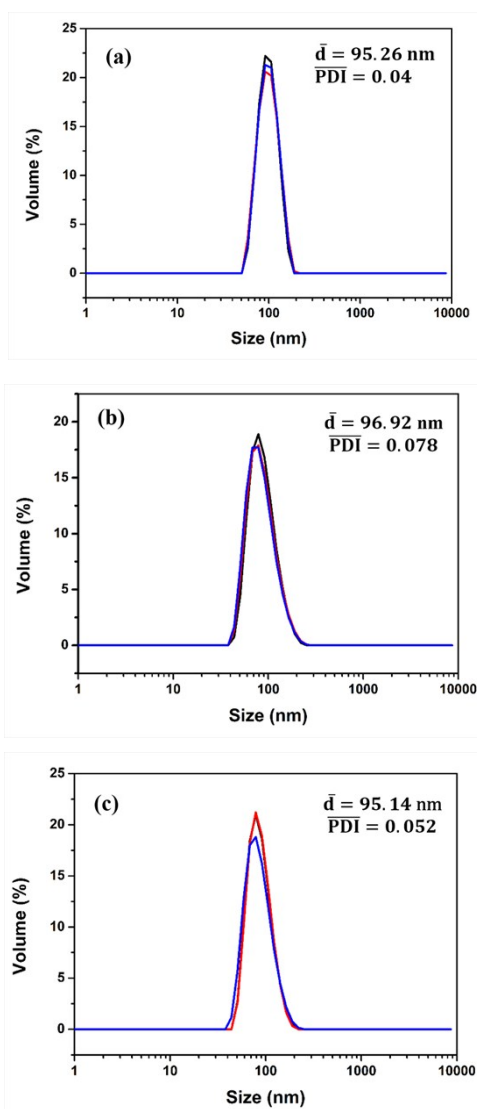


Fig. S1 The average hydrodynamic diameter distribution of T-SWTICH from three different samples (a), (b) and (c) made by parallel preparations.

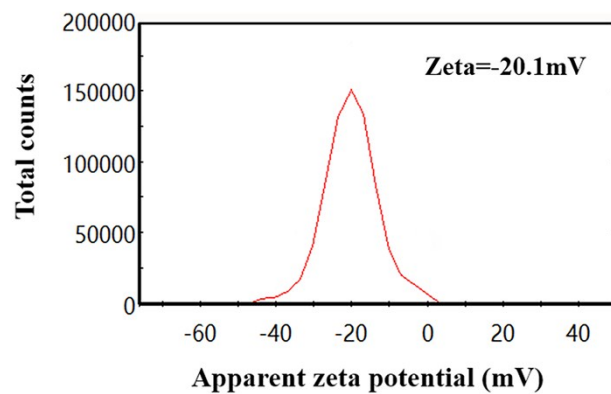


Fig. S2 The apparent zeta potential of T-SWITCH in the DI water.

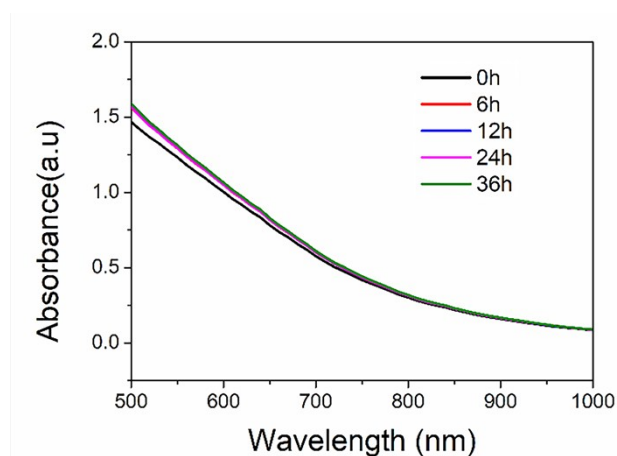


Fig. S3 The NIR absorbance of T-SWITCH at different time point (0.25mg/mL).

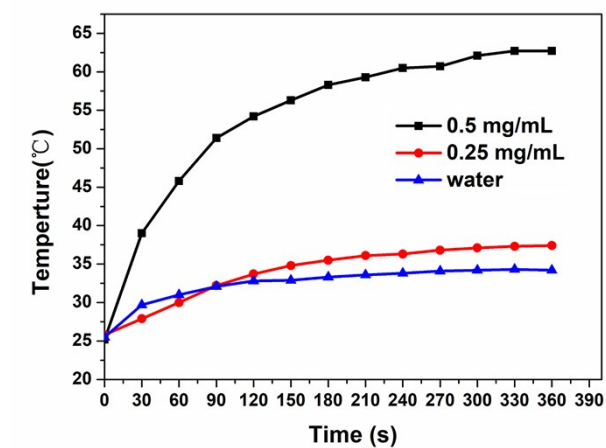


Fig. S4 Photothermal heating curves of T-SWITCH under laser irradiation (808nm, 1 W/cm<sup>2</sup>).

