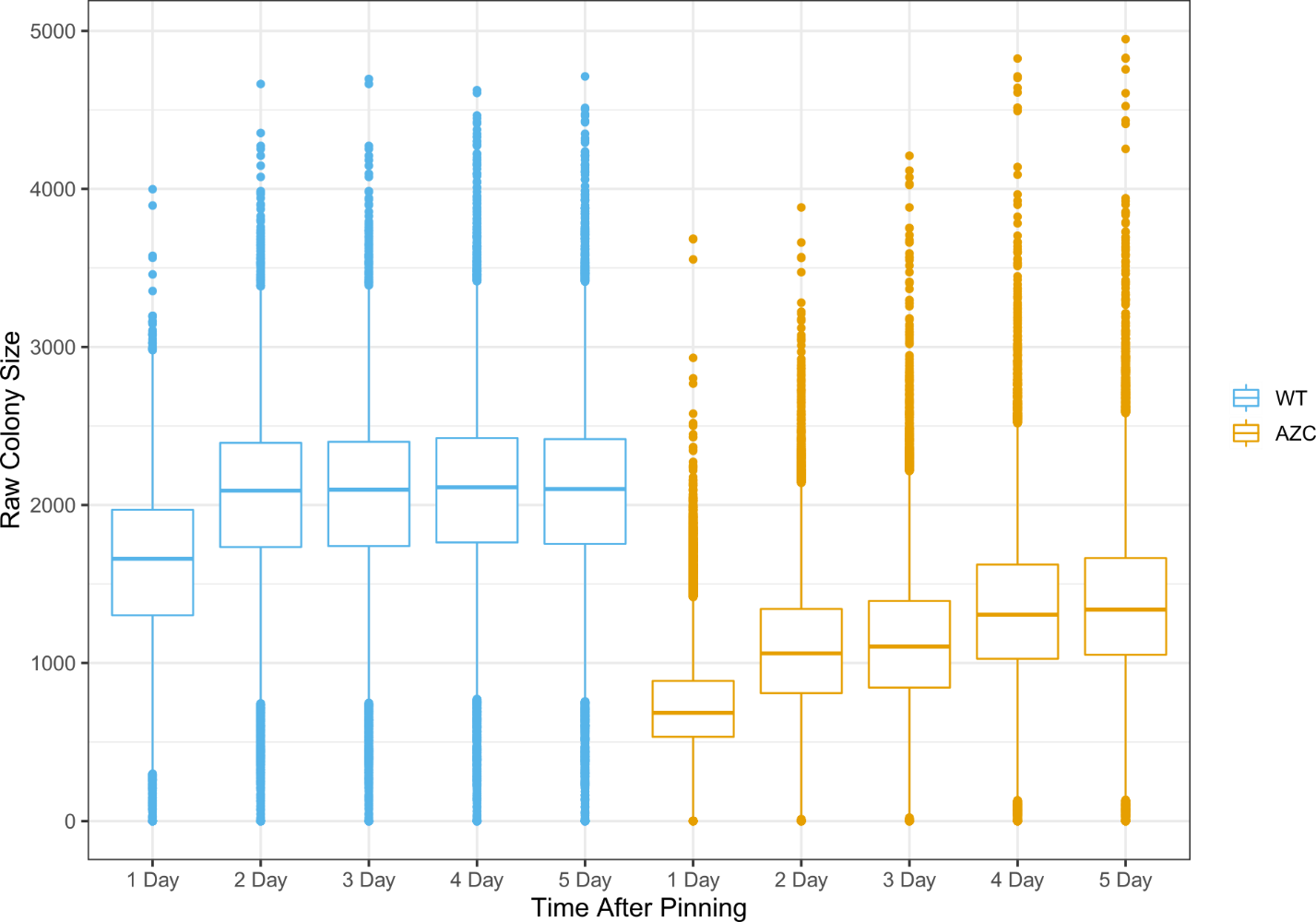
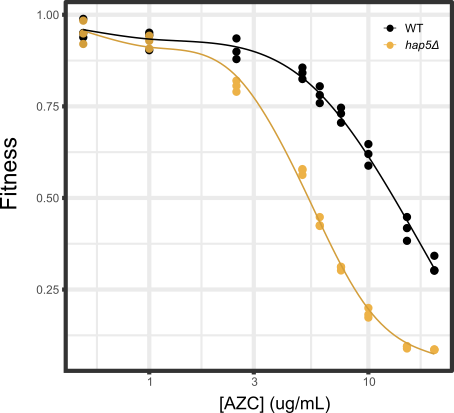
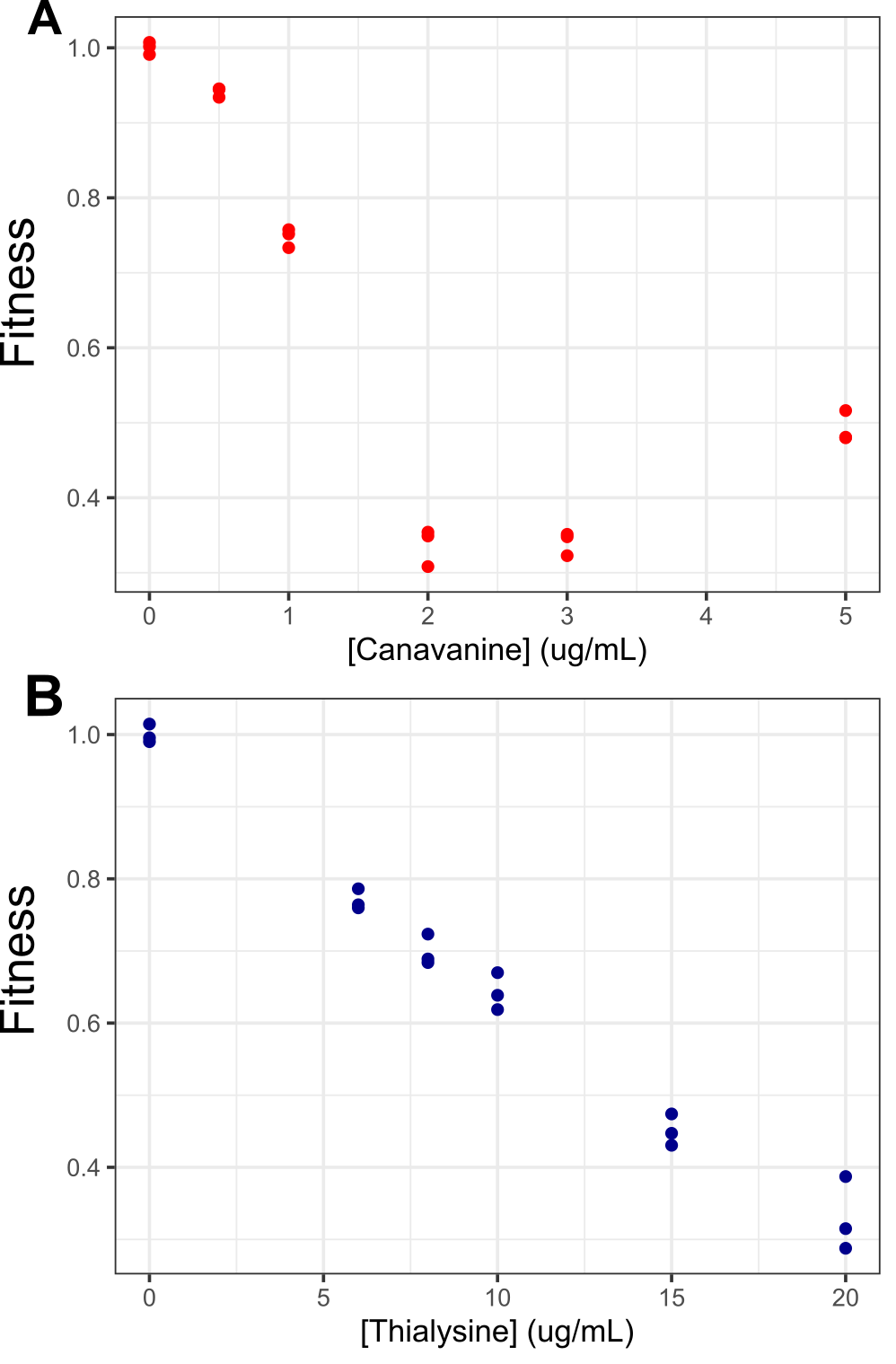
**Supplemental Material**



