

RESEARCH MODELS AND SERVICES

Product Guide,
Benelux, Scandinavia, DACH and Eastern Europe

Enhancing discovery

Inotiv's Comprehensive Solutions Empower Your Innovation from Discovery through Development

We offer a comprehensive suite of advanced nonclinical and analytical services, and a wide and innovative range of research models to accelerate customer lead optimization. Every research model is designed to enhance a life, with a profound focus on animal welfare and a culture of care toward the animals used and bred at Inotiv. Delivering an exceptional experience to our customers is at the center of everything we do.

At Inotiv, we're committed to supporting your discovery and development objectives to help you realize the full potential of your critical R&D projects to bring life-changing therapies to people around the world.

Discover your own enhanced
outcomes at [inotiv.com](https://www.inotiv.com) today.



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Discovery through approval

At Inotiv, we deliver a comprehensive portfolio of drug discovery services and an integrated range of safety assessment, analytical support, DMPK, and consulting solutions essential to your success.

We have a multidisciplinary scientific staff with the expertise and technological capabilities to support you throughout the drug development life cycle. From lead selection and optimization to IND programs and beyond, our team takes a true collaborative approach working in partnership with you to find the right path that focuses on your objectives.

	Discovery		Preclinical Development	Clinical Development		
	Lead Selection	Optimization		I	II	III
Computational Tox/ Toxicogenomics	In Silico Chemical Structure Evaluation/QSAR, PBPK Modeling, Gene Expression Profiling		IVIVE Modeling, Gene Expression Profiling			
Pharmacology	In Vivo Efficacy Models, Rodent Telemetry		Targeted Proteomics, Disease Biomarkers, PK/PD Modeling			
Drug Metabolism	Metabolic Stability, Metabolic Soft-Spots, Discovery PK Screening, Cell & Molecular Biology		In Vitro DDI (CYP & Transporters), Metabolite ID, PK/TK Analysis	DDI, Circulating Human Metabolites (MIST), PK Modeling		
Safety Pharmacology	Exploratory Screening Using Large & Small Animal CNS, CV, Respiratory		Large Animal CV, Large & Small Animal Respiratory, Small Animal CNS			
General Tox	In Vitro Tox, Exploratory Toxicology (MTD/DRF)		IND Enabling Rodent/Non-Rodent	Sub Chronic & Chronic Tox		Carcinogenicity (Including Transgenic Mice)
Genetic Tox	Screening, Mini Ames & In Vitro Micronucleus		Ames, In Vitro Cytogenetics, In Vivo MN/Comet			
Bioanalysis	Exposure Analysis, Dose Formulation Analysis, Discovery Biotherapeutics & Biomarkers		Regulated Preclinical, Immunogenicity, Biomarkers	Regulated Bioanalysis, Biomarkers		
Histology/Pathology	Target Tissue Assessment, Immunohistochemistry, Digital Imaging, Clinical Pathology		Histology & Pathology, Clinical Pathology			
DART				Fertility & Early Embryonic Development		
				Embryo-Fetal Development		Pre & Postnatal Development
Research Models and Services	General Purpose Models, GEMS Models, Model Support Services					
Teklad Diets	Standard Diets, Custom Diets, Bedding and Enrichment					

Quality programs

Inotiv stands out for our wide range of high-quality research models and services designed to minimize variables and enhance the quality of your research.

ISO 9001:2015 / AAALAC

Diet manufacturing and small animal production facilities are ISO 9001 certified. North American large animal production facilities follow standard operating procedures aligned with the ISO 9001 standard but are not ISO certified. All Inotiv animal facilities are fully accredited to AAALAC International. Our animal operations in the Netherlands and UK are both ISO 9001 certified and AAALAC accredited. Please visit inotiv.com to view a list of all certifications and accreditations for all Inotiv diet manufacturing and animal production sites globally.

Animal welfare **inotiv.com/animalwelfare**

Inotiv is dedicated to the humane care and use of research animals. The IACUC and dedicated veterinary staff manage policies and procedures to ensure that all animal use is performed in accordance with the highest standards.

These include AAALAC International accreditation for the US sites, Assurance of compliance with PHS Policy/OLAW, and USDA Animal Care registration.

All small animal and rabbit production sites in the US are covered by a PHS Assurance and we are fully USDA registered. In Europe all sites comply with EU directive 2010/63 and ETS guidelines and if applicable additional national legislation.

Globally all Inotiv sites maintain compliance with national animal welfare legislation and are under supervision by an Animal Welfare Officer.

Diet and bedding monitoring **inotiv.com/teklad**

Teklad standard laboratory animal diets meet the highest nutritional and hygiene standards. All diets are manufactured under ISO 9001:2015 procedures with careful ingredient sourcing and monitoring.

Many diets are offered certified for contaminant analysis. High-quality bedding and bedding enrichment products are manufactured following appropriate quality standards, screened periodically for contaminants and can be certified on request.

