



Extended Data Figure 4 | Acoustic reporter gene expression and ultrasound imaging does not affect cell viability. **a**, Growth curves of *E. coli* containing the *arg1* or GFP expression plasmid, with or without induction using 0.4 mM IPTG. Data are from three biological replicates per sample; lines represent the mean. **b**, Representative TEM images of whole *E. coli* cells expressing *arg1* with and without exposure to acoustic collapse pulses, and *E. coli* cells expressing GFP. Images were acquired from three biologically independent samples for *arg1*, two for *arg1* with ultrasound collapse and one for GFP (more than 50 cells imaged per

sample) with similar results. **c**, Dark-field optical image of agar plate containing colonies of *E. coli* expressing *arg1* 14 h after seeding. **d**, Image of the same plate after the right half of the plate was insonated with high-pressure ultrasound. **e**, Image of the same plate 20 h after insonation. **f**, Image after the right half of the plate in **e** was insonated with high-pressure ultrasound. Zoomed in images of representative colonies shown below each plate image. Scale bars, 500 nm. Experiment was repeated three times with similar results.