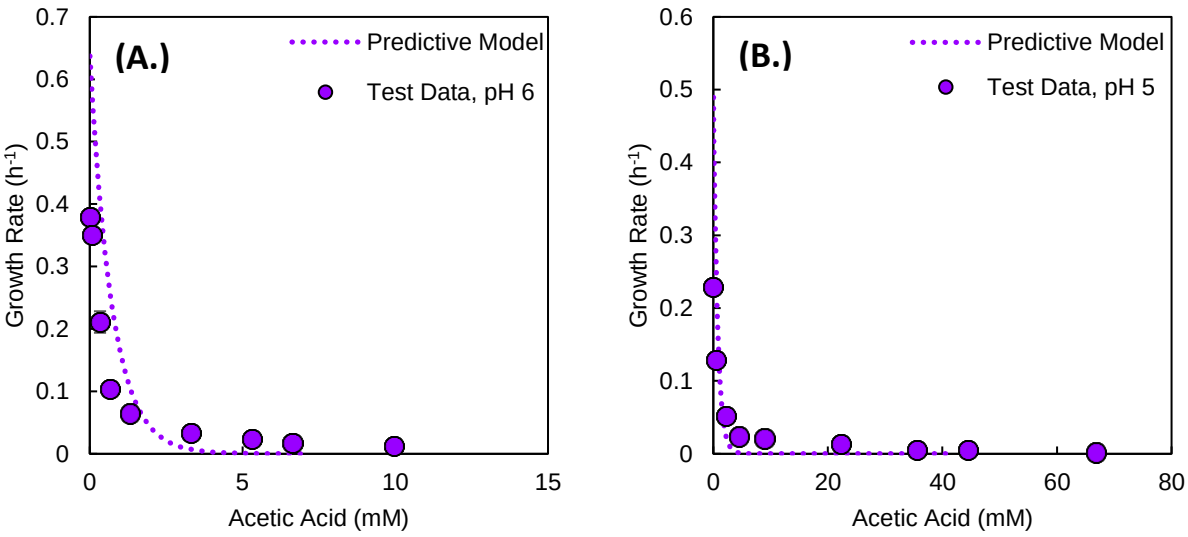

Combined inhibition model terms predict culture growth rates under compound stresses. Inhibition terms for acetic acid as a product and pH were combined into a single equation and tested against datasets with varying acetic acid concentrations at pH 6 **(A)** and pH 5 **(B)**. The dotted lines represent the model equation $\mu = \mu_C \left(\frac{G}{K_G+G}\right)\left(1-\frac{H}{H^*}\right)e^{-KA}$, where μ is growth rate (h^{-1}), G is concentration of glucose (= 56 mM), H is concentration of H^+ (M), A is concentration of protonated acetic acid (mM), and parameters μ_C, K_G, K, and H^* are as noted in Table 1 and Figure 1 of the main text. Experiments used 2X M9 medium composition (twice normal concentration of all components), but the effect of osmotic pressure was deemed negligible and was not added to the model.