Supplementary Information For:

Generation of a *Gluconobacter oxydans* knockout collection for improved extraction of rare earth elements

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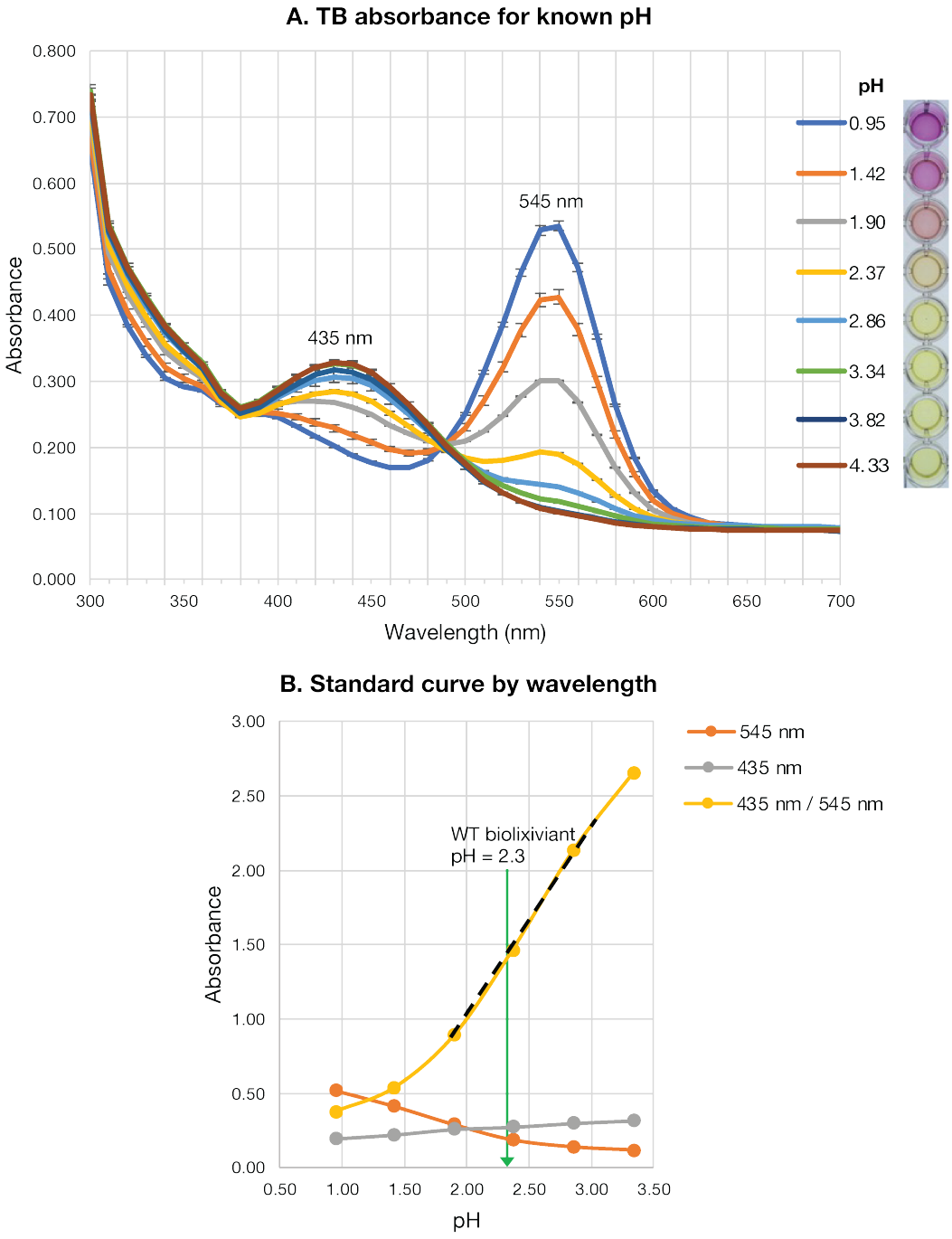
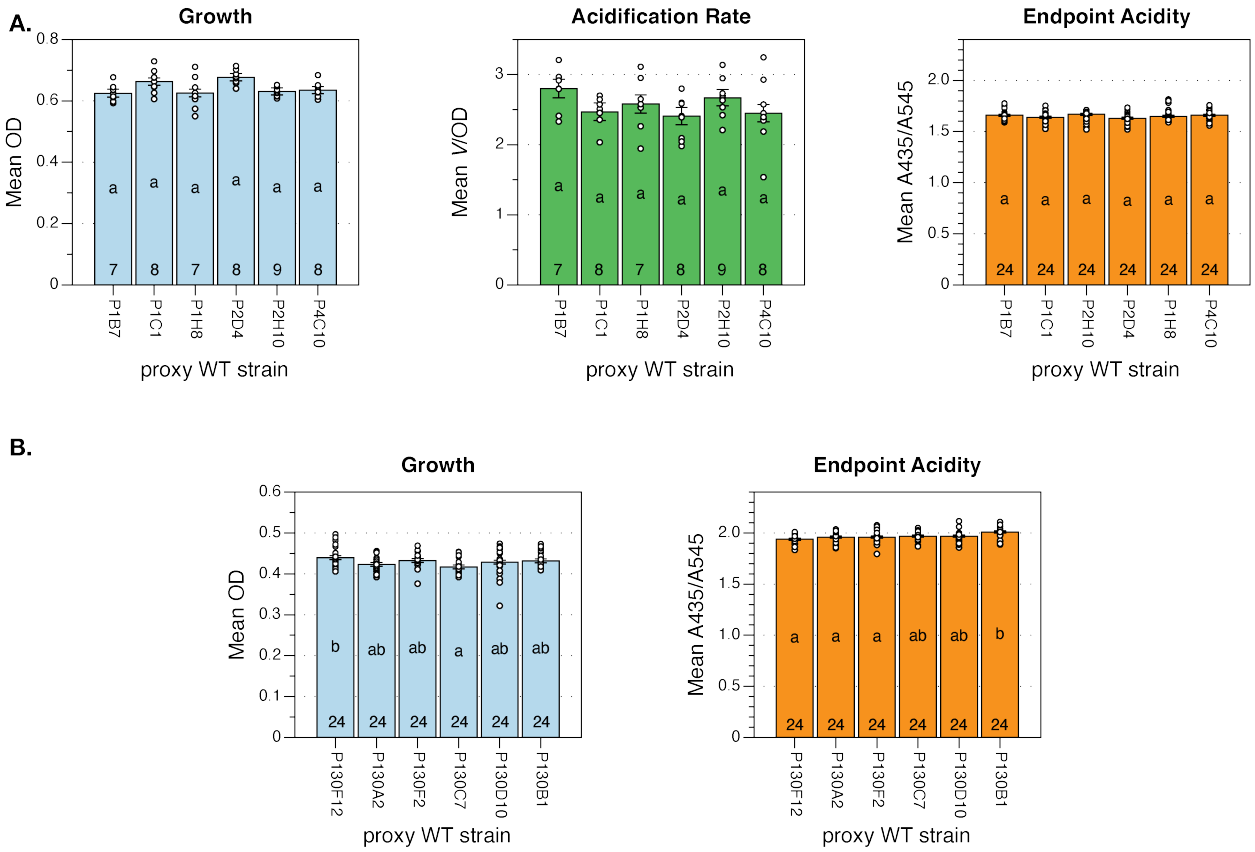


Supplementary Figure 1. Calibration data for Thymol Blue assay for media acidification. (**A**) Thymol Blue (TB) absorbance spectra for solutions of known pH. Error bars are standard deviation and n is 3 biological replicates. (**B**) Calibration curve to connect TB absorbance and pH. Black dashed line shows linearity of 435 nm / 545 nm between just below pH of 2.0 to a pH of 3.0. Green arrow indicates pH of the previously reported wild type *G. oxydans*-produced biolixiviant.



Supplementary Figure 2. Comparison of individual proxy WT disruption strains type A (**A**) and type B (**B**) growth (blue bars), initial acidification rate (green bars), and endpoint acidity (orange bars). Multiple comparisons were made for each set of proxy WT strains using the emmeans package in R with a Tukey *p*-value adjustment. Letters denote significance groups. Individual data points are shown as black circles. Error bars are standard error. The number of biological replicates for each strain measured for a particular phenotype is shown at the bottom of the corresponding bar.