

Single-cell analysis reveals that chronic silver nanoparticle exposure induces cell division defects in human epithelial cells

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Supplemental Figures

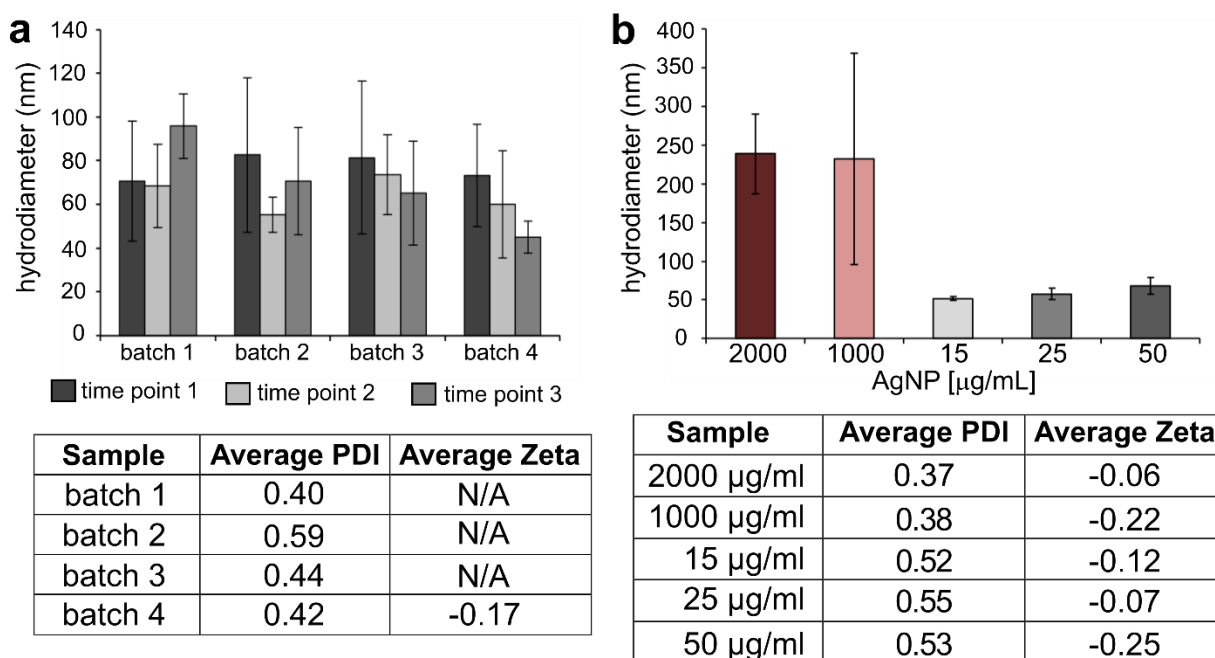


Figure S1. Dynamics light scattering measurements of AgNPs suspended in water (a) or tissue culture medium (b).

