

Supporting information

For

**Highly Hemocompatible Erythrocyte Membrane-coated Ultrasmall Selenium
Nanosystem for Simultaneous Cancer Radiosensitization and Precise
Antiangiogenesis**

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Results

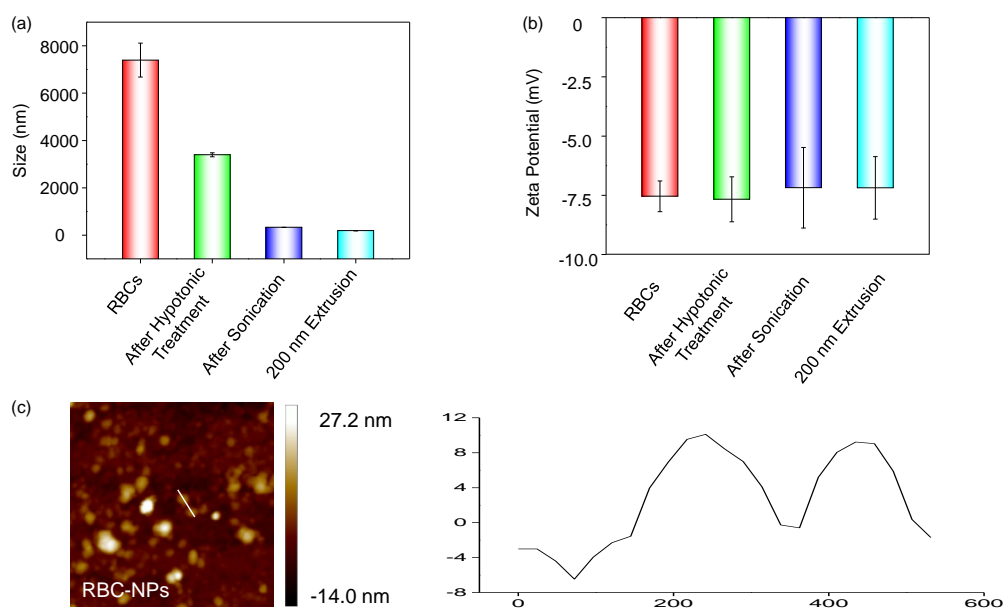


Figure S1. The average (a) hydrodynamic diameters and (b) zeta potentials of the RBCs, after hypotonic treatment, sonication for 10 min, extrusion through 200-nm polycarbonate porous membranes. (c) The AFM images and height of RBC-NPs. Each value represents means \pm SD (n=3).

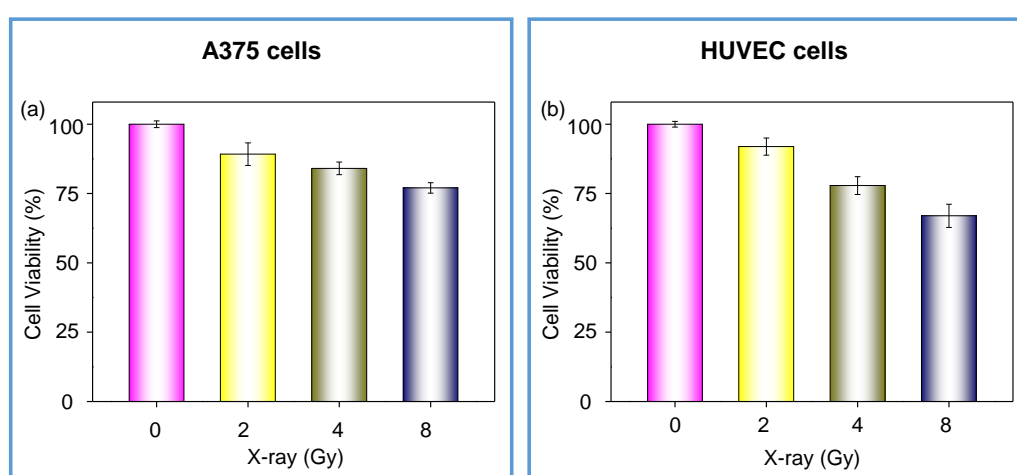


Figure S2. Cell viability of (a) A375 cells and (b) HUVEC cells treated with X-ray.

Each value represents means \pm SD (n=3).

