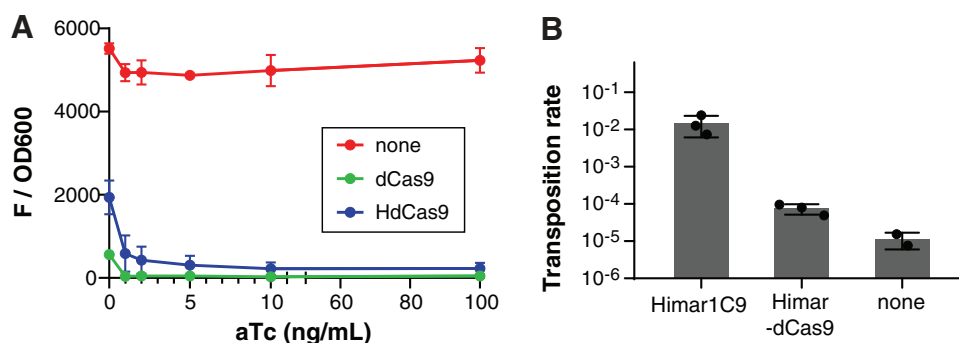


Supplementary Data



SUPPLEMENTARY FIG. S1. Himar1C9-dCas9 (Himar-dCas9) fusion protein retains DNA binding and transposition functionalities. **(A)** dCas9 and Himar-dCas9 were expressed in MG1655 *galk::mCherry-specR* *E. coli* with gRNAs 5 and 16. Protein expression was induced with aTc (0–100 ng/mL); $n=3$ for each condition. Both proteins decreased mCherry expression compared with the parent strain, indicating that the Himar-dCas9 fusion protein bound to the mCherry gene specified by the gRNAs and blocked transcription. **(B)** The transposition rates of Himar1C9 and Himar-dCas9 (without gRNA) were measured in an *E. coli* conjugation assay ($n=3$ for transposases, $n=2$ for control). Both Himar1C9 and Himar-dCas9 mediated transposition at higher rates than the no-transposase control. Error bars indicate standard deviation.