Electronic Supplementary Material (ESI) for Nanoscale.

Supporting Information

Targeted silver nanoparticles for ratiometric cell phenotyping

Anne-Mari A. Willmore,[†] Lorena Simón-Gracia,[†] Kadri Toome,[†] Päärn Paiste,[‡] Venkata Ramana Kotamraju,[¶] Tarmo Mölder,[†] Kazuki N. Sugahara,[¶,‖] Erkki Ruoslahti,[¶,§] Gary B. Braun,[*,¶] and Tambet Teesalu[*,¶,†,§]

[*]To whom correspondence should be addressed
[†]Lab of Cancer Biology, University of Tartu
[‡]Department of Geology, University of Tartu
[¶]Sanford-Burnham-Prebys Medical Discovery Institute
[§]University of California, Santa Barbara, Santa Barbara, CA, USA
[‖]Department of Surgery, Columbia University College of Physicians and Surgeons, New York, NY, USA

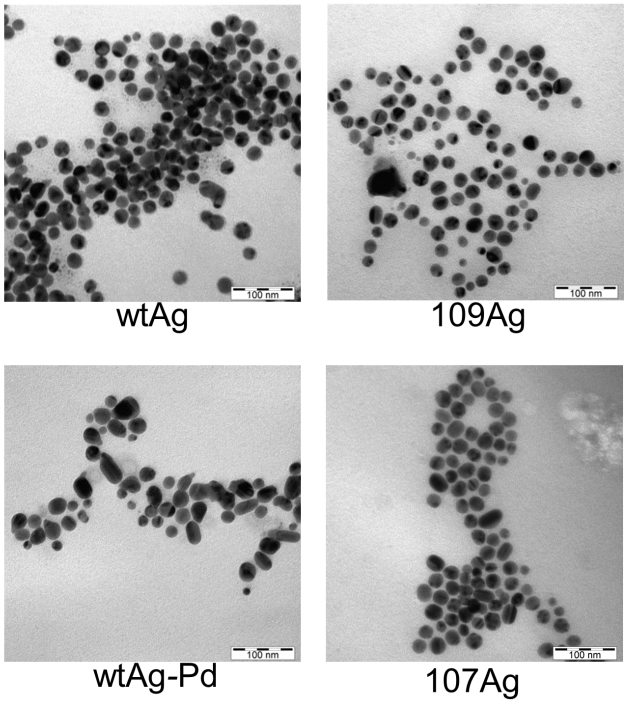

Figure 1: TEM images of AgNPs at 210k magnification. Samples were imaged on copper grids coated with holey formvar carbon film (Pacific Grid Tech). Similar AgNPs were produced despite core type with an average size of 24 ± 5 nm, although Pd-containing AgNPs were slightly more irregular in shape than non-doped AgNPs. Scale bar: 100 nm.