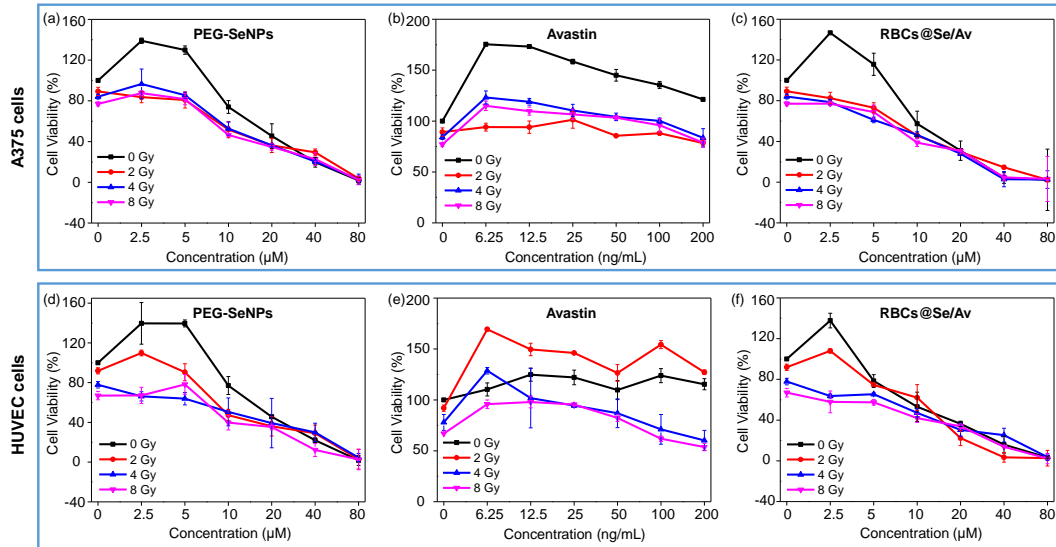


Figure S3. Cell viability of A375 cells treated with (a) PEG-SeNPs, (b) Avastin and (c) RBCs@Se/Av; Cell viability of HUVEC cells treated with (d) PEG-SeNPs, (e) Avastin and (f) RBCs@Se/Av. Each value represents means \pm SD (n=3).

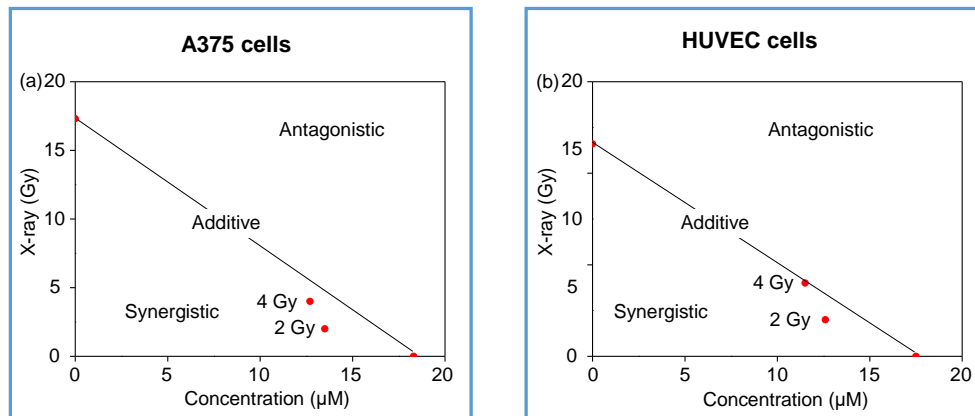


Figure S4. PEG-SeNPs synergistically enhances the anticancer efficacy of X-ray. Isobologram analysis of the synergistic antiproliferative effect co-treated with X-ray and PEG-SeNPs to (a) A375 and (b) HUVEC cells. The data points in the isobologram correspond to the growth inhibition ratio at 50% in the combined treatment PEG-SeNPs.

