

U.S. Academic and Government Mouse Embryology Program

PROTECT YOUR RESEARCH MODELS AND SAVE RESOURCES

As a leading provider of genetically engineered rodent model and scientific services for over 60 years, Taconic Biosciences has developed a flexible and affordable **Embryology Program** exclusive to academic and government researchers. This unique program addresses the needs of academic and government researchers by leveraging our superior embryology capabilities and state-of-the-art gnotobiotic facilities.



PROGRAM BENEFITS

- ▶ Consultations with embryologists and PhD level scientists
- ▶ Coordination of every project by a dedicated project manager
- ▶ Defined benchmarks for evaluating success through stringent quality control processes
- ▶ Simple pricing structure independent of genetic background and modifications

CRYOPRESERVATION SOLUTIONS

Taconic provides sperm and embryo cryopreservation services using cutting edge reproductive technologies and rigorous quality control assessment.

Our scientific experts work collaboratively with you to determine the most appropriate cryopreservation solution based on the uniqueness of your genetically engineered mouse models.

Following cryopreservation, your model can be quickly and easily recovered at any point in the future to facilitate new research goals. Your recovery can also be scaled as needed through **FRapid® expansion**, and Taconic's extensive health monitoring system ensures that you will receive animals of a defined health status upon cryorecovery.

EMBRYOLOGY SERVICES	2025 Price*	TIMELINE
Cryopreservation	Per Line	
Sperm Cryopreservation	\$1,095.00	4-8 weeks
Embryo Cryopreservation	\$3,095.00	4-8 weeks
Trial Recovery to Live Born (QC3)	\$1,050.00	N/A
Cryostorage	\$330.00/yr	N/A
Cryorecovery	Per Line	
Sperm Cryorecovery	\$1,995.00	12-16 weeks
Embryo Cryorecovery	\$1,995.00	12-16 weeks
Rederivation	Per Line	
Standard Rederivation	\$4,500.00	12-16 weeks
Custom Rederivation	\$4,500.00	12-16 weeks

*Pricing listed is only for U.S. academic and government research facilities.

*Exclusive to mouse embryology services. Request additional information on our rat embryology services.

*All projects are subject to \$195.00 project documentation fee.

ADVANTAGES OF CRYOPRESERVATION

Cryopreservation offers several advantages over maintaining live colonies:

- ▶ Reduce overall project running cost
- ▶ Provide more efficient use of vivarium space
- ▶ Protect from pathogens, diseases, and breeding failures
- ▶ Insure against catastrophic events
- ▶ Maintain model integrity by limiting genetic drift
- ▶ Facilitate distribution of models to collaborators
- ▶ Enhance compliance with 3Rs of animal welfare

SPERM CRYOPRESERVATION

The speed and simplicity of sperm cryopreservation has made it the most common approach to protect genetically engineered mouse models from unforeseeable events. Sperm cryopreservation is generally recommended for lines carrying a single genetic modification on a standard inbred strain. Only two male mice are required and sperm cryopreservation has a lower upfront cost compared to embryo cryopreservation.

Inputs	2 male mice (2-8 months old)
Deliverables	<ul style="list-style-type: none">• 15-20 straws of sperm are cryopreserved per line• Includes a quality assessment by <i>in vitro</i> fertilization• (IVF) assay (% fertilization rate)• Dual-site storage for added security• Cryopreservation completion report

EMBRYO CRYOPRESERVATION

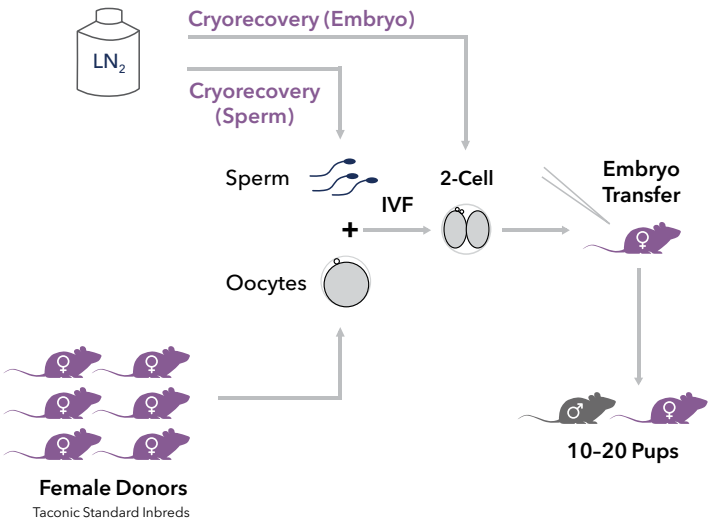
Embryo cryopreservation is the method-of-choice when the full genetic background must be preserved. It is recommended when homozygosity is required upon recovery, multiple unlinked mutations are present, and the genetic background is mixed or otherwise complex. A colony may need to be expanded to produce the required number of oocyte donors.

