

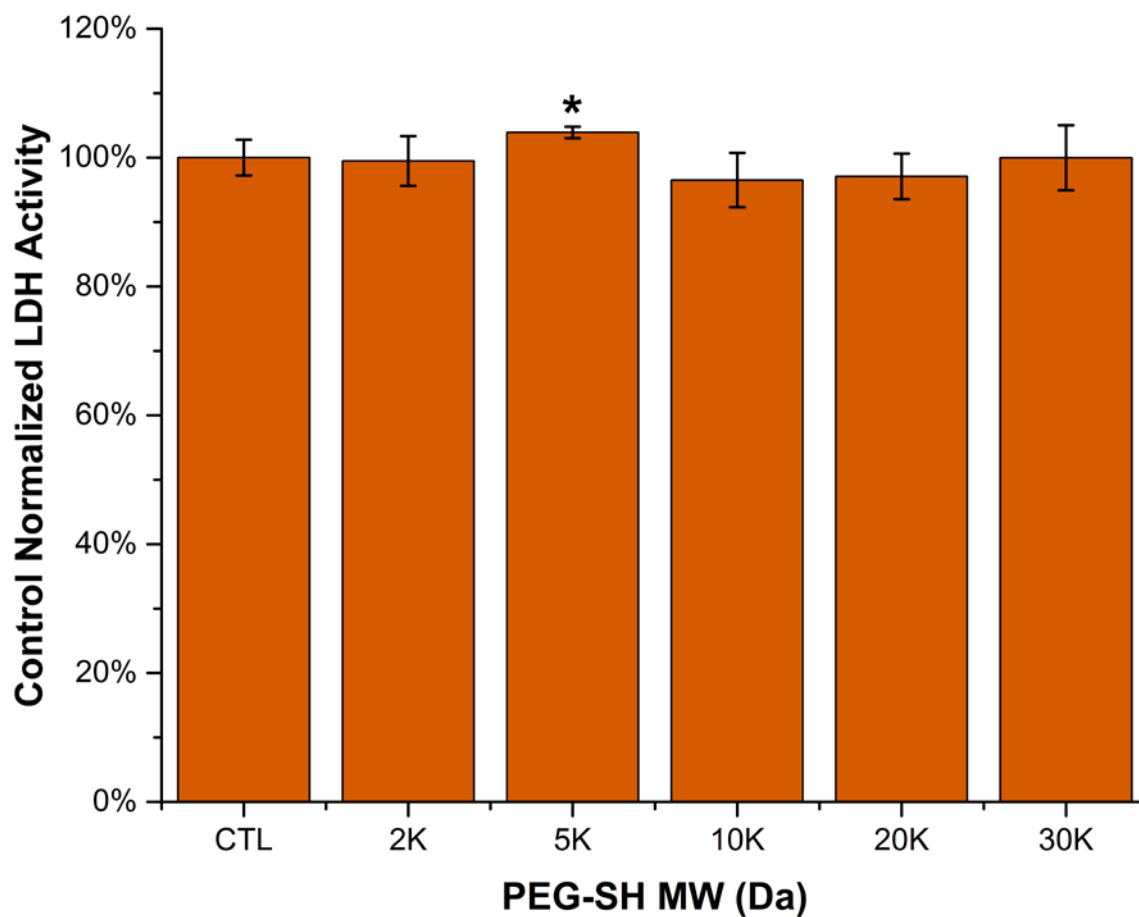
## Supporting Information

### Gold Nanotriangles: Scale Up and X-Ray Radiosensitization Effects in Mice

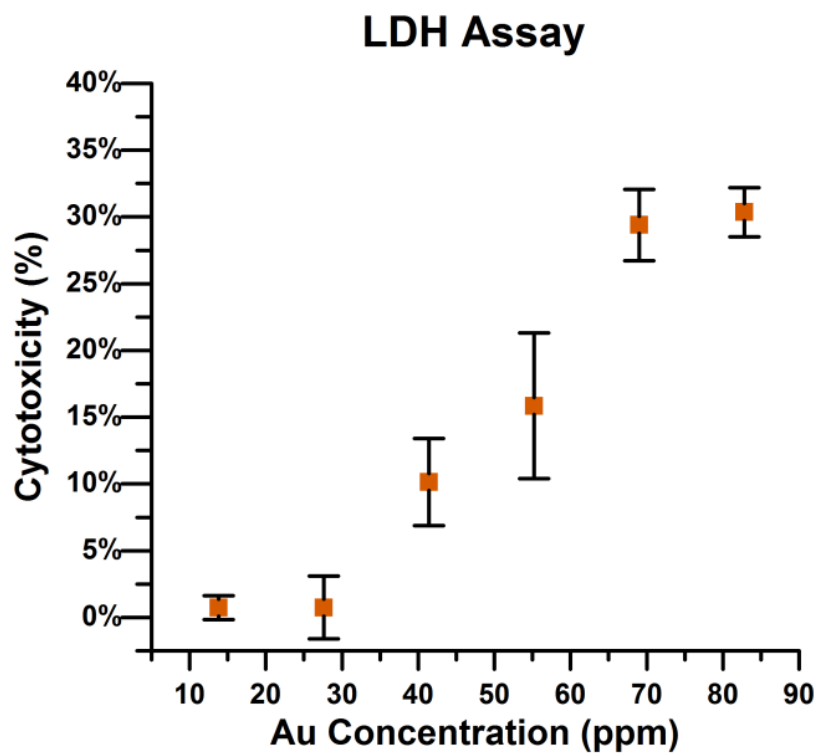
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In vivo biochemical and hematological abbreviations and units.

