Supporting Information

Nuclear Targeted Silver Nanospheres Perturb the Cancer Cell Cycle Differently from those of Nanogold

Lauren A. Austin[†], Bin Kang^{†, ‡}, Chun-Wan Yen[†], Mostafa A. El-Sayed ^{†,*}

[†]Laser Dynamics Laboratory, School of Chemistry and Biochemistry, Georgia Institute of Technology, Atlanta, GA 30332-0400

[‡]Permanent address: College of Material Science and Technology, Nanjing University of Aeronautics and Astronautics, Nanjing 210016, P.R. China

*Corresponding Author Email: <u>melsayed@gatech.edu</u>

	Cancer (HSC-3)	Healthy (HaCat)
Control	600 407 200 0 0 200 40 0 0 200 40 0 0 0 0 0 0 0	
0.1 nM NLS/RGD		
0.4 nM NLS/RGD	100 50 50 40 - - - - - - - - - - - - -	
0.1 nM RGD		
0.4 nM RGD	200- 150- 100- 80- 2 200- 100- 80- 2 200- 100- 80- 80- 80- 80- 80- 80- 80- 80- 80-	230 - 130 - 0
20 nM AgNO₃	20C	300- 200- 100- 0 200 400 <u>FEAD 900 1000</u>

Figure S1. DNA histograms of cancer and healthy cells treated with conjugated AgNPs. Nuclear targeting (NLS/RGD) AgNPs caused the increase in the sub G1 population of cancer cells (red box) and G2 accumulation in both cancer and healthy cells.

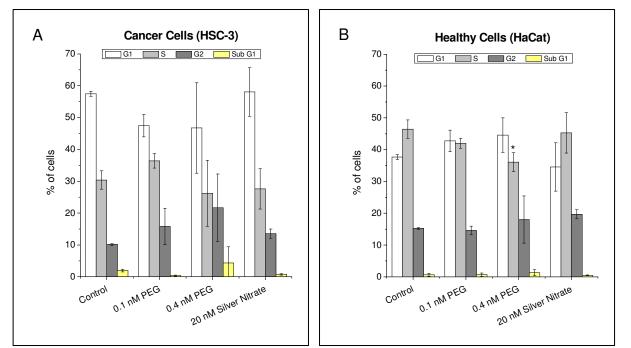
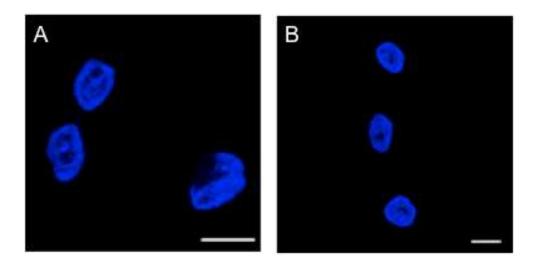


Figure S2. Cell cycle analysis of cancer (A) and healthy (B) cells treated with 0.1 nM PEG-AgNPs and 0.4 nM PEG-AgNPs. There was no significant alteration in the cell cycle in both cell models when compared to their controls.



Figure

S3.

Confocal images of healthy (HaCat) cells after treatment with NLS/RGD-AgNPs. DNA double strand breaks, detected by the green fluorescence foci, were not seen in either untreated (A) or 0.4 nM NLS/RGD-AgNPs treated (B) healthy cells. Cells were incubated with nuclear targeting AgNPs for 24 hours. Scale bar: 10 µm.