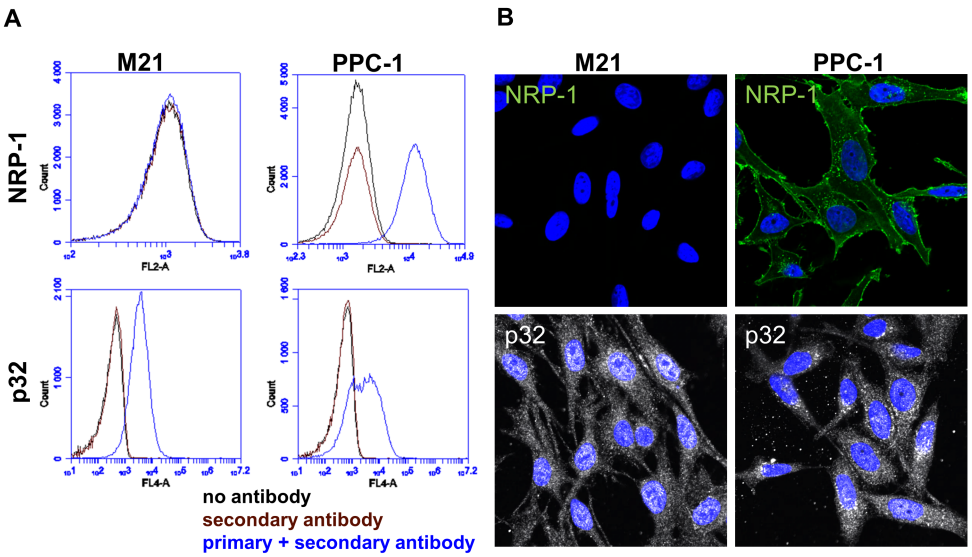

Figure 2: Expression of NRP-1 and p32 on the surface of cultured PPC-1 and M21 cells. M21 cells do not express NRP-1 as seen by flow cytometry (A) and confocal microscopy (B), but do express p32. PPC-1 cells express both NRP-1 and p32. For flow cytometry, cells were not permeabilized prior to antibody incubation thus only membrane staining was revealed; whereas microscopy shows both membrane and internal staining.

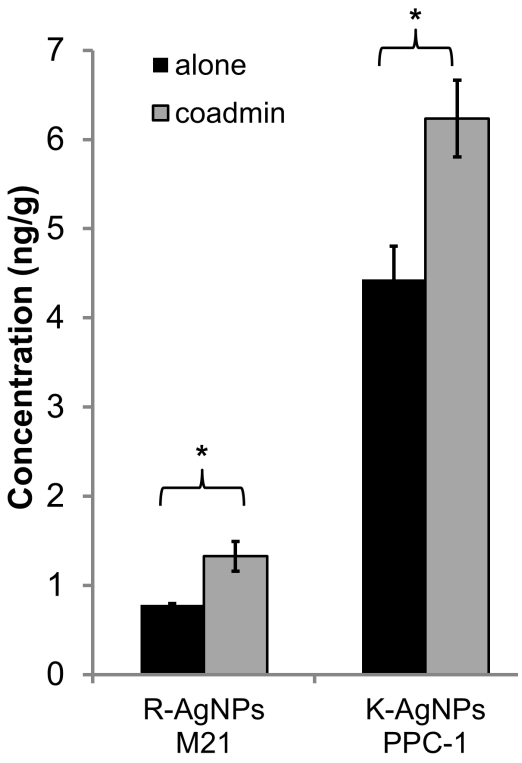

Figure 3: Effect of AgNP combination on nanoparticle internalization. (A) M21 and PPC-1 cells were incubated with the three AgNP multiplexing cocktail (coadmin) or with just R-AgNPs or K-AgNPs alone (alone). Data are mean values ± SD (n=3); * p <0.05 by Student's t-test.

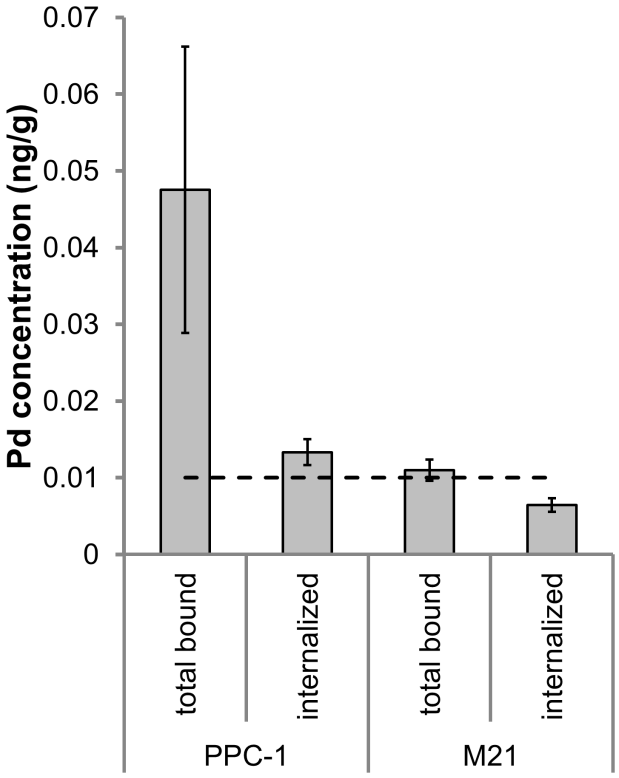

Figure 4: Uptake of biotin control particles. PPC-1 and M21 cells were incubated with B-wtAg-Pd nanoparticles. The cells were either etched to quantify only internalized particles or not etched to quantify total bound particles. The internalized Pd content in both cell lines is close to the limit of detection (10 pg/g) indicated by the dotted line. Data are mean values ± SD (n=3).