

Table S1: ZFTS135 dataset of zinc finger target sequences and activity labels. DNA sequences of zinc finger target sites (shown reading 5' - 3') and functional activity labels for 135 experimentally validated ZFP-target site pairs analyzed in this study. "Active" indicates sites for which the OPEN method has been used to generate at least one corresponding zinc finger array that provides ≥ 3 -fold activation of a β -galactosidase reporter gene in a bacterial 2-hybrid (B2H) reporter assay. For 82 target sites, B2H assay results are reported here for the first time. Asterisks (*) denote the remaining 53 target sites for which B2H activity results were reported previously and were extracted from ZiFDB (<http://bindr.gdcb.iastate.edu/ZiFDB/>).

Target 5' - 3'	Activity Label	Target 5' - 3'	Activity Label	Target 5' - 3'	Activity Label
GCATTTTTT	Inactive	GAGGGCGGC	Active	*GGAGGGGCT	Active
GCCGCAGCT	Inactive	GAGGGGGCG	Active	GGAGGTGAC	Active
GCTTGAGCT	Inactive	*GAGTGAGGA	Active	GGAGGTGGA	Active
*GGCGCTAC	Inactive	GAGTGAGTT	Active	*GGAGGTGGT	Active
*GGCGGAGAT	Inactive	*GAGTTTGCC	Active	GGCGCAAC	Active
*GGCGTTTGC	Inactive	GATGAAGAC	Active	*GGCGGCGGA	Active
GGGAATAC	Inactive	*GATGAAGCT	Active	GGCTGAGGC	Active
GGTGTCTTT	Inactive	GATGAGGCG	Active	GGCTGGGCT	Active
*GTGGCGGAT	Inactive	GATGCCAAC	Active	GGCTGGGTG	Active
GTGTTTGAA	Inactive	GATGCGGCA	Active	*GGGAAGAG	Active
GTTGATTTT	Inactive	GATGTAGCC	Active	GGGAAGAT	Active
GTTTTTGAG	Inactive	GATTGAGTT	Active	*GGGGACGTC	Active
TAAGTTGTT	Inactive	GCAGAAGCT	Active	*GGGGAGGAG	Active
TCTGCATTC	Inactive	*GCAGCAGAG	Active	GGGGTCGAC	Active
*TCTGGCGCT	Inactive	*GCAGCAGGA	Active	GGGGTGGGT	Active
*TCTGGTTTC	Inactive	*GCAGCGGGC	Active	GGTGAATTT	Active
TCTGTGTTT	Inactive	*GCAGGAGGT	Active	GGTGAGGCA	Active
TCTTGGGTA	Inactive	GCAGTGTGT	Active	GGTGCAGCA	Active
*TGCGGCTGT	Inactive	GCCGAAGAT	Active	GGTGCTGAC	Active
TGCTGAGAC	Inactive	*GCCGCCGCG	Active	GGTGGCGCT	Active
TGCTTTGTT	Inactive	GCCGCTGGA	Active	GGTGGGGTG	Active
TGGGTAGAA	Inactive	*GCCGCTGGG	Active	GTAGAGGAG	Active
TGGTTTGTA	Inactive	*GCCGGCGGC	Active	*GTAGATGGA	Active
TGTGTGTTT	Inactive	GCCGGTGCA	Active	GTAGCCTGT	Active
TTAGGAGGT	Inactive	*GCCGGTGGC	Active	GTAGCTGGA	Active
TTTGAGGAT	Inactive	*GCCGTCGCC	Active	GTCGACGCC	Active
TTTGCTGAA	Inactive	GCGGCCGCG	Active	*GTCGATGCC	Active
TTTGTGGTG	Inactive	*GCGGCGGAC	Active	*GTCGGGGTA	Active
TTTGTGTGT	Inactive	*GCGGCTGGG	Active	GTCTGAGGC	Active
*GAAGAAGCT	Active	GCGGGGGGC	Active	GTCTGGGCT	Active
*GAAGACGCT	Active	GCGGGTGTG	Active	*GTGGACGCG	Active
*GAAGATGGT	Active	GCGGTGGCG	Active	*GTGGCTGGT	Active
*GAAGCAGCA	Active	GCGTGGGCG	Active	*GTGTAGGGG	Active
*GAAGGATTC	Active	GCGTTGGCG	Active	TAAGCAGAA	Active
*GAAGTGGTC	Active	GCTGACTTT	Active	TAATTGGAG	Active
GAATTGGCG	Active	GCTGAGGCT	Active	TCTGCTGGC	Active
*GACGACGGC	Active	*GCTGATGCC	Active	TCTGGTGAG	Active
GACGCCGGA	Active	GCTGCAGAA	Active	*TGGGAGTCT	Active
*GACGCTGCT	Active	GCTGCCGTC	Active	TGGGATGTT	Active
GACTGAGAA	Active	*GCTGCTGCC	Active	*TGGGGTGCC	Active
GACTGGGCG	Active	GCTGCTGGT	Active	*TGGGTGGCA	Active
GACTGGGCT	Active	GCTGGAGGG	Active	*TTAGAAGTG	Active

*GAGGACGGC	Active
*GAGGACGTG	Active
*TGGGCTGCT	Active

GCAGCGGGA	Active
*GGAGGAGGT	Active
GGAGGCGTG	Active

*TTATGGGAG	Active
TTTGTTGGC	Active
*GGTGCTGCC	Active