

Protecting your mouse lines during COVID-19 shutdowns

COVID-19 has disrupted every aspect of daily life around the globe. At Transnetyx, we know that your research has been impacted.

There are steps you can take to preserve your work now that will minimize the impact of this crisis later.

Cryopreservation offers a solution for protecting your lines. The first step is deciding whether to cryopreserve embryos or sperm.

	Embryo Cryopreservation	Sperm Cryopreservation
Best for	• Strains with custom or unique genetic backgrounds • Models with multiple mutations • More frequently used strains	• Strains on inbred backgrounds • Small colonies • Models with single mutations • Less frequently used strains
Pros	• Protects your ability to recover your desired genotype • Faster cryorecovery time	• Lower up-front costs • Only two males needed
Considerations	• Best for frequently-used strains • Requires up to 10 female specimens	• Best for lower-use strains and recovery of heterozygous mice
Critical steps	Perform genetic background testing <i>first</i> to know which option is best, and to minimize cryopreservation costs. Submit fresh fecal pellets for microbiome analysis <i>and</i> freeze pellets from each preserved strain (at -80°C), so that you can reconstitute the microbiome when you bring your lines back up.	

It is critical to note that cryopreservation is not the whole story. Reproducibility is key. A few extra steps now will be worthwhile when you bring your lines back up later.

Know the genetic background before you cryopreserve.

Genetic background testing will inform your decision to cryopreserve embryos or sperm. This is perhaps your most important decision. The methods are not one size fits all. Additionally, having a clear understanding of the background of your mice will be critical when you re-institute your lines after the COVID-19 crisis.

Transnetyx stores all genotyping samples for six months. We can quickly run a genetic monitoring panel on your C57BL/6J, BALB/c strains on samples you have already submitted.

Take steps to preserve your colonies' gut microbiome.

Shifting gut microbiomes can alter the phenotype of your mice. Deep cleaning in lab spaces as a result of the COVID-19 pandemic may have an effect on the gut microbiome of your mouse lines.

Consider submitting fecal pellets for Microbiome Analysis. In most cases, collection kits arrive within 24 hours of your request.

By freezing several pellets from each preserved strain (at -80°C) you will be able to reconstitute the microbiome when you bring your lines back up. When the crisis is over, place these pellets in your cages to reproduce the original gut flora.