Health monitoring **inotiv.com/healthreports**

We are committed to providing the highest quality animals to the research community and our health testing program provides you assurance of that commitment.

If any significant changes occur in colony genetic, health or microbiologic status, customers are notified immediately upon confirmation.

Animal colonies will be restarted to eliminate significant pathogens or genetic contamination.

Microbiologically-defined rodent and rabbit colonies are maintained within production barriers and flexible-film isolators. Colonies are monitored, by trained personnel supported by our veterinary medical staff, daily for clinical signs of disease or abnormalities.

Our health surveillance programme is based on the FELASA recommendations 2014. Monitoring is carried out at our laboratories in UK and Italy, as well as by outside laboratories.

Genetic monitoring **inotiv.com/GIAP**

The genetic integrity of all stocks and strains are maintained through our Genetic Integrity Assurance Program (GIAP) to prevent mismating, regular monitoring of animal phenotype, quarterly testing of inbred strains using Single Nucleotide Polymorphisms (SNPs), and genetic monitoring of mutant strains. For genetic testing, Inotiv has partnered with Sampled (formerly Infinity BiologiX and Bionomics Research Technology at Rutgers University).

For any questions or reports, please contact our Technical Services group:
VSRSEU@inotiv.com

Microbiological testing and genetic monitoring

MICROBIOLOGICAL MONITORING

The Inotiv comprehensive monitoring programme includes monthly evaluations of barrier-produced rodents and monthly to quarterly evaluations of flexible-film isolator produced rodents. Visit our website to view details of our global health monitoring procedures.

Updated health reports are available at inotiv.com/healthreports

MICROBIOLOGICAL EVALUATION

Mouse serology

- Cilia Associated Respiratory Bacillus (CARB)
- *Clostridium piliforme*
- Ectromelia
- *Encephalitozoon cuniculi*
- Hantaan virus
- K Virus
- Lactic Dehydrogenase-Elevating Virus (LDEV)
- Lymphocytic Choriomeningitis (LCM)
- Minute Virus of Mice (MVM)
- Mouse Adenovirus 1+2
- Mouse Cytomegalovirus (MCMV)
- Mouse Hepatitis Virus (MHV)
- Mouse Norovirus (MNV)
- Mouse Parvovirus (MPV)
- Mouse Rotavirus (EDIM)
- Mouse Thymic Virus (MTV)
- *Mycoplasma pulmonis*
- Pneumonia Virus of Mice (PVM)
- Polyoma
- Reovirus 3 (Reo-3)
- Sendai
- Theiler's Mouse Encephalomyelitis (TMEV)

Rat serology

- Cilia Associated Respiratory Bacillus (CARB)
- *Clostridium piliforme*
- *Encephalitozoon cuniculi*
- Hantaan virus
- Kilham Rat Virus (KRV)
- Lymphocytic Choriomeningitis (LCM)
- Mouse Adenovirus 1+2
- *Mycoplasma pulmonis*
- Pneumonia Virus of Mice (PVM)
- Rat Coronavirus (SDA/RCV)
- Rat Minute Virus (RMV)
- Rat Parvovirus (RPV)
- Rat Theilovirus
- Reovirus 3 (Reo-3)
- Sendai
- Toolan's H-1 (H-1)

Guinea pig serology

- *Chlamydia psittaci*
- *Clostridium piliforme*
- *Encephalitozoon cuniculi*
- Guinea pig Adenovirus (GpAd)
- Guinea pig Cytomegalovirus (GPCMV)
- Lymphocytic Choriomeningitis (LCM)
- Parainfluenza virus 3
- Sendai

Hamster serology

- *Clostridium piliforme*
- *Encephalitozoon cuniculi*
- Lymphocytic choriomeningitis (LCM)
- *Mycoplasma pulmonis*
- Pneumonia Virus of Mice (PVM)
- Reovirus 3 (Reo-3)
- Simian Virus 5 (SV-5)
- Sendai

Rabbit serology

- *Clostridium piliforme*
- *Encephalitozoon cuniculi*
- Rabbit pox virus (Myxomatosis)
- Rabbit Haemorrhagic Disease Virus (RHDV)
- Rabbit Rotavirus
- *Treponema cuniculi*

PCR

- *Corynebacterium bovis*
- *Helicobacter* spp
- *Pneumocystis* spp (only immunodeficient animals and rats, due to causative agent for RRV)

Microscopic evaluations

- Ectoparasites
- Endoparasites
- Enteric protozoan
- Pathological lesions

Bacteriology

Cultures from the nasopharynx or caecum are routinely cultured for the presence of the following microorganisms:

- *Bordetella bronchiseptica*
- *Citrobacter rodentium*
- *Corynebacterium kutscheri*
- Dermatophytes
- *Klebsiella oxytoca*
- *Klebsiella pneumonia*
- *Pasteurella multocida*
- *Pasteurella pneumotropica*
- *Proteus* spp (isolator-produced rodents only)
- *Pseudomonas aeruginosa*
- *Salmonella* spp
- *Staphylococcus aureus*
- *Streptobacillus moniliformis*
- *Streptococcus pneumoniae*
- *Streptococci* Beta-haemolytic (group A and/or D)
- *Yersinia Pseudotuberculosis*

Organisms that are cultured using the media and methods used to culture the organisms above are identified to genus level. These data are available on request.

