

SUPPLEMENTAL INFORMATION

Potential of Tobramycin by Silver Nanoparticles Against *Pseudomonas aeruginosa* PAO1

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Running title: Nanoparticle synergy against *Pseudomonas* biofilms

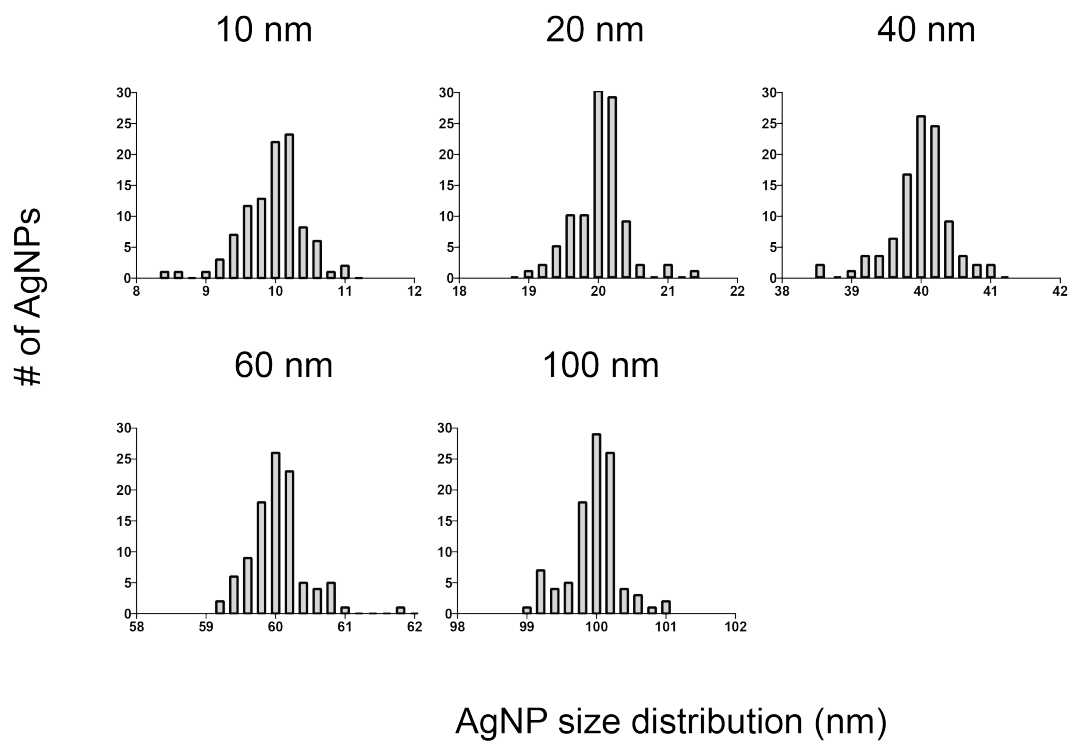


FIG S1. Size distribution of AgNPs used in this study assessed by transmission electron microscopy (TEM). Citrate-capped silver AgNPs (10, 20, 40, 60, and 100 nm) were purchased from Sigma-Aldrich and 5 μ L of each solution was pipetted directly onto carbon-coated copper 200-mesh TEM grids. Air-dried samples were viewed using an FEI Technai G2 F20 transmission electron microscope operating at 200 kV equipped with a bottom mount Gatan 4k CCD camera under standard operating conditions. For each size AgNP, 100 nanoparticles over 20 random fields of view were imaged and measured using ImageJ software (1). Standard deviations: 10-nm AgNP = \pm 0.39 nm; 20-nm AgNP = \pm 0.33 nm; 40-nm AgNP = \pm 0.29 nm; 60-nm AgNP = \pm 0.40 nm; 100-nm AgNP = \pm 0.37 nm.