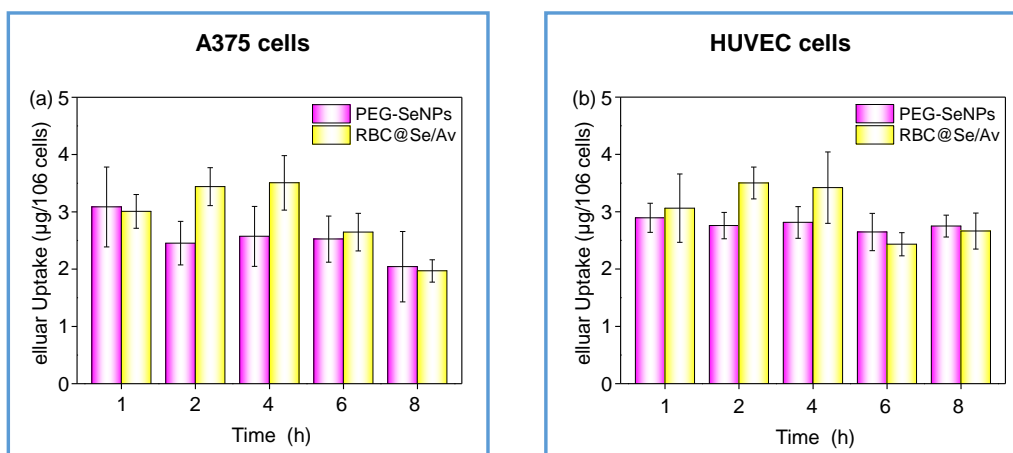


Figure S5. Quantitative analysis of cellular uptake of PEG-SeNPs and RBCs@Se/Av in (a) A375 cells and (b) HUVEC cells at different time by determining the Se concentration. Each value represents means \pm SD (n=3).

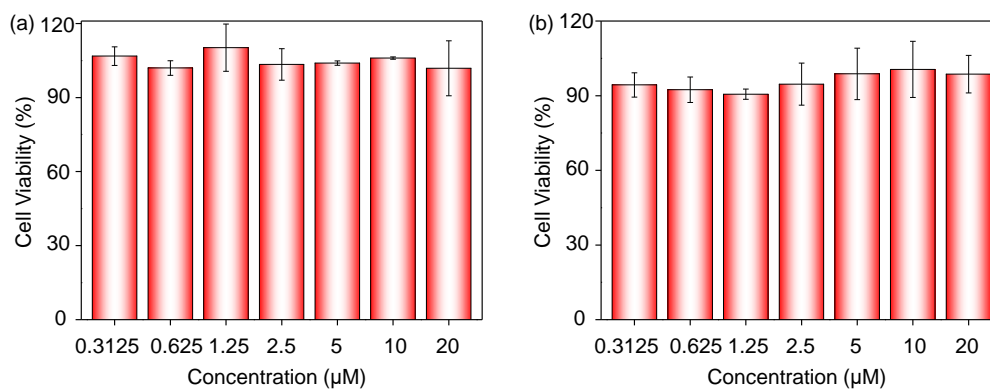


Figure S6. Cell viability of HUVEC cells (a) 2.0×10^5 /mL and (b) 8.0×10^4 /mL treated with RBCs@Se/Av.

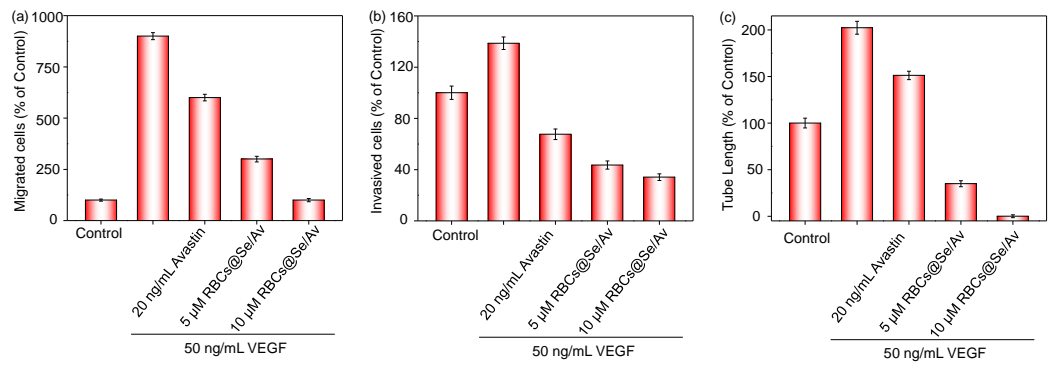


Figure S7. RBCs@Se/Av inhibits VEGF-induced angiogenesis. Quantitative analysis of the (a) migrated cells; (b) invaded cells and (c) tube length by manual counting. Each value represents means \pm SD (n=3).