Inputs	2 male mice (2-8 months old) 20-30 female mice (3-10 weeks old)
Deliverables	<ul style="list-style-type: none">• 250 two-cell embryos are cryopreserved per line• Optional quality assessment to live born (QC3)• Dual-site storage for added security• Cryopreservation completion report

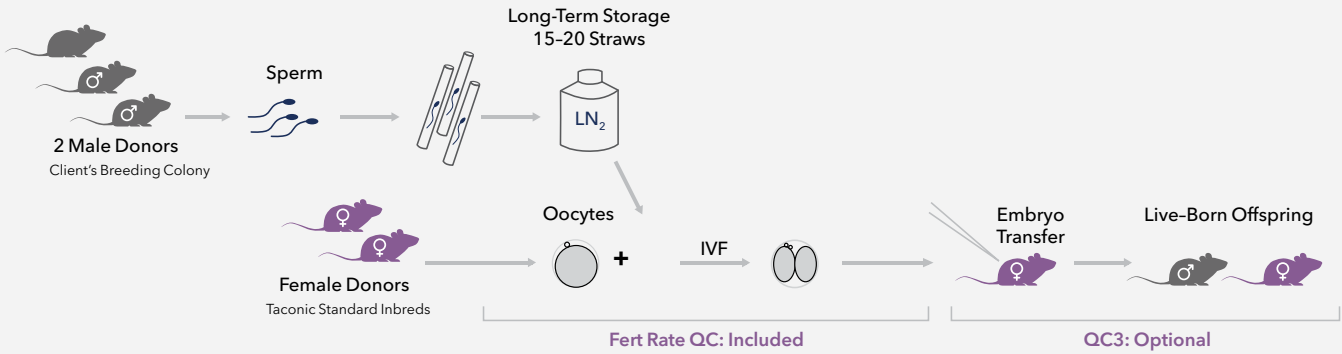
CRYORECOVERY

Taconic offers two cryorecovery services, allowing age-matched mice to be produced quickly and cost-effectively from frozen sperm or embryos. For sperm cryorecovery, embryos are generated by IVF using frozen sperm and implanted into gnotobiotic pseudo-pregnant females. For embryo cryorecovery, frozen thawed embryos are directly implanted into pseudo-pregnant females.

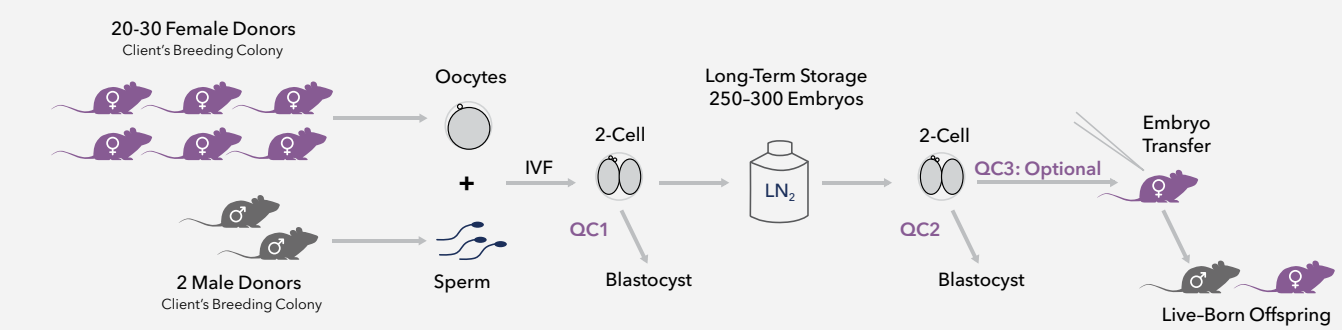
Recoveries typically yield 10-20 pups at Murine Pathogen Free™ (MPF™) health status. Larger cohorts, if desired, can be generated through Taconic’s FRapid™ expansion service.



SPERM CRYOPRESERVATION



EMBRYO CRYOPRESERVATION



TACONIC CRYOPRESERATON QUALITY CONTROL PROCEDURES

QC Option	Description	Unit of Measure	Pass Threshold
Fert. Rate (Sperm)	Measure of % fertilization for cryopreserved sperm in an <i>in vitro</i> fertilization assay	% Fertilization Rate	15%
QC1 (Embryo)	Measure of embryo progression from 2-cell to blastocyst for an aliquot of the embryo pool prior to cryopreservation	% Blastocysts (of total embryos cultured)	≥70%
QC2 (Embryo)	Measure of embryo progression from 2-cell to blastocyst for an aliquot of the embryo pool post-cryopreservation	% Blastocysts (of total embryos thawed)	≥65%
QC3 (Both)	Measure of recovery of live born following implantation of frozen thawed 2-cell embryos	% Live Born (of total embryos implanted)	≥15%

	Sperm Cryorecovery	Embryo Cryorecovery
Inputs	1-2 straws of sperm from Taconic or third party*	60-80 frozen embryos from Taconic or third party*
Deliverables	10-20 pups at MPF™ with an IHMS™ health report	10-20 pups at MPF™ with an IHMS™ health report

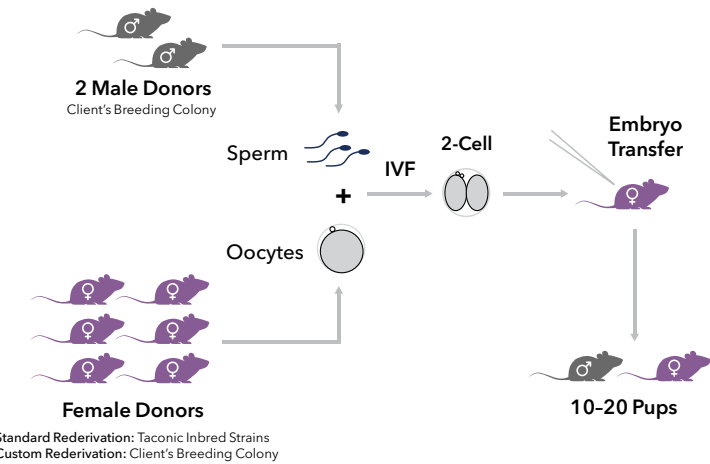
* Deliverables may vary for third party frozen stock. A second attempt will be provided if necessary at no additional cost.

REDERIVATION

Rederivation can be used to remove unwanted organisms and reset your colony to the desired health status, in order to meet research demands or the requirements of your institution.

Standard Rederivation is a quick and easy way to get your line rederived using only two male mice from your colony. Sperm is collected to fertilize oocytes harvested from female donors of a standard inbred strain. This approach is recommended for lines that contain a single, or small number, of genetic modifications on a defined genetic background. More complex lines may require additional breeding after rederivation to restore the original genotype.

Custom Rederivation is an efficient way to rederive your line while maintaining complex genotypes and/or the genetic background of the model. Sperm and oocytes must both be collected from mice in your colony. Although line-specific female mice are required as oocyte donors, this eliminates the need for additional breeding otherwise needed to restore the original genotype.



	Standard Rederivation	Custom Rederivation
Inputs	Sperm donor: 2 males from client's colony (2-8 months old) Oocyte donor: 5-10 females of a standard inbred strain (3-10 weeks old)	Sperm donor: 2 males from client's colony (2-8 months old) Oocyte donor: 7-10 females from client's colony (3-10 weeks old)
Deliverables	10-20 pups at MPF™ health status	10-20 pups at MPF™ health status

Take Your Research Further

MODEL GENERATION SOLUTIONS

Taconic's Custom Model Generation Solutions (CMGS) empowers our clients with model generation solutions specifically suited to the unique needs of their discovery and development studies or therapeutic programs.

- ▶ Gene Inactivation
- ▶ Gene Mutation or Replacement
- ▶ CRISPR Gene Editing
- ▶ Easi-CRISPR
- ▶ Transgene Expression
- ▶ miRNA Expression
- ▶ Cohort Production Packages
- ▶ ExpressMODEL® Platform

COLONY MANAGEMENT SOLUTIONS

Through unique breeding solutions, Taconic's fully integrated Colony Management Solutions brings innovative models from design to study-ready cohorts with unprecedented speed and transparency.

- ▶ Embryology
- ▶ Rapid Colony Expansion
- ▶ Contract Breeding
- ▶ Surgical Services
- ▶ Tissue Collection
- ▶ Genotyping and Molecular Analysis
- ▶ Germ-Free Rederivation
- ▶ Fecal Microbiota Transplantation and Custom Associations

SUPERIOR COMMERCIAL MODELS

Taconic's extensive commercial collection of mice and rats allows easy access to superior off-the-shelf products, or provides an optimal foundation for additional modifications. Product highlights include:

- ▶ The Taconic B6 (C57BL/6NTac)
- ▶ Germ-Free models including the Black 6, BALB/c, Swiss Webster, Il10 Knockout
- ▶ CIEA NOG mouse®
- ▶ Aged APPSWE
- ▶ rasH2
- ▶ Diet-Induced Obese Black 6 Mice
- ▶ Humanized Mice



CHOOSE TACONIC

Taconic's mission is to improve quality of life by providing the right animal model solutions to drive critical research from project to cure.

Taconic delivers this superior value by making its customers the focus of everything it does. From developing the most predictive models to drive key decisions, to custom design and breeding services specifically generated for each specific project, Taconic's expertise, superior products and unique platforms empowers customers to progress their research further, faster.



YOUR COLLABORATIVE PARTNER

As a full-service biosciences company, Taconic can help you acquire, test, develop, breed, cryopreserve, prepare, and distribute highly relevant research lines worldwide. Whether you require custom genetically engineered, cell or tissue engrafted models, or traditional models, Taconic's scientists will partner with you to rapidly and efficiently deliver the highest quality animals.



CONTACT US

Our scientific team is happy to meet and talk with you about the most efficient way to achieve your study goals. Working in partnership with clients all over the world, our scientific team offers expert advice that can help you speed up your research and reduce your overall costs. For information, contact one of our customer service team members, who are here to help you make the right decisions and get the models you need fast. Contact us at info@taconic.com.



VISIT TACONIC.COM

For more information on the entire Taconic portfolio of products and services designed to help further your research, visit www.taconic.com.

Get in touch for more information about our products and services.

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