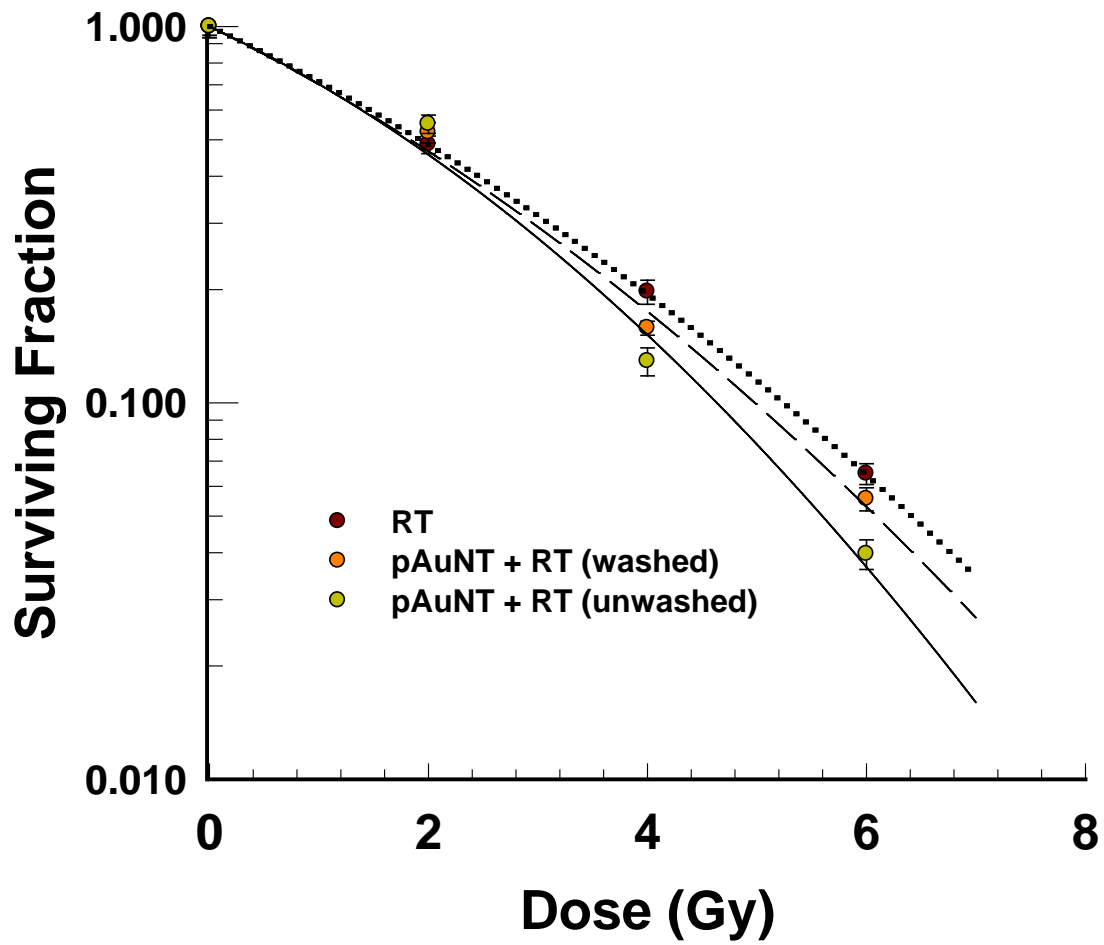
Albumin (ALB, g dL<sup>-1</sup>), alkaline phosphatase (ALP, U L<sup>-1</sup>), alanine aminotransferase (ALT, U L<sup>-1</sup>), aspartate aminotransferase (AST, U L<sup>-1</sup>), basophils (Basos, 10<sup>3</sup> μL<sup>-1</sup>), blood urea nitrogen (BUN, mg dL<sup>-1</sup>), calcium (CA, mg dL<sup>-1</sup>), cetyltrimethylammonium bromide (CTAB), cetyltrimethylammonium chloride (CTAC), chloride (Cl, mEq L<sup>-1</sup>), creatinine (Cr, mg dL<sup>-1</sup>), eosinophils (Eos, 10<sup>3</sup> μL<sup>-1</sup>), enhanced permeability and retention effect (EPR), gold nanotriangle (AuNT), globulin (GLOB, g dL<sup>-1</sup>), hematocrit (HCt, %), hemoglobin (HGb, g dL<sup>-1</sup>), inductively-coupled plasma mass spectrometry (ICP-MS), potassium (K, mEq L<sup>-1</sup>), lactate dehydrogenase (LDH, U L<sup>-1</sup>), large unstained cells (LUC, 10<sup>3</sup> μL<sup>-1</sup>), laser scanning confocal microscopy (LSCM), lymphocytes (Lymphs, 10<sup>3</sup> μL<sup>-1</sup>), mean corpuscular hemoglobin (MCH, pg), mean corpuscular hemoglobin concentration (MCHC, g dL<sup>-1</sup>), mean corpuscular volume (MCV, fL), monocytes (Monos, 10<sup>3</sup> μL<sup>-1</sup>), methoxypoly(ethylene glycol) thiol (mPEG-SH), mean platelet volume (MPV, fL), sodium (Na, mEq L<sup>-1</sup>), PEGylated gold nanotriangle (pAuNT), phosphorous (PHOS, mg dL<sup>-1</sup>), poly(ethylene glycol) (PEG), platelet count (PLT, 10<sup>3</sup> μL<sup>-1</sup>), red cell distribution width (RCW, %), red blood cell (RBC, 10<sup>6</sup> μL<sup>-1</sup>), random blood sugar (RBS, glucose, mg dL<sup>-1</sup>), segmented neutrophils (Segs, 10<sup>3</sup> μL<sup>-1</sup>), total bilirubin (TBIL, mg dL<sup>-1</sup>), total protein (TP, g dL<sup>-1</sup>), white blood cell (WBC, 10<sup>3</sup> μL<sup>-1</sup>).