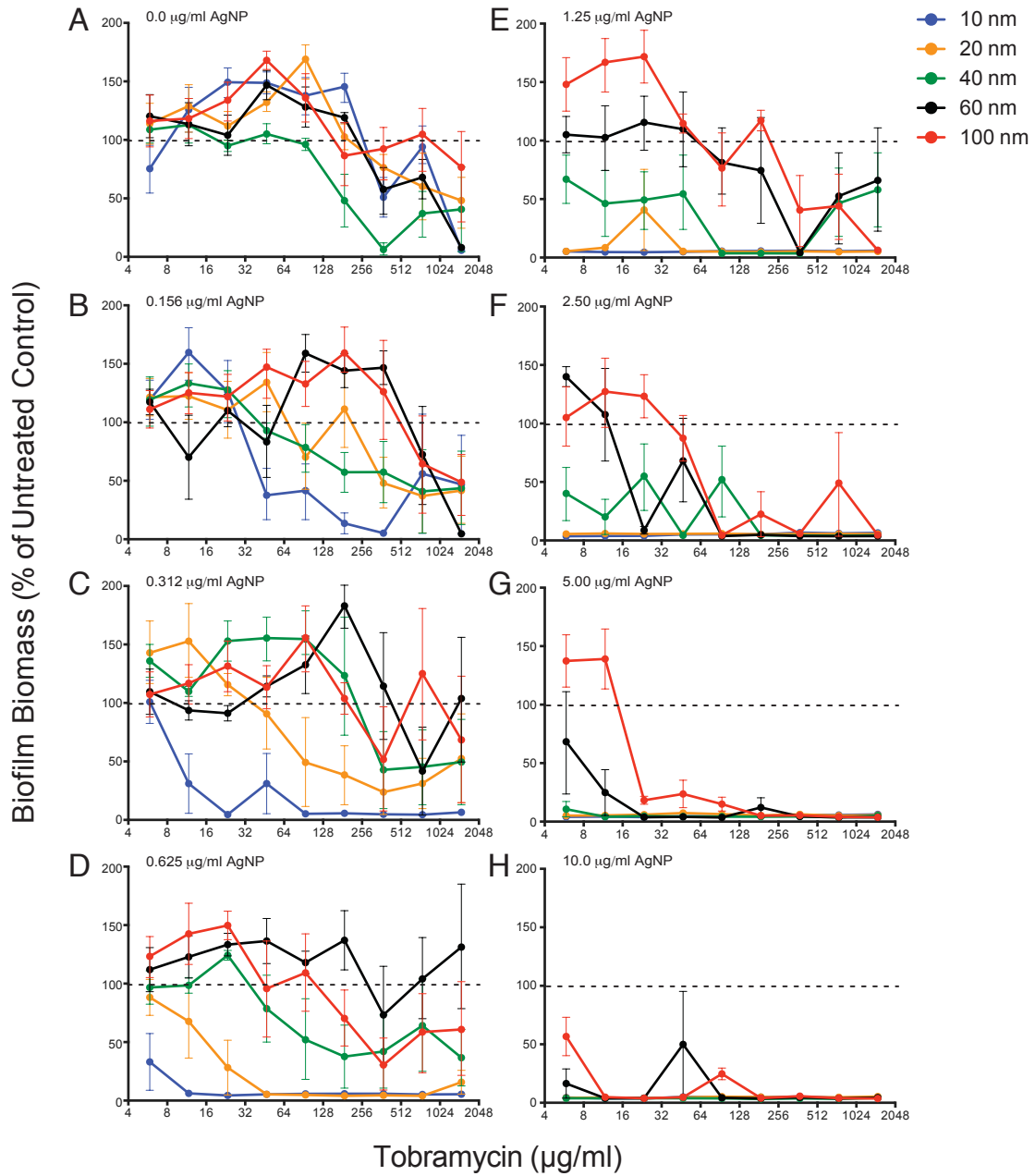


FIG 2. Effects of different AgNP-tobramycin combinations on *P. aeruginosa* PAO1 biofilm biomass in the recovery phase. Normalized values of percent recovery of biofilm biomass following challenge with different combinations of tobramycin (0.0 µg/ml to 1500 µg/ml) and AgNP sizes (10-nm, 20-nm, 40-nm, 60-nm and 100-nm) at the specific AgNP concentration (0.0 µg/ml to 10.0 µg/ml) indicated in the top left corner of each panel are shown (panel A represents replicate samples treated with tobramycin only). Biofilm biomass values for treated samples were normalized to values for untreated cells (i.e., 0.0 µg/ml AgNPs and 0.0 µg/ml tobramycin). Dashed lines, 100% recovery (i.e., levels observed for untreated cells). Mean values for a minimum of six replicates ± the standard deviations are shown.