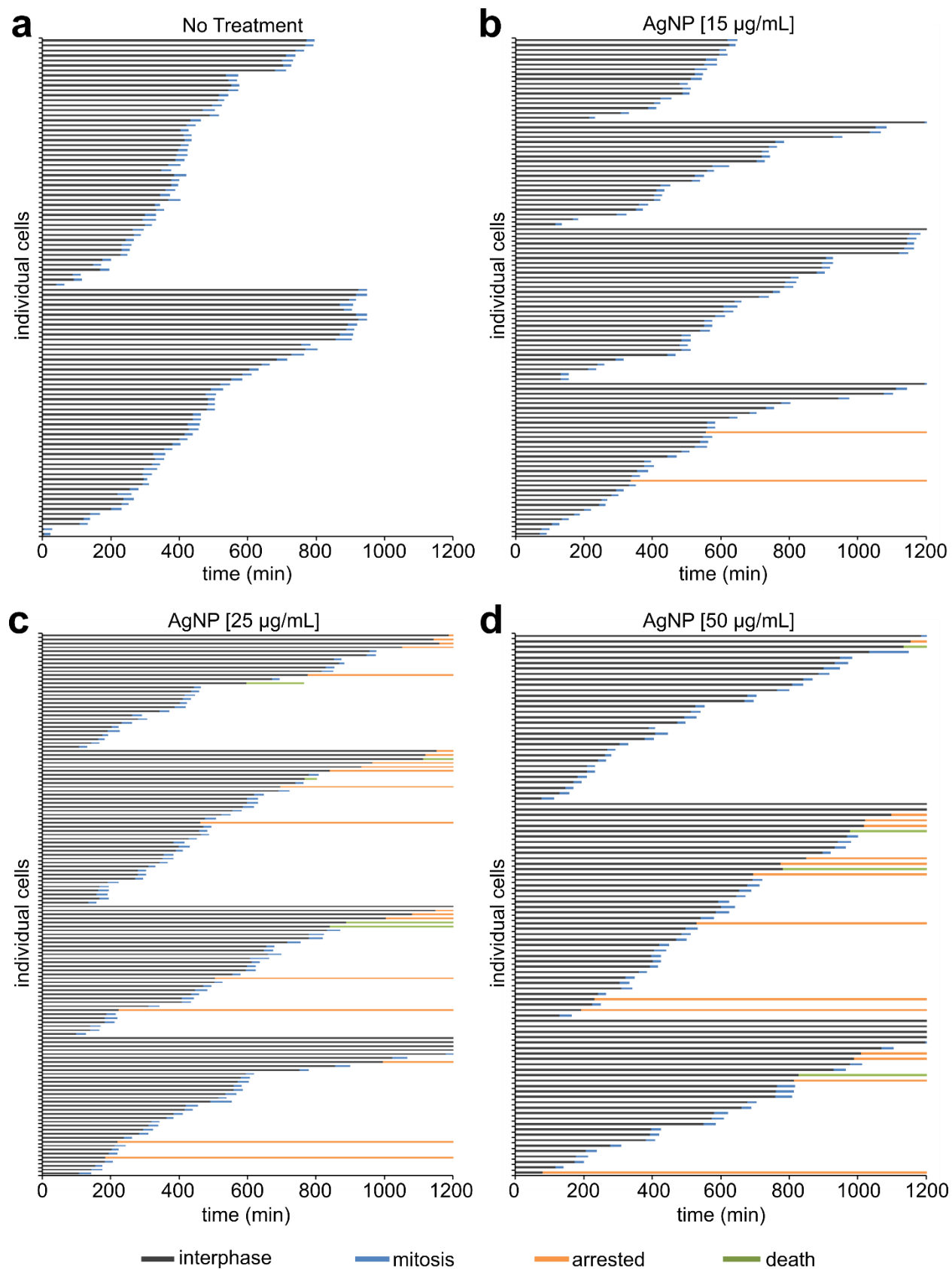


Figure S2. Single-cell phenotypes from live cell imaging. All cells were imaged over a 20-hour period using phase contrast microscopy. Each bar represents an individual cell and the black portion of the bar represents the time each individual cell spent in interphase. The blue portion represents the time spent in mitosis by cells that progressed through a normal mitotic cell division. The orange portion represents the time cells spent in an arrested state after rounding up. The green portion refers to cells that displayed signs of cell death and represents the time elapsed between rounding up and cell death. Each graph reports subsets of cells from either a control population **(a)** or populations treated with various doses of AgNPs **(b-d)**, as indicated.