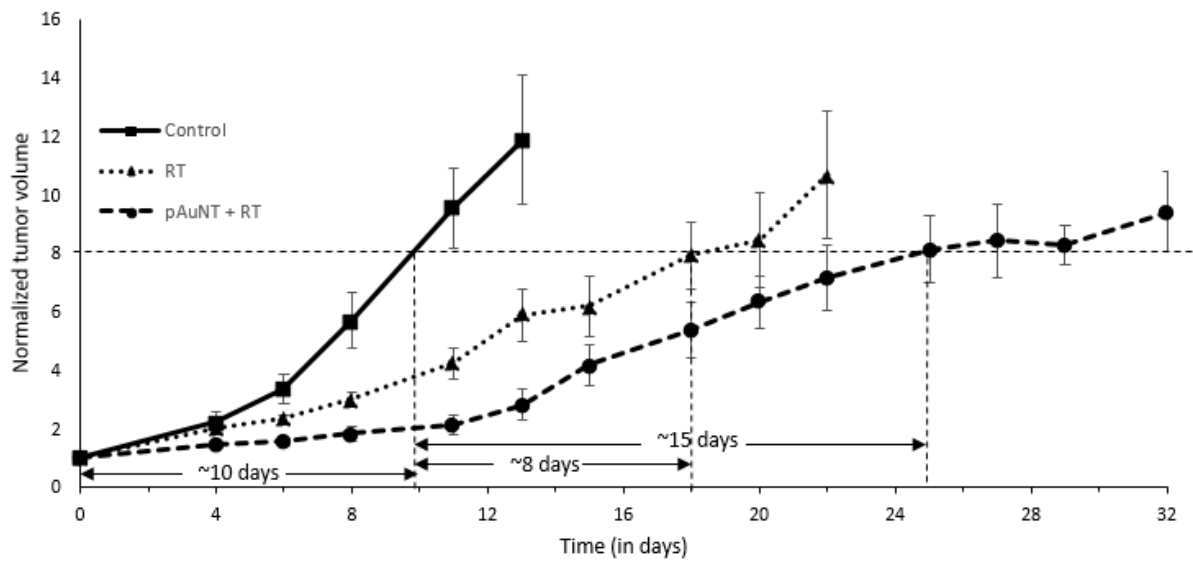
**Figure S1.** LDH Activity of MCF-7 cells exposed to 13.8 ppm AuNTs with different molecular weights of PEG-SH. Significance level of  $p < 0.05$  (denoted with asterisk.)



