

Supplemental Text S2 Technical issues of the off-target effects.

For the possible off-target effects in this study. First, we have considered this issue on the experimental design, off-targeting matches have been avoided in the design of TALEN binding sites ([Supplemental Table S1](#)). Second, generally, off-target effects are very unlikely to increase the fitness. In contrast, we observe these miRNA KO have advantageous effect in most fitness components, suggesting the fitness of these strains is in the miRNA-independent manner. In addition, to rule out the possibility of off-target effects, we use a couple of components of female fitness as a control in the viability assay. Since these miRNAs show testis restricted expression, one would expect their mutants should not have impact on female fitness. As showed in [Supplemental Table S4](#), compared to control, *mir-978*, *mir-983* and *mir-984* KO have significantly advantages in male viability whereas no difference in female viability.