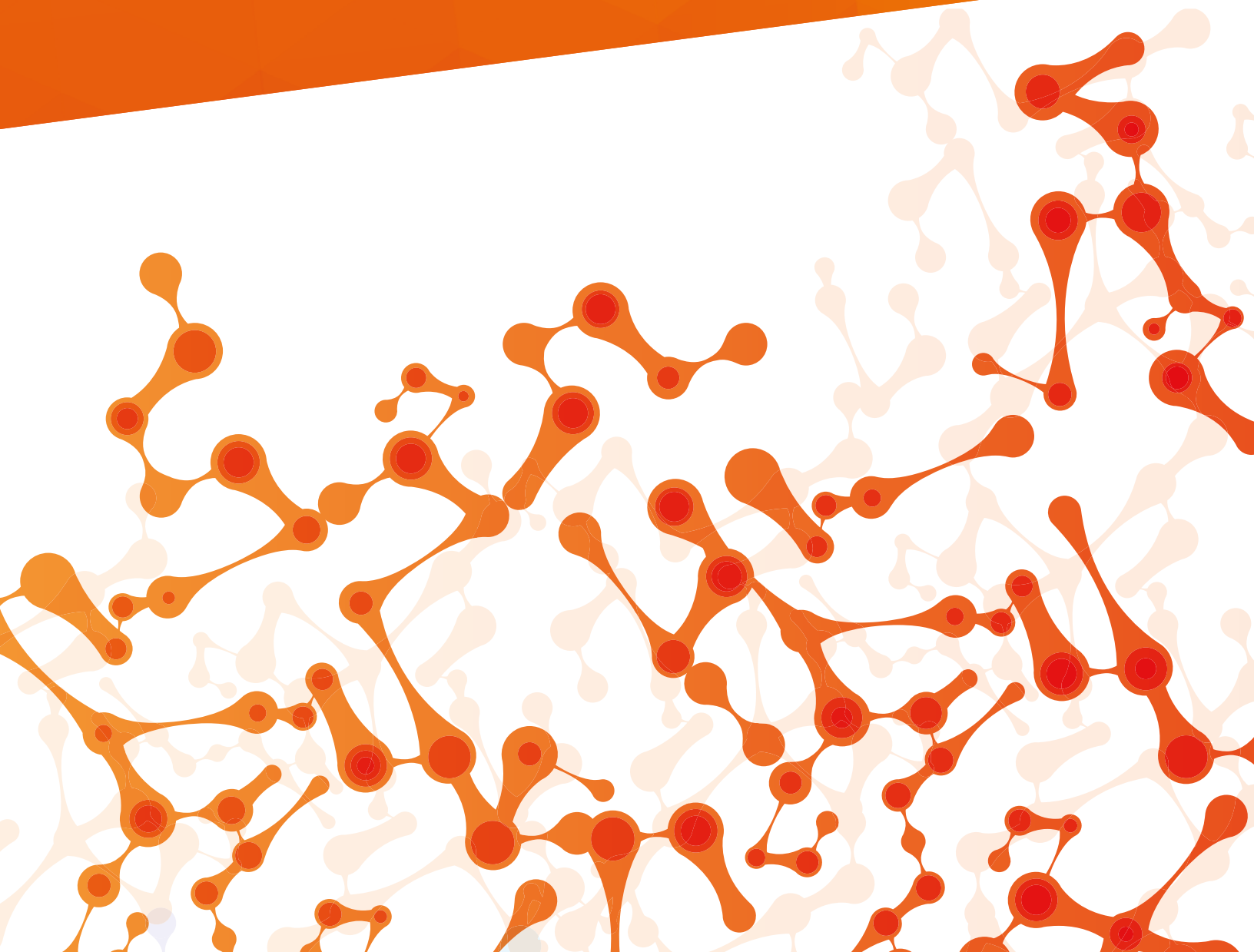


Contract breeding services

The Inotiv advantage

- Full import and export services
- State of the art technologies employed
- Services offered at multiple locations/facilities
- Quarantine facilities
- Dedicated project management



Contract breeding services

Inotiv has performed contract breeding services – rederivation, cryopreservation, revitalization, colony management, contract breeding, and quarantine services – for many years. Originally developed to support our internal breeding operations, we began providing these services to customers. Experience gained through these customer engagements and our continuous investment in capabilities, facilities, and personnel, have enabled us to refine and formalize a comprehensive set of contract breeding service offerings.