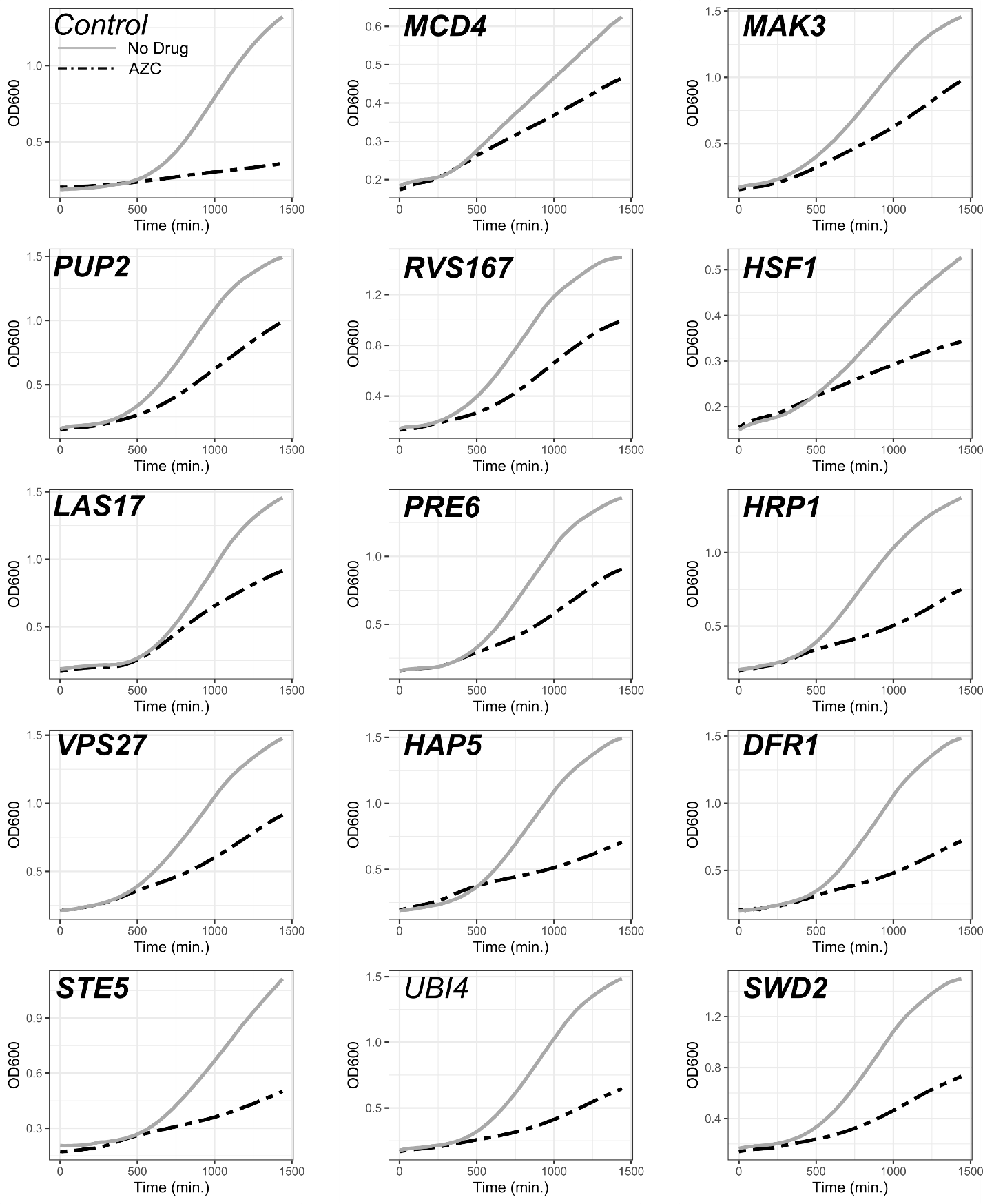
**Figure S1.** Raw colony size for all strains screened. Cells were pinned onto either SD media (WT) or SD media containing 300 µM AZC and grown at 30° for 5 days. Plates were imaged every 24 hrs and colony size was measured using SGATools (Wagih *et al.* 2013).

