Supporting Information

Poly(tannic acid) nanocoating based surface modification for construction of multifunctional composite ceria nanozymes to enhance cell proliferation and antioxidative viability of preosteoblasts

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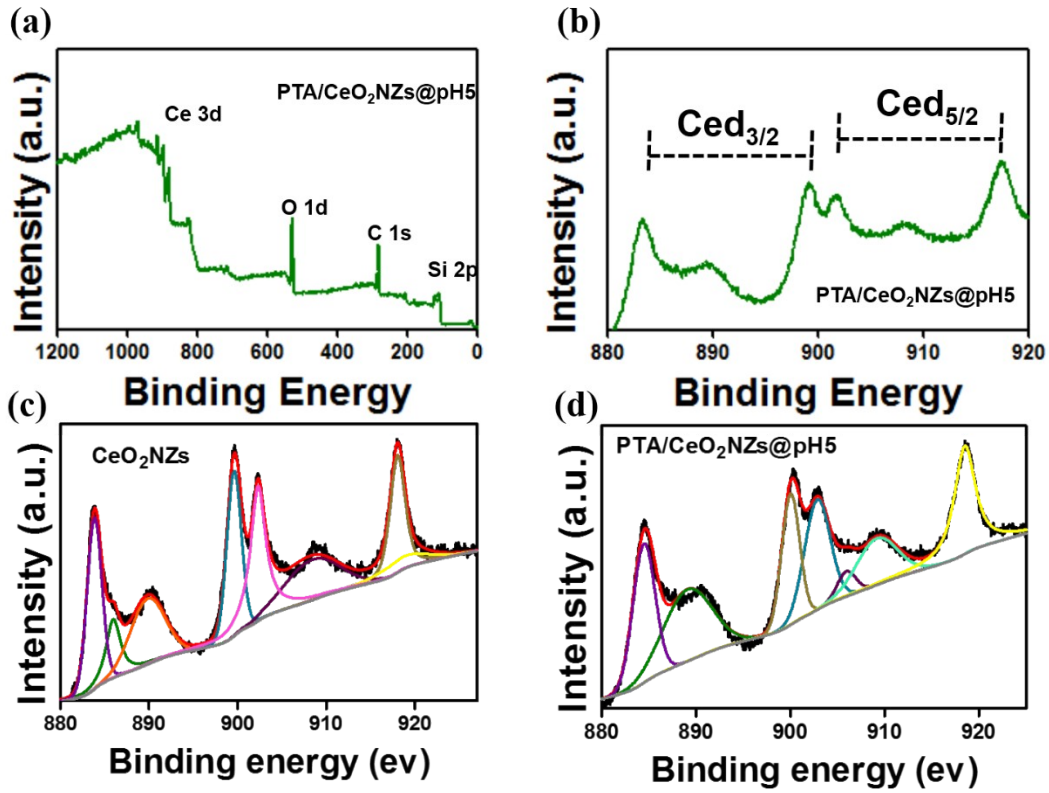

Fig. S1. (a) and (b) XPS survey spectrum of PTA/CeO_2NZs@pH5. (c) XPS peak fitting of CeO_2NZs. (d) XPS peak fitting of PTA/CeO_2NZs@pH5.

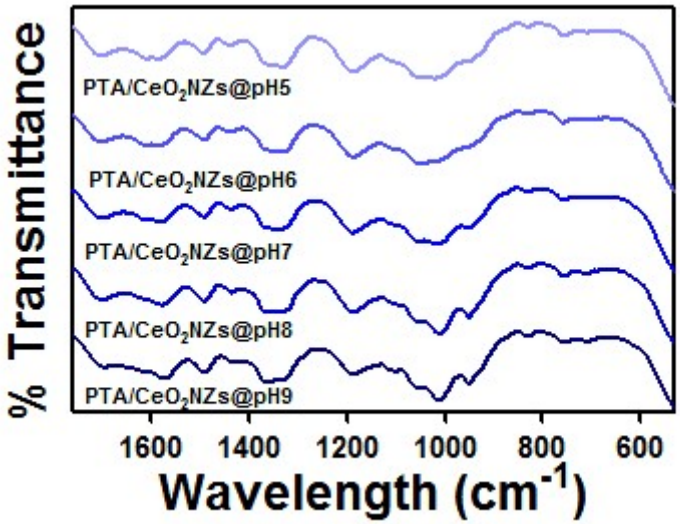

Fig. S2. FTIR-ATR spectra of PTA/CeO_2NZs@pH=5 to 9.