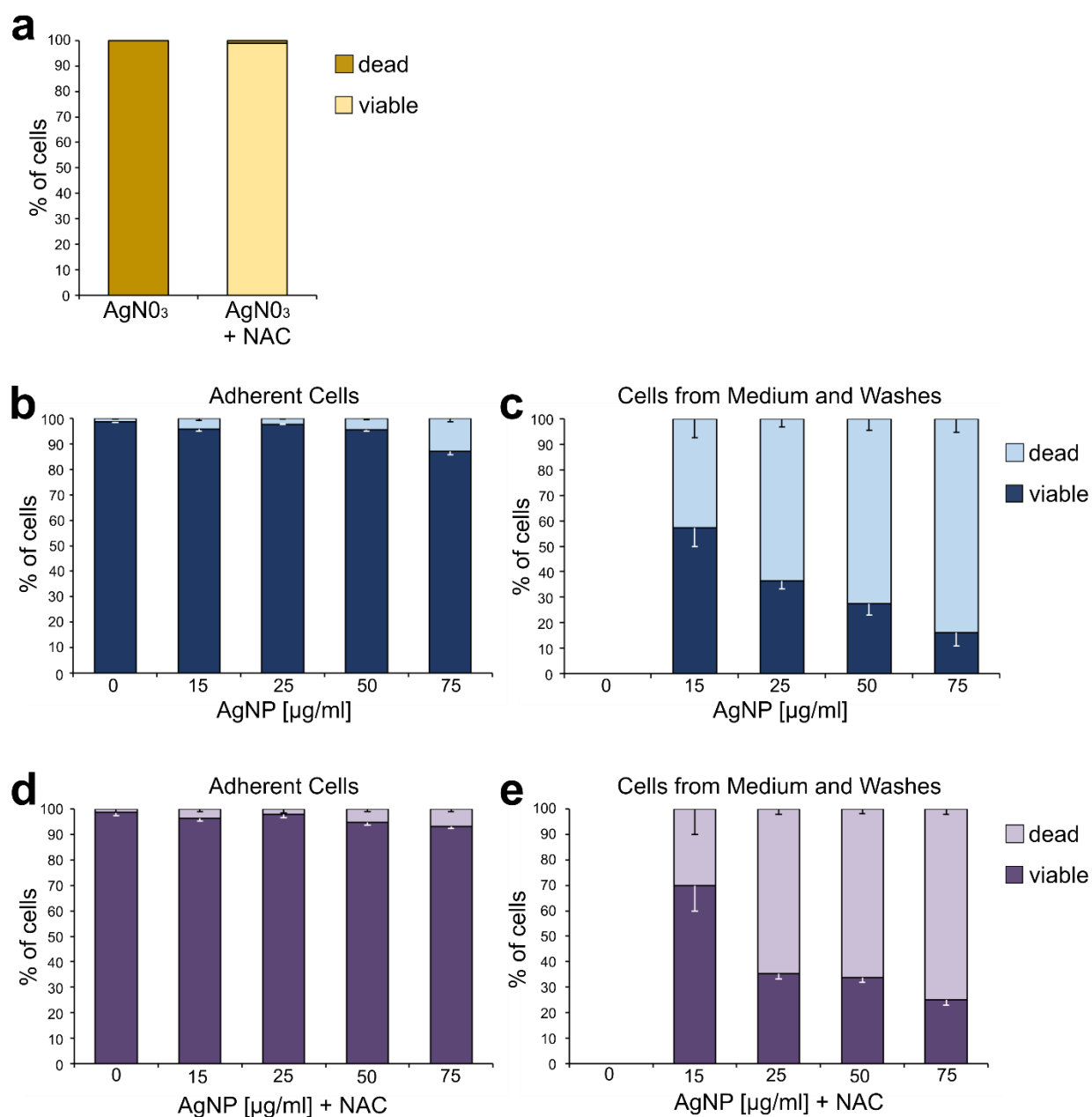


Figure S3. Cell viability assay after silver treatment. **(a)** Cells were treated with a silver ion source (50 $\mu\text{g/ml}$ AgNO_3) with or without a silver ion chelator (NAC) for 24 hours and cell viability was quantified using trypan blue staining. **(b-c)** Cells were treated with various doses of AgNPs and cell viability was assessed in adherent **(b)** and non-adherent **(c)** cells. **(d-e)** Cells were treated with various doses of AgNPs in combination with the silver ion chelator NAC for 24 hours and cell viability was assessed in adherent **(d)** and non-adherent **(e)** cells.

Video Legends

Video S1. Representative video showing untreated RPE-1 cells (corresponding to Fig. 2a, untreated).

Video S2. Representative video showing RPE-1 cells engulfing AgNPs present in the extracellular space (corresponding to Fig. 2b).

Video S3. Representative video showing a binucleate cell undergoing tripolar cell division (corresponding to Fig. 8c).