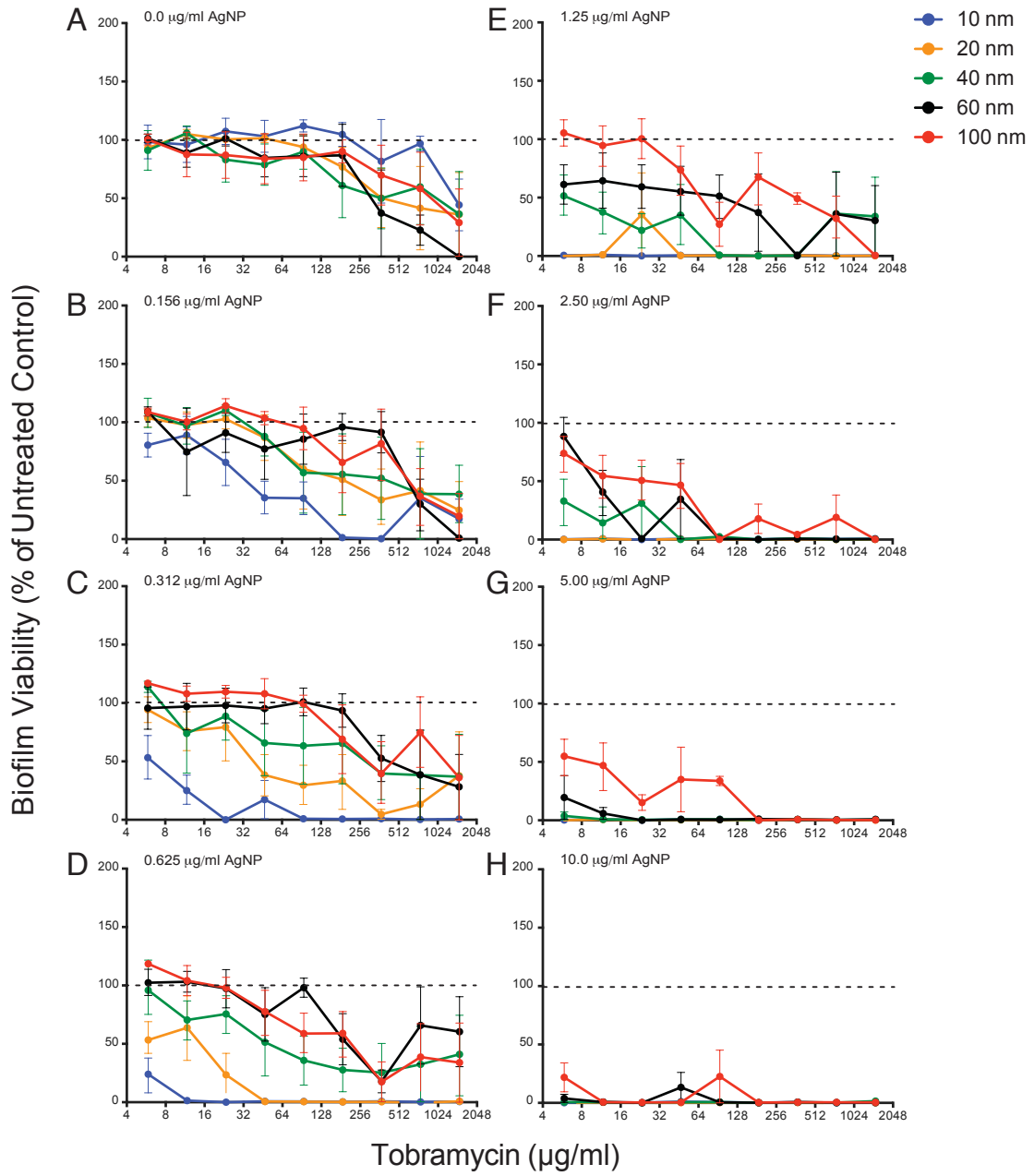


FIG 3. Effects of different AgNP-tobramycin combinations on *P. aeruginosa* PAO1 biofilm viability in the recovery phase. Normalized values of percent viability of biofilms following challenge with different combinations of tobramycin (0.0 µg/ml to 1500 µg/ml) and AgNP sizes (10-nm, 20-nm, 40-nm, 60-nm and 100-nm) at the specific AgNP concentration (0.0 µg/ml to 10.0 µg/ml) indicated in the top left corner of each panel are shown (panel A represents replicate samples treated with tobramycin only). Biofilm viability values were normalized to values for untreated control samples (i.e., 0.0 µg/ml AgNPs and 0.0 µg/ml tobramycin). Dashed lines, 100% recovery (i.e., levels observed for untreated cells). Mean values for a minimum of six replicates ± the standard deviations are shown.

REFERENCES

1. Rasband, W.S., ImageJ, U. S. National Institutes of Health, Bethesda, Maryland, USA, <https://imagej.nih.gov/ij/>, 1997-2017.