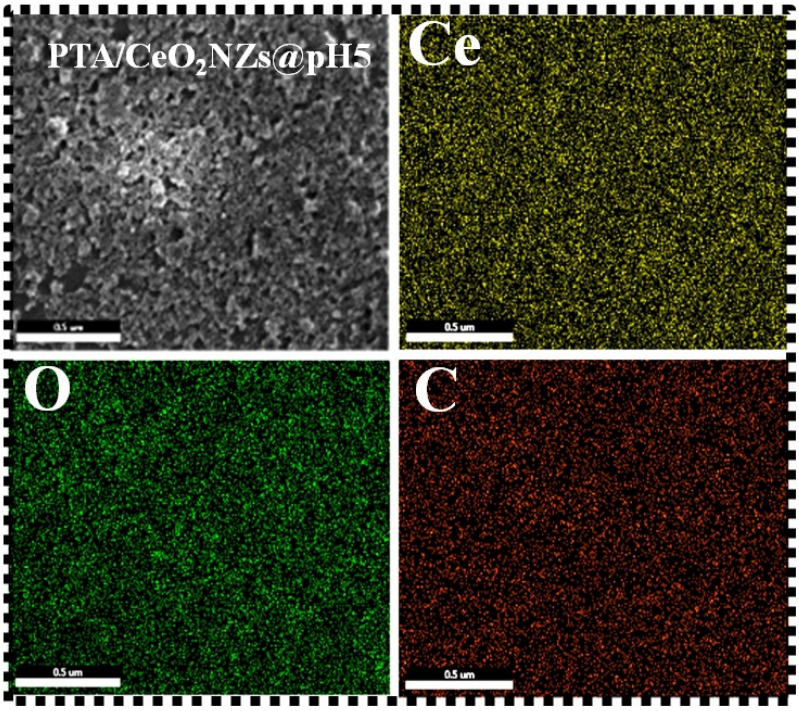

Fig. S3. EDS Analysis with SEM for PTA/CeO_2NZs@pH5.

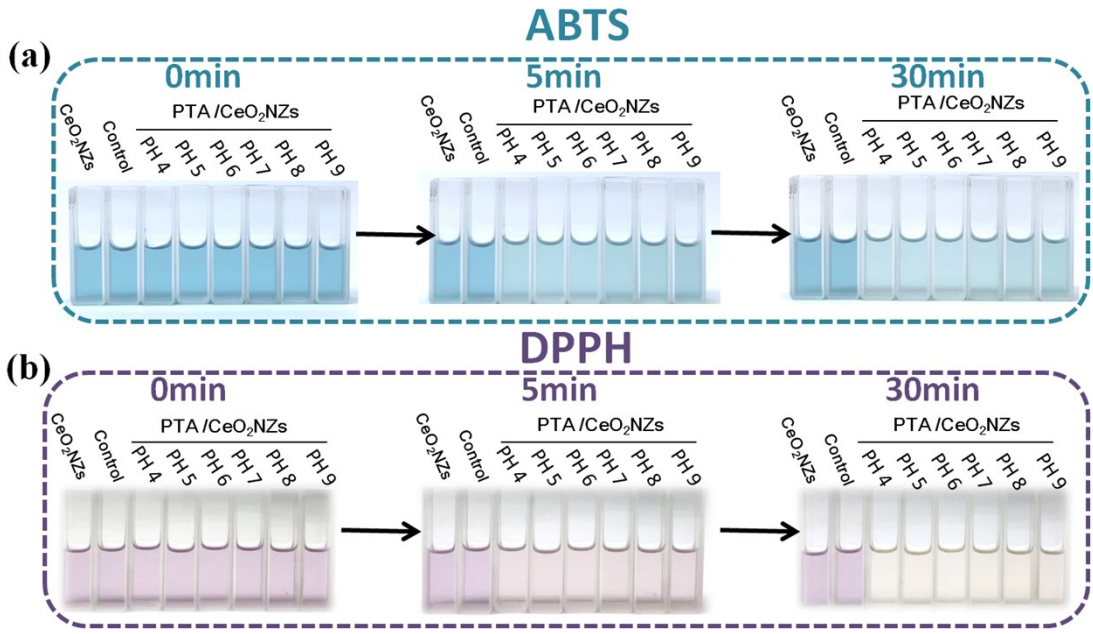

Fig. S4. Photographs of radical scavenging test of (a) DPPH and (b) ABTS at 0 min, 5min, 30min.