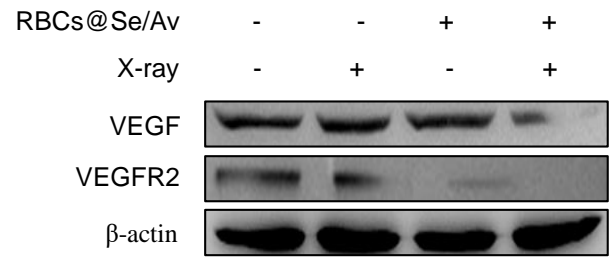


Figure S8. Antiangiogenesis signaling pathways induced by RBCs@Se/Av. Western blot analysis for the expression of VEGF and VEGFR2 on HUVEC cells treated with RBCs@Se/Av and X-ray for 72 h. β -Actin was used as loading control.

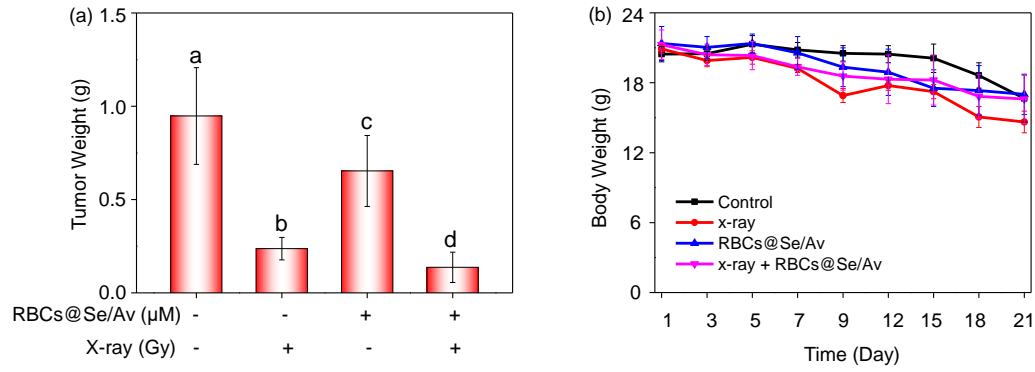


Figure S9. *In vivo* radiosensitization and antiangiogenesis effects of RBCs@Se/Av in A375-bearing mice. (a) Tumor weight; (b) Body weight change of tumor-bearing mice in time. Each value represents means \pm SD ($n = 3$). Bars with different characters are statistically different at $P < 0.05$ level.

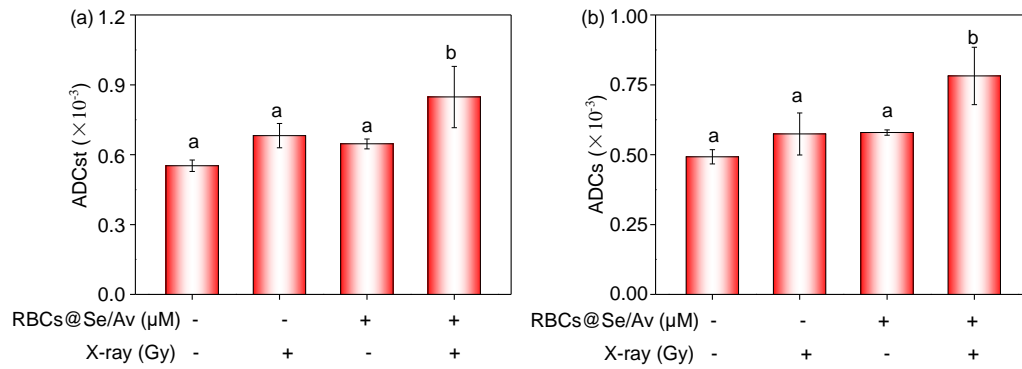


Figure S10. T2-weighted MR images of A375 tumor-bearing mice after treatment for 21 d. The quantitative analysis of (a) the ADCst and (b) ADCs. Each value represents means \pm SD ($n = 3$). Bars with different characters are statistically different at $P < 0.05$ level.