Figure S5 Genome editing occurs in embryos of mated hermaphrodites

Figure S5 Genome editing occurs in embryos of mated hermaphrodites

Comparison is shown for the frequency of indels at an intergenic locus on chromosome I (A), at *sex-1 X* (B) using a GG guide RNA instead of the AG guide in Figure 10, and at *lir-1 II* (C) in paternal (male sperm) genomes of progeny from mated hermaphrodites versus the frequency in sperm and/or oocyte genomes of self-fertile hermaphrodites. Cas9-targetable alleles of loci are shown in green, and non-targetable polymorphic alleles are shown in gray. The far-left column shows the configuration of oocyte and sperm alleles [maternal (m) or paternal (p)] for the *dpy-10* co-conversion marker and the designated locus in mated or self-fertile hermaphrodites. The ovals show the genotypes of designated loci in Dpy / Rol progeny from mated (blue) or self-fertile (red) hermaphrodites as determined by sequence analysis. An asterisk indicates the polymorphic allele with an indel. This allele is shown in parenthesis because the indel occasionally changes the GG sequence. For self-fertile hermaphrodites, either the sperm or oocyte allele could be repaired imprecisely to form an indel. Thus, only one arbitrary allele is shown with an indel. For mated hermaphrodites, the percentage of indels in Dpy / Rol outcrossed progeny (n) was calculated by the formula: (number of indels in target gene) / (total number of Rol / Dpy F1s in outcrossed progeny) X 100. For self-fertile hermaphrodites, the percentage of indels within Dpy / Rol progeny (n) was calculated by the formula: (number of indels in target gene) / (total number of Rol / Dpy F1s in self progeny) X 100. For *sex-1* and the intergenic locus on chromosome I, the frequency of indels in the single paternal allele of cross progeny from mated hermaphrodites was higher than that for the two identical alleles in progeny from self-fertile hermaphrodites ($P < 10^{-4}$, chi-square), indicating that highly efficient genome editing occurs in embryos, and male sperm DNA can be targeted more effectively than hermaphrodite DNA. The frequency of indels at *sex-1* from self-fertile hermaphrodites is likely higher than that in Figure 10E, because GG guides are more effective than AG guides (see Figure 7). In contrast, the single paternal allele of *lir-2* was targeted at half the frequency as the two alleles in self-fertile hermaphrodites ($P < 10^{-5}$, chi-square), indicating that mating does not always improve the frequency of mutagenesis.