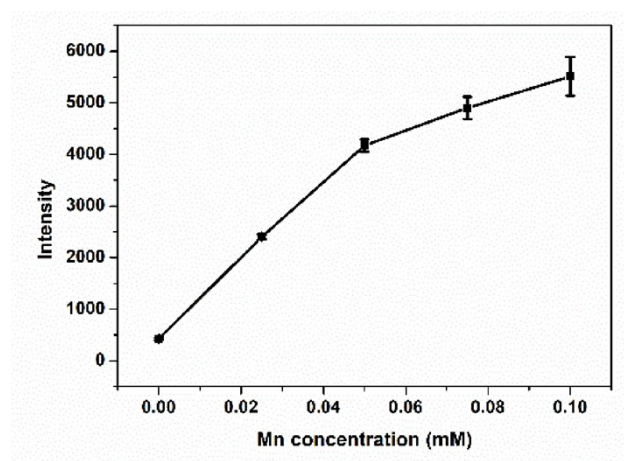


Fig. S5 The dose-activity relationship of *in vitro* MRI.

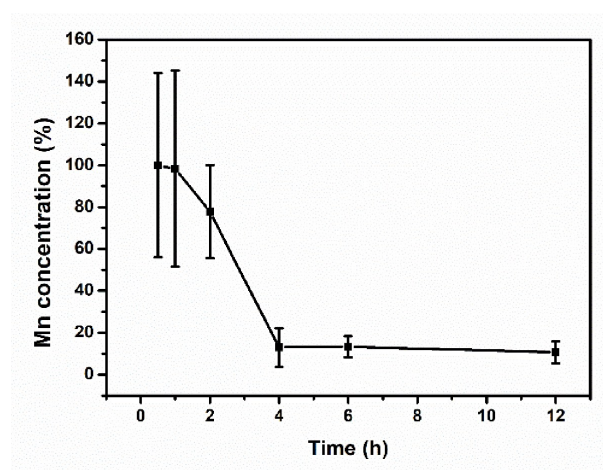


Fig. S6 The blood circulation of T-SWITCH in mice (0.04 mmol/kg Mn, 200  $\mu$ L). Error bars were based on the standard deviations of three parallel samples.

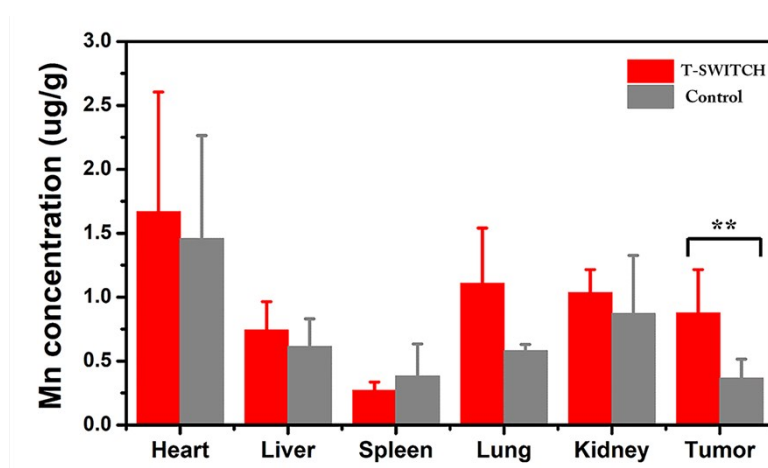


Fig. S7 The biodistribution of T-SWITCH in mice on 10 days after single injection (0.04 mmol/kg Mn, 200  $\mu$ L). Error bars were based on the standard deviations of three parallel samples.



Fig. S8 The representative photographs of four groups of Balb/c mice bearing 4T1 tumors after the corresponding treatments.

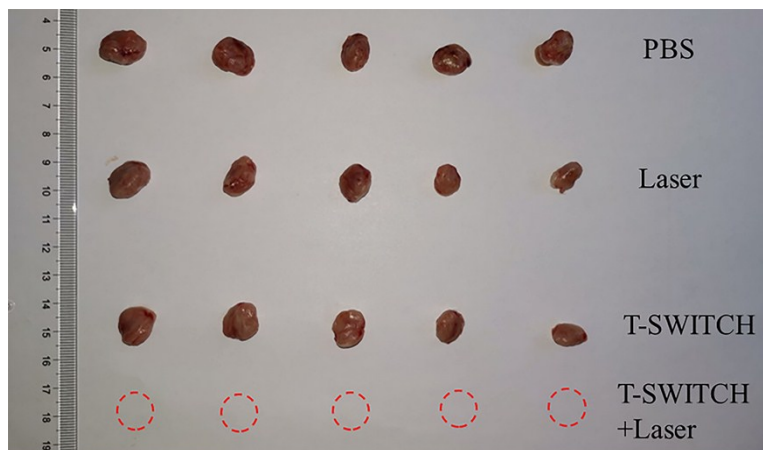


Fig. S9 The tumor anatomy photos of four groups of Balb/c mice bearing 4T1 tumors after the corresponding treatments.