**Figure S2.** Concentration dependent cytotoxicity of 5K-MW PEG-SH AuNTs. Percent Cytotoxicity of 5K-MW mPEGylated AuNTs at increasing concentrations of AuNTs. A direct correlation between cytotoxicity and proliferation and nanotriangle concentration can be observed.



**Figure S3.** *In vitro* radiation enhancement effect of pAuNTs. The surviving fraction of U87MG cells is smaller when exposed to RT with the addition of pAuNTs, with a maximum reduction appearing between 3-4 Gy.



**Figure S4.** pAuNT *in vivo* tumor growth delay with prolonged follow-up. Normalized tumor volumes were compared throughout the time course of the experiment. The mice were sacrificed when their implanted tumors reached the IACUC-mandated maximum volume. Mice that received pAuNTs+RT lived longer with smaller tumors.

**Table S1.** Biochemical (A) and hematological (B) toxicity panel results shown with averages and  $1\sigma$ -deviations for mice receiving no treatment (control) and mice receiving a 2.7 mg/kg dose of AuNTs after 18 days. Abbreviations are detailed in the Supplemental Information.

<b>Biochemical Panels</b>		
Analyte	Control (n=2)	pAuNT (n=3)
ALB (g dL <sup>-1</sup> )	2.3 ± 0.01	2.3 ± 0.06
ALP (U L <sup>-1</sup> )	17.5 ± 3.5	15.0 ± 1.00
ALT (U L <sup>-1</sup> )	28.0 ± 11.30	11.3 ± 7.5
AST (U L <sup>-1</sup> )	104 ± 6.4	167 ± 56.1
BUN (mg dL <sup>-1</sup> )	36.7 ± 8.70	25.9 ± 2.4
CA (mg dL <sup>-1</sup> )	11.4 ± 0.07	11.3 ± 0.1
Cl (mEq L <sup>-1</sup> )	114.2 ± 4.24	111.2 ± 0.4
Cr (mg dL <sup>-1</sup> )	0.2 ± 0	0.2 ± 0.01
GLOB (10 <sup>3</sup> μL <sup>-1</sup> )	2.95 ± 0.077	2.8 ± 0.13
K (g dL <sup>-1</sup> )	7.5 ± 0.7	7.2 ± 0.13
LDH (U L <sup>-1</sup> )	590 ± 89.0	717 ± 76.0
Na (mEq L <sup>-1</sup> )	158.5 ± 3.39	155.5 ± 0.8
PHOS (mg dL <sup>-1</sup> )	10.1 ± 0.14	10 ± 0.7
RBS (glucose, mg dL <sup>-1</sup> )	81 ± 35.35	74 ± 16.5
TBIL (mg dL <sup>-1</sup> )	0.2 ± 0	0.2 ± 0
TP (g dL <sup>-1</sup> )	5.3 ± 0.06	5.1 ± 0.1
<b>Hematological Panels</b>		
Basos (10 <sup>3</sup> uL <sup>-1</sup> )	1.1 ± 0.90	0.955 ± 0.05
Segs (10 <sup>3</sup> uL <sup>-1</sup> )	138 ± 68.0	167 ± 30.8
Hct (%)	35 ± 0.7	33 ± 2.5
HGb (g dL <sup>-1</sup> )	10.3 ± 0.50	9.8 ± 0.70
LUC (10 <sup>3</sup> uL <sup>-1</sup> )	3.24 ± 0.7	2.5 ± 0.24
Lymphs (10 <sup>3</sup> uL <sup>-1</sup> )	7.4 ± 0.75	9.1 ± 3.44
MCH (pg)	15.5 ± 0.40	15.25 ± 0.070
MCHC (g dL <sup>-1</sup> )	29.2 ± 0.70	29.9 ± 0.210
MCV (fL)	53.2 ± 2.76	51.2 ± 0.070
Monos (10 <sup>3</sup> uL <sup>-1</sup> )	1.04 ± 0.300	0.93 ± 0.092
Eos (10 <sup>3</sup> uL <sup>-1</sup> )	0.63 ± 0.410	0.99 ± 0.050
PLT (10 <sup>3</sup> uL <sup>-1</sup> )	1279 ± 212	1040 ± 182
RBC (10 <sup>6</sup> uL <sup>-1</sup> )	6.6 ± 0.49	6.4 ± 0.48
RDW (%)	17.55 ± 1.63	16.75 ± 0.071
MPV (fL)	6.8 ± 0.14	6.75 ± 0.071
WBC (10 <sup>3</sup> uL <sup>-1</sup> )	151 ± 69.6	181 ± 27.5