

## Guidelines for Breeding Animals for MAX-BAX<sup>®</sup>

In order to provide the maximum benefit with MAX-BAX<sup>®</sup>, 10-20 animals should be screened at each generation. This is a sufficiently large sample number to have a good chance of identifying animals with above-average percentages of the recipient strain.

To expedite the backcrossing process, animals should be biopsied at weaning, and samples submitted promptly. This allows us to assay the samples and return results to you in a timely manner, so that animals can be bred as soon as they reach sexual maturity.

Unless the gene of interest is sex-linked, the sex chromosomes can be fixed by breeding, and we will not assay the X or Y chromosomes. While the sex chromosomes can be fixed at any generation, it frequently provides an advantage in terms of animal husbandry to do so early in the breeding scheme.

- *Fixing the Y:* Mate female carriers to males of recipient strain; all male offspring will carry the recipient strain Y chromosome.
- *Fixing the X:* Mate male carriers with the recipient strain Y chromosome (from above) to females of the recipient strain; all male offspring will carry the recipient strain X chromosome.
- Proceed with mating male carriers to females of the recipient strain.

If the initial animals are already on a defined background, the F1 progeny (of the founder animal and a mate of the recipient strain) will all be 50% recipient strain, so there is no advantage in performing a microsatellite analysis at this point. If the founder animal is homozygous for the gene of interest, the progeny are obligate heterozygotes, and genotyping for the gene of interest is also not necessary for this generation.

If the initial animals are on a hybrid background and the desired recipient strain is one of the strains contributing to this background, MAX-BAX<sup>®</sup> genotyping of the F1 generation can identify animals with a higher-than-average percentage of the recipient strain.

**For further information, please contact us at (518) 286-0018 or [gts@crl.com](mailto:gts@crl.com).**