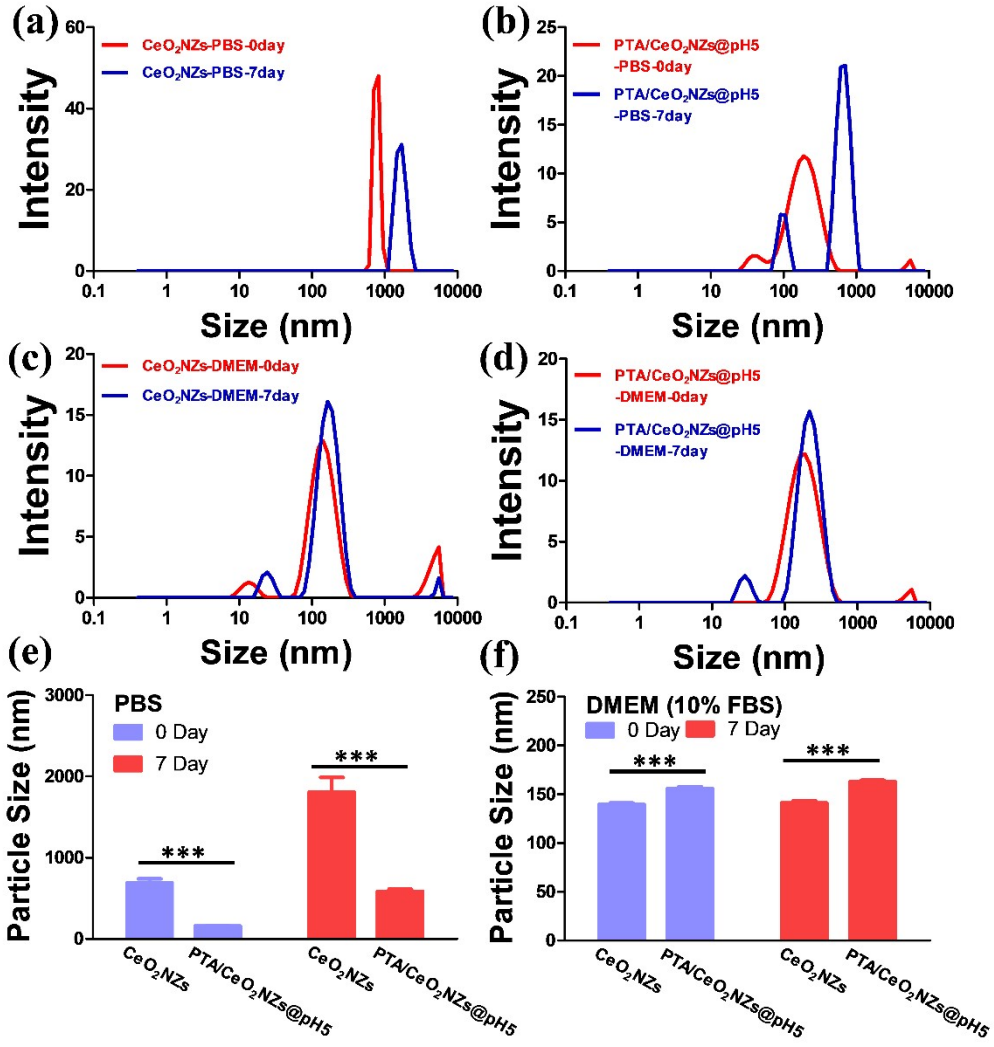

Fig. S5. Stability of CeO_2NZs and PTA/CeO_2NZs@pH5. The size distribution of CeO_2NZs in (a) PBS and (c) DMEM solutions (10% FBS) for 1 week. The size distribution of PTA/CeO_2NZs@pH5 in (b) PBS and (d) DMEM solutions (10% FBS) for 1 week. (e) the particle sizes of CeO_2NZs and PTA/CeO_2NZs@pH5 in PBS solution (0 day and 7 days). (f) the particle sizes of CeO_2NZs and PTA/CeO_2NZs@pH5 in DMEM solution (0 day and 7 days).

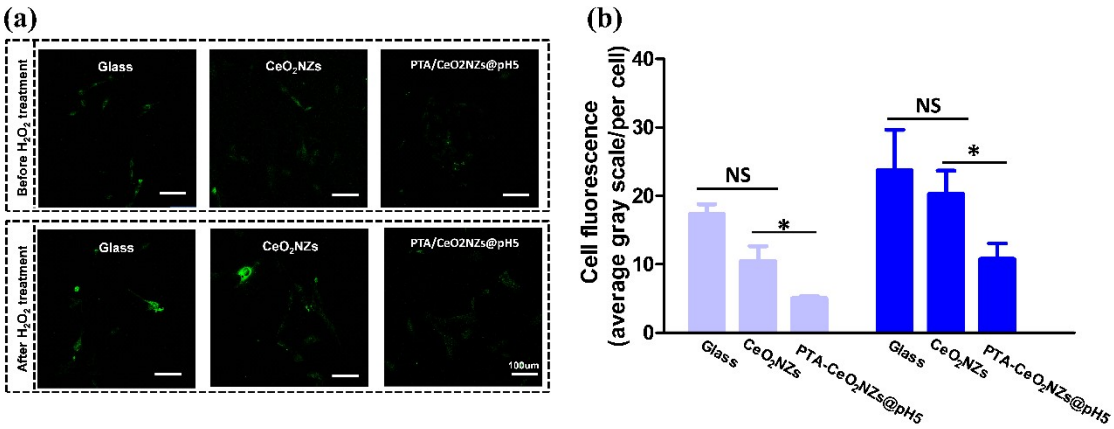

Fig. S6. (a) Fluorescence microscopy images of ROS detector inside CeO_2NZs and PTA/CeO_2NZs@pH=5 treated Mc3t3-E1 cells before and after 200 μM H_2O_2 treatment for 4 h. (b) Cell fluorescence: mean gray scale per cell.