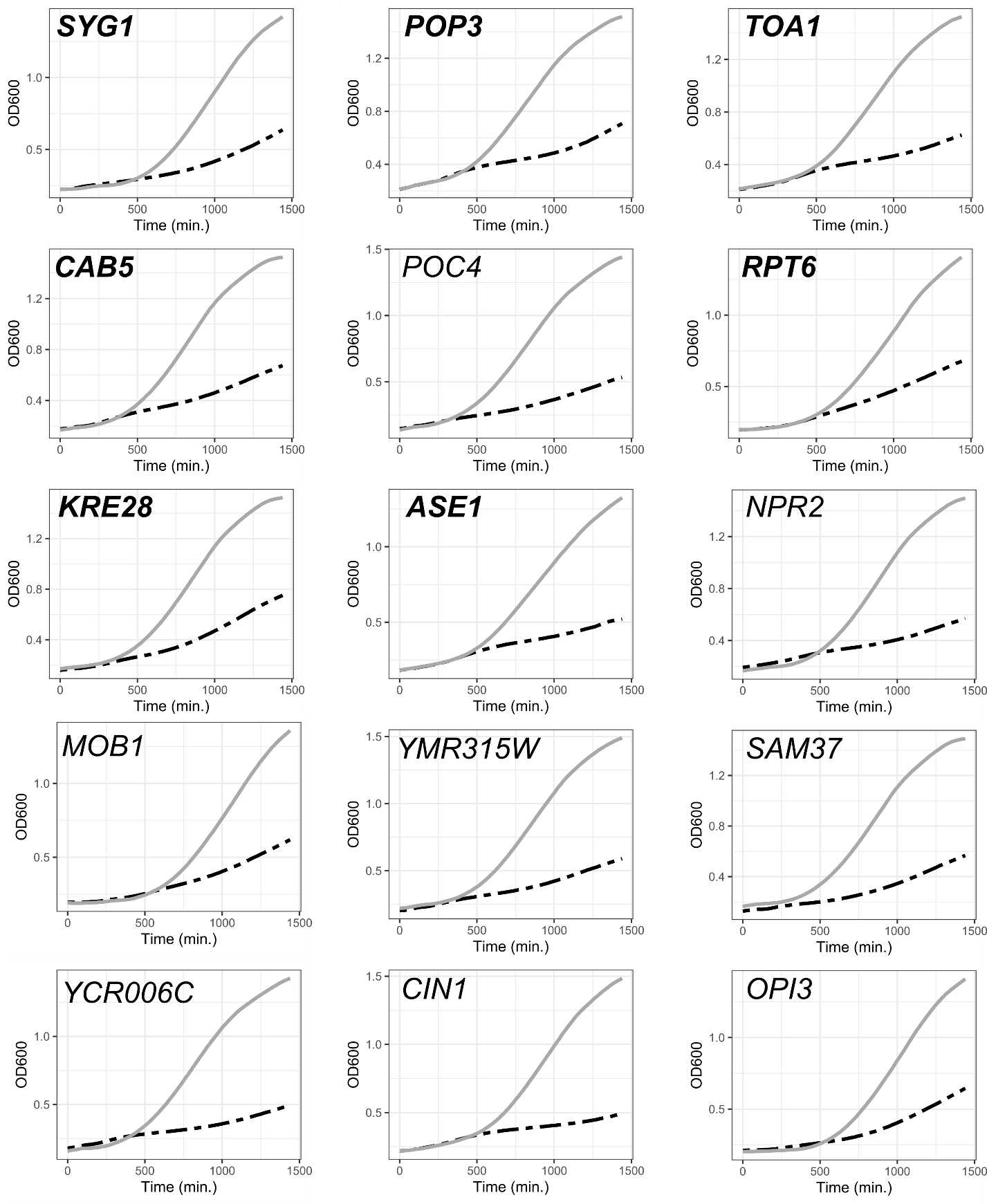


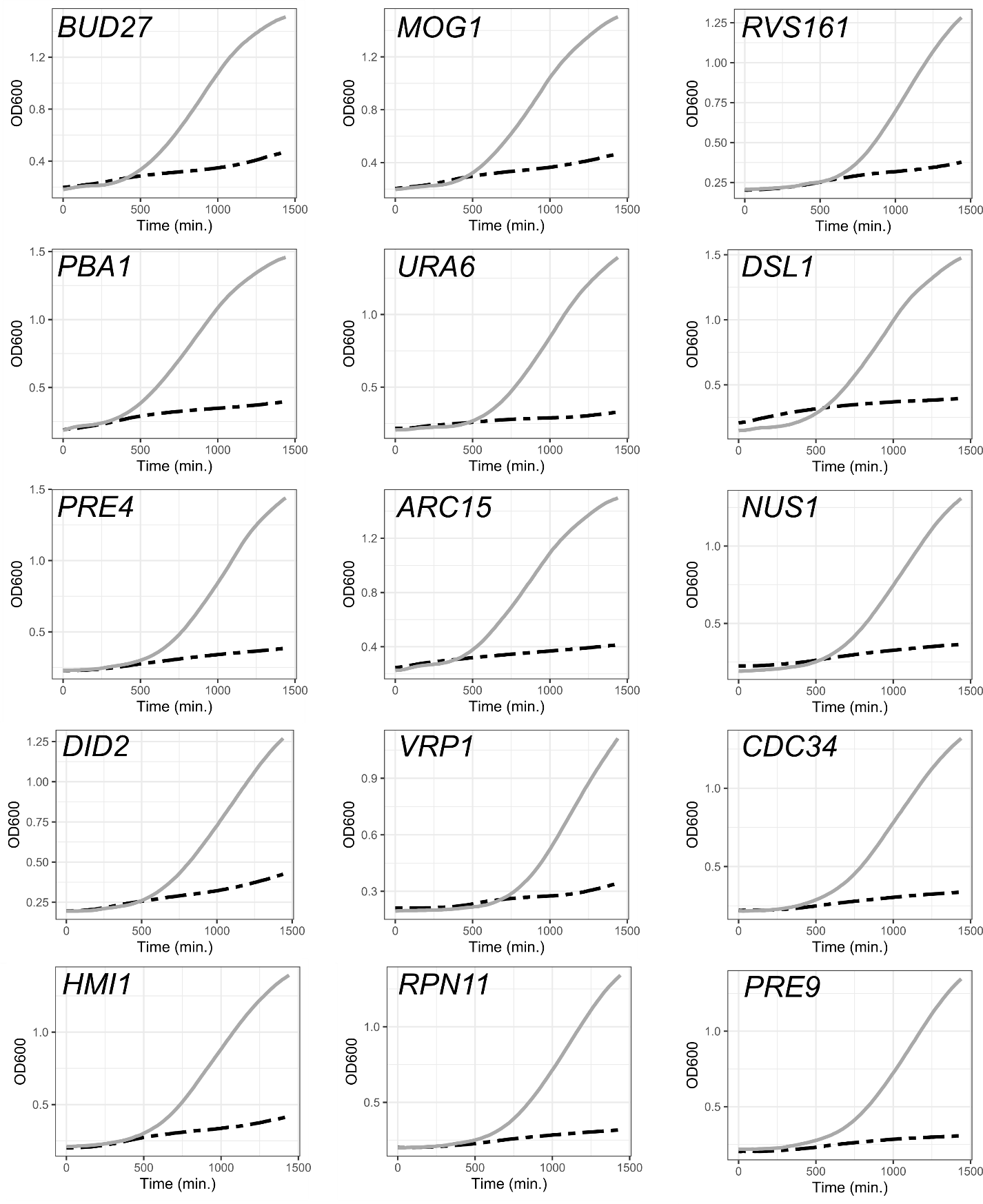
**Figure S2.** Dose-response curve of wild-type (*his3Δ*) and AZC sensitive (*hap5Δ*) yeast strains to various concentrations of AZC. Strains were grown in triplicate to saturation in YPD medium, diluted to an OD600 of 0.1 in SD medium containing AZC and grown for 24 hrs at 30°. Fitness was defined as the area under the growth curve at the indicated AZC concentration, normalizing to the growth of the wild-type strain in medium lacking AZC. Each point represents a biological replicate (n = 3).