The lists of bacteria included in routine health monitoring reports vary according to species and immune status of the animals, and are based on the FELASA (2014) health monitoring recommendations. Not all the bacteria listed above are included in all routine reports. Complete lists of cultured bacteria (isolates) are available on request.

Current microbiological monitoring reports and cumulative summaries are provided upon delivery of our animals or can be reviewed on our website. Reports are also available on request for each animal shipment. Significant changes in health status are promptly reported to clients by phone, fax or email.

GENETIC MONITORING

Inotiv's global routine genetic monitoring program consists of collecting tissue samples semi-annually in the North America and Israel, and quarterly in Europe, from all new pedigreed Foundation Colony breeding cages in non-isolator-bred colonies. Tests are conducted on all pedigreed Foundation Colony breeding cages in newly-populated isolated-bred colonies, and then five (5) new Foundation Colony breeder cages annually thereafter. Routine genetic monitoring is also performed on several outbred stocks to determine heterogeneity and compare colonies across locations globally. In addition, various mutant models on either outbred or inbred backgrounds are tested annually to confirm the mutation of interest.

Tissue samples are sent to SAMPLED (formerly Infinity BiologiX and Bionomics Research Technology at Rutgers University) which has partnered with Inotiv. Our laboratory employs a customized panel of single nucleotide polymorphisms (SNPs) to evaluate strain differences in both rats and mice. Our routine rat and mouse SNP panels consist of 48 markers.

Custom made testing profiles are offered for your in house health surveillance programs. These include serology, bacteriology, molecular biology (PCR) and parasitology. Inotiv also offers supply of sentinels and pick up services. See page 69-73 for additional information.

Worldwide production locations



Worldwide stocks and strains

Production locations

COMMON NAME	NOMENCLATURE	CODE	US	UK	NED	PG#
INBRED MICE						
129	129S2/SvHsd	215	+	+		13
A	A/JOlHsd	049			+	*
BALB/c	BALB/cAnNHsd	047	+			20
	BALB/cOlHsd	162		+	+	14
	BALB/cAnNHsd	113		+		14
C3H	C3H/HeNHsd	040	+		+	15
C57BL/6	C57BL/6JOlHsd	057		+	+	16
	C57BL/6JRccHsd	043			+	16
	C57BL/6NHsd	044	+	+	+	16
	C57BL/6NHsd	112		+		17
	C57BL/6NHsd DIO	044	+			17
C57BL/Ka	C57BL/KaLwRijHsd	940			+	20
CBA/Ca	CBA/CaOlHsd	209		+	+	23
CBA	CBA/JCrHsd	055	+			20
DBA/1	DBA/1OlHsd	105	+	+	+	18
DBA/2	DBA/2JRccHsd	343			+	18
	DBA/2NHsd	042	+			*
	DBA/2OlHsd	870		+		18
FVB	FVB/NHan®Hsd	862		+	+	19
	FVB/NHsd	118	+			*
NIH	NIH/OlHsd	059		+		20
SAMP8	SAMP8/TaHsd	954			+	19
SAMR1	SAMR1/TaHsd (control)	956	+		+	19
SJL	SJL/JCrHsd	052	+			20
OUTBRED MICE						
Black Swiss	Hsd:NIHBS	188				*
ICR (CD-1®)	Hsd:ICR (CD-1®)	030	+	+	+	21
ND4 Swiss Webster	Hsd:ND4	032	+			21
NIH Swiss	Hsd:NIHS	035	+	+		21
NMRI	HsdWin:NMRI	275			+	21
Non-Swiss Albino	Hsd:NSA (CF-1®)	033	+			*
TO	HsdOl:TO	876		+		21

¹ The breeding, supply and use of this strain is regulated under the Animals (Scientific Procedures) Act 1986 in the UK (EU Directive 2010/63). Supply to order in the UK is dependent on prior authority having been obtained from the Secretary of State through the UK Home Office Inspectorate. For supply outside the UK we require confirmation in writing, that the receiving establishment has the requisite authority (within that specific country) for the use of these specific animals in a research program. Animals will not be shipped without that written declaration.

* Not described in this guide. We invite inquiries about items not listed. Our Client Service and Technical Service representatives are ready to discuss your special requirements. We will work with you to select the stocks and strains that best suit your needs.

Worldwide stocks and strains

Production locations

COMMON NAME	NOMENCLATURE	CODE	US	UK	NED	PG#
MUTANT MICE (Spontaