

Supporting Information:

Expanding the zinc-finger recombinase repertoire: Directed evolution and mutational analysis of serine recombinase specificity determinants

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> β -H1

MAKIGYARVSSKEQNLDLDRQLQALQGVSKVFSKLSGQSVERPQLQAMLNLYIREGDIVVTELDRLGRNNKELTELMNAIQKQATLEVLNLP SMNGIEDENLRRLINNLVIELYKYQAESERKRIKERQAQIEIAKSKGKFKGRQHKGEMPYKCPECGKSF SRSDVLRHQRTHTGEKPYKCPECGKSFSDPGHLVRHQRTHTGEKPYKCPECGKSF SQSSHLVRHQRTHTGKKT*

>Sin-H1

MIIGYARVSSIDQNLERQLDNLKTFGVEKIFTEKQSGKSVENRPVFQEALNFVRMGDRFVVESTI DRLGRNYDEIIE TVNYLKEKDVQLMITS LPMNEVTGNPLLDKFMKDLIIQILAMVSEQERNESKRRQAQGIQVAKEKGVYKGRPLL GEMPYKCPECGKSF SRSDVLRHQRTHTGEKPYKCPECGKSFSDPGHLVRHQRTHTGEKPYKCPECGKSF SQSSHLVRHQRTHTGKKT*

Supplementary Table S1. Amino acid sequences of the wild-type β and Sin zinc-finger recombinases used in this study. The H1 zinc-finger domain is colored green.

MAKIGYARVSSKEQNDRQLQALQGVSKVFSKLSGQSVERPQLQAMLN YIREGDIVVVT 60
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MAKIGYARVSSKEQNDRQLQALQGVSKVFSDRLSGQSVERPQLQAML SYIREGDIVVVT 60
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