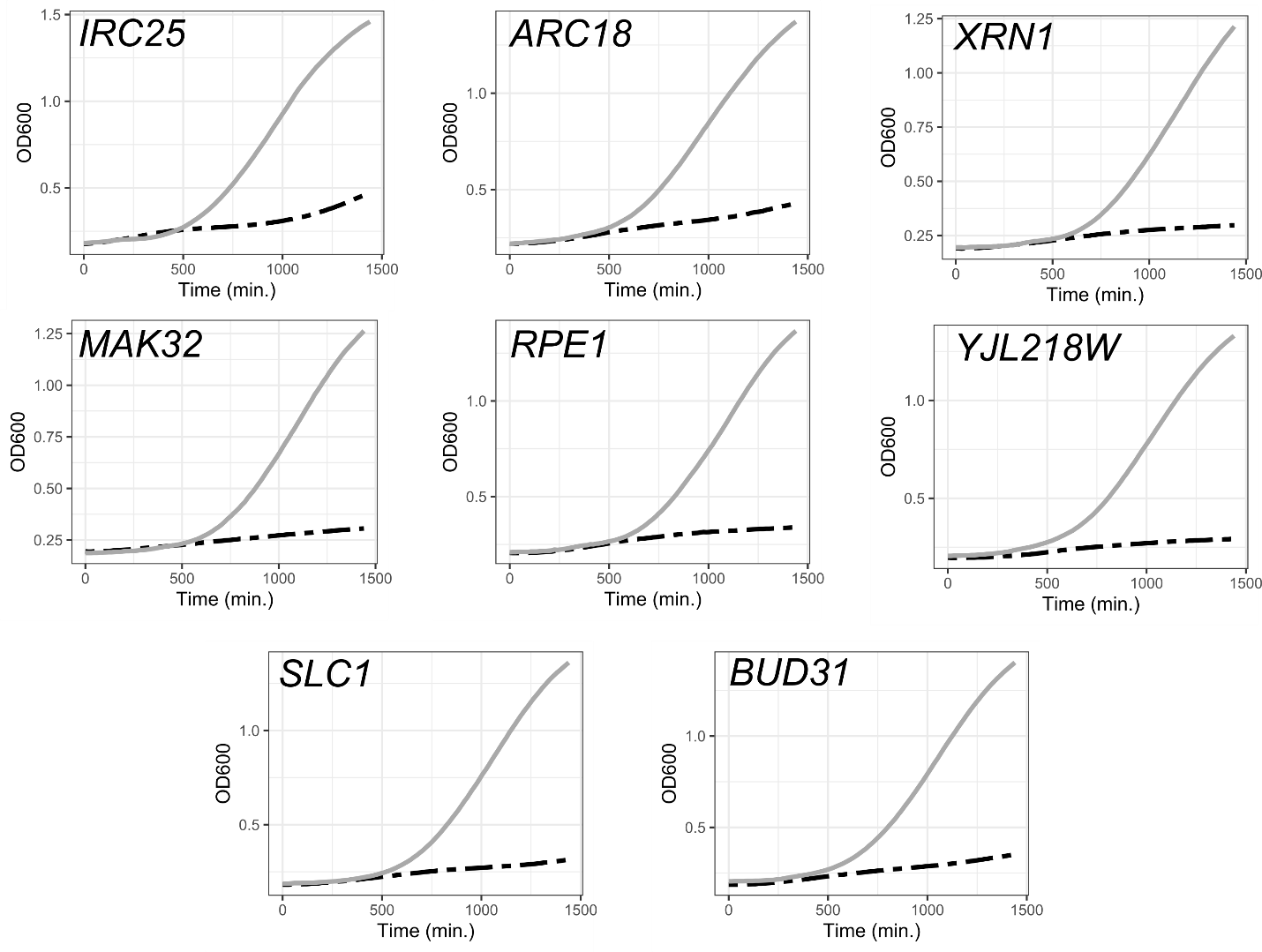
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**Figure S3.** Dose-response curve of wild-type (*his3Δ*) yeast strains to various concentrations of (A) canavanine and (B) thialysine. Strains were grown in triplicate to saturation in YPD medium, diluted to an OD600 of 0.1 in SD medium containing the indicated amino acid analog and grown for 24 hrs at 30°. Fitness was defined as the area under the growth curve at the indicated concentration, normalizing to the growth of the wild-type strain in medium lacking the amino acid analog. Each point represents a biological replicate (n = 3).









**Figure S4.** Representative growth curves for each overexpression strain. Strains from the FLEX collection (Hu *et al.* 2007; Douglas *et al.* 2012) were grown overnight in medium lacking uracil and containing raffinose. Strains were diluted to an OD600 of 0.1 in media lacking uracil and containing galactose either with 10 µg/mL AZC or without and grown for 24 hr at 30° with agitation in a plate reader. OD600 was measured every 15 minutes. Gene names that are in bold are considered to suppress AZC toxicity and result in a ratio of the AUC plus/minus AZC two-fold or greater than that of the control strain with a correct *p*-value ≤ 0.05 (n = 3).