Regarding gonadal mosaicism:

Evidence is accumulating at UMMS to indicate that approximately 20-25% of all mice positive for a CRISPR-induced mutation in a tail biopsy will display gonadal mosaicism for the mutation. This means that they will not transmit the mutated allele at Mendelian frequencies when breeding, and may even transmit other types of mutations (HDR or indels) or even wt alleles to some of their offspring. This is likely due to CRISPR mutation occurring at the 2 or 4 cell blastocyst stage in the injected embryos, or correction of the mutated allele by either re-mutation or via gene conversion. In any case, the TAMC strongly encourages UMMS Investigators to breed all positive-mutated mice for one generation and score 6-8 of the F1 offspring of the founder for mutation, particularly if undertaking an HDR-based experiment.

We will try to keep records of such events in order to provide further information to UMMS users. To this end, please let us know about such occurrences in your own research.

March 14, 2016