Because these capabilities are core to supporting our own breeding operations, we fully understand the importance of high quality breeding services to colony management and to the integrity of the research process. We bring both a provider and customer perspective to the table when working with our customers to develop a plan of action.

Our contract breeding services employees are dedicated to providing high quality, reliable, and consistent results. By continuously striving to achieve this level of performance, we deliver not only what matters to our customers, but we aim to be the most dependable supplier of contract breeding services in the industry.

Project management

We are committed to providing you with state-of-the-art services within our isolator operations, but we also offer every customer a fully engaged customer service experience.

All contract breeding services are managed by a dedicated group of project managers who will work closely with you to develop a customized program to address your needs and requirements. You will always have a knowledgeable expert to liaise on your behalf with Inotiv's operation teams and provide you with regular reports on your project's progress.

Colony maintenance – contract breeding isolator services

For situations in which it is not practical for you to breed and maintain your colonies within your own facility, Inotiv provides the ability to genotype models, colony breeding and maintenance services within our isolator operations.

Our team of experts will work closely with you to understand your needs and develop a customized colony management plan and health surveillance program.

SERVICE	REQUIREMENTS	PROJECT OUTCOME
Colony maintenance isolator rental	<ul style="list-style-type: none"> • Required health monitoring report • Required health surveillance • Required colony size 	<ul style="list-style-type: none"> • Routine animal husbandry / isolator / week • You direct how colony is maintained
Contract breeding isolator rental	<ul style="list-style-type: none"> • Required health monitoring report • Required health surveillance • Required colony size 	<ul style="list-style-type: none"> • Routine animal husbandry / isolator / week • Colony size adjusted to meet your required animal supply demand
Quarantine isolator rental	<ul style="list-style-type: none"> • No required health monitoring report to enter quarantine isolator 	<ul style="list-style-type: none"> • Routine animal husbandry / isolator / week • Health monitoring conducted to determine health status of colony

Genetic testing

Whether you are studying animal models of disease, tumor cell lines, embryonic stem cell lines, or other tissue models, you can be confident that Inotiv’s genetic testing program has a wide variety of services to help you facilitate your discovery process.

- Genotyping of colonies housed in our contract breeding facilities
- Genetic background analysis
- Speed congenics with colonies located in our facilities with genetic test performance

Speed congenics

Animal models of disease are a critical component of most biomedical research programs. A major advantage for utilizing rodents in these paradigms is the ability to control most genetic contributions across generations. Accelerating the creation of a model with the required genetic background can allow you to begin your research and generate results much quicker.

FEATURES

- 1449 SNP marker panel from Illumina
- 3 SNPs per 5 megabase intervals across the genome
- Access to a variety of genotyping applications based on client needs
- Colony maintenance in flexible-film isolators

Inotiv utilizes a 1449 Single Nucleotide Polymorphism (SNP) panel to score all recipient, donor, and experimental samples for genotype across the entire genome. This information is then used to determine which animals are the closest genetically to your recipient background and should be used as future breeders for the next generation of backcrossing.

TRADITIONAL BACKCROSSING		SPEED CONGENIC BACKCROSSING	
Backcross generation	~% Concordance to recipient strain	Backcross generation	~% Concordance to recipient strain
F1	50.00%	F1	50.00%
N2	75.00%	N2	80.00%
N3	87.50%	N3	94.00%
N4	93.75%	N4	99.00%
N5	96.88%	N5	100.00%
N6	98.44%		
N7	99.22%		
N8	99.61%		
N9	99.81%		
N10	99.90%		

The Inotiv advantage

- Reduces backcrossing time by 50 percent or more
- Ability to use a minimum of four male breeders per generation
- Provides higher resolution than microsatellite testing or lower density SNP testing
- SNP map positions maximize genetic information from crosses between the most common mouse strains used in laboratory settings

Rederivations and speed rederivations – rat and mouse

Rederivation is a procedure used to establish pathogen free animals and to improve the overall animal health status of a colony. Inotiv uses embryo transfer to generate small cohorts of pups.

SERVICE	REQUIREMENTS	PROJECT OUTCOME
Rederivation with health screening (your line can remain at Inotiv for colony maintenance and breeding or shipped back to your facility)	<ul style="list-style-type: none"> • 5 donor males (6-27 wk) • 10 donor females (3-4 wk) or • 15 wild-type donor females (3-4 wk) • Genotype of donors 	<ul style="list-style-type: none"> • Rederivation to generate a small cohort (10 offspring) at SOPF Health Status.
Speed rederivation with shipment of pregnant recipient females (pregnant recipients are shipped back to customer, no health screening included)	<ul style="list-style-type: none"> • 5 donor males (6-27 wk) • 10 donor females (3-4 wk) or • 15 wild-type donor females (3-4 wk) • Genotype of donors 	<ul style="list-style-type: none"> • Rederivation where Inotiv will deliver a minimum of 2-3 pregnant recipient females 7-14 days post embryo transfer. Health screening, shipping and shipping container fees are additional.

Cryopreservation – rat and mouse

Inotiv provides both embryo and sperm cryopreservation services.

Embryo and sperm cryopreservation provides a means to permanently preserve the genetic integrity of an animal colony. It also provides a cost effective means to safeguard your valuable model lines in the event of a catastrophic colony disaster.

Sperm cryopreservation is also an economic solution to preserve a mouse line that generally requires fewer donor animals. Although sperm cryopreservation requires fewer animals to complete a project, it only preserves a haploid genome.

SERVICE	REQUIREMENTS	PROJECT OUTCOME
Embryo cryopreservation using wild type females (Inotiv wild type or provided by customer)	<ul style="list-style-type: none"> • 5 donor males (6-27 wk) • 35 wild-type donor females (3-4 wk) • Genotype of donors 	<ul style="list-style-type: none"> • Cryopreservation of approximately 300 embryos produced from your male animals and either Inotiv wild type females or wild type females you provide. Includes <i>in vitro</i> culture quality control of cryopreserved embryos and dual site storage for first year.
Embryo cryopreservation using customer genetic line (homozygous / heterozygous) females	<ul style="list-style-type: none"> • 5 donor males (6-27 wk) • 10 donor females (3-4 wk) or • Genotype of donors 	<ul style="list-style-type: none"> • Cryopreservation of approximately 150 embryos produced from your male and female animals. Includes <i>in vitro</i> culture quality control of cryopreserved embryos and dual site storage for first year.
Mouse Sperm cryopreservation	<ul style="list-style-type: none"> • 2-4 donor males (6-27 wk) 	<ul style="list-style-type: none"> • Cryopreservation of mouse sperm. Approximately 22 straws of mouse sperm are provided. Included <i>in vitro</i> fertilization (2 cell embryos production) quality control of cryopreserved sperm and dual site storage for first year.
Live birth quality control (embryo cryopreservation)	<ul style="list-style-type: none"> • Straw of embryos (minimum 40 embryos) thawed 	<ul style="list-style-type: none"> • Quality control to generate live offspring to confirm embryo viability.
Live birth quality control (sperm cryopreservation)	<ul style="list-style-type: none"> • 2-3 straws of cryopreserved sperm • Embryos generated from IVF 	<ul style="list-style-type: none"> • Quality control to generate live offspring to confirm sperm viability.

Revitalization of embryo or sperm – rat and mouse

Revitalization is a procedure used to establish a small cohort of specific pathogen free animals from cryopreserved material (embryos or sperm).

We can use frozen material from our freezing lab. The detailed revitalization protocol is required for frozen material from other labs/companies. Our experienced team is fully trained in the most up to date techniques for sperm revitalization and IVF.

INOTIV OFFERS SEVERAL REVITALIZATION OPTIONS:

SERVICE	REQUIREMENTS	PROJECT OUTCOME
Revitalization of embryos with health screening	<ul style="list-style-type: none"> • 100 cryopreserved embryos • Thawing protocol 	<ul style="list-style-type: none"> • Revitalization to generate a small cohort (10 offspring) at SOPF Health Status from cryopreserved embryos. Includes rederivation services, recipient and offspring housing and health monitoring.
Revitalization of sperm with health screening (your line can remain at Inotiv for colony maintenance and breeding or shipped back to your facility)	<ul style="list-style-type: none"> • 3-5 straws of cryopreserved sperm • Thawing protocol 	<ul style="list-style-type: none"> • Revitalization to generate a small cohort (10 offspring) at SOPF Health Status from cryopreserved embryos. Includes rederivation services, recipient and offspring housing and health monitoring.
Revitalization with health screening (from cryopreserved embryos of a discontinued mouse line)	<ul style="list-style-type: none"> • Minimum of forty (40) cryopreserved embryos 	<ul style="list-style-type: none"> • Revitalization to generate a minimum of 1 offspring at SOPF Health Status from cryopreserved embryos of a discontinued line. Includes rederivation services, recipient and offspring housing and health monitoring.



Contact us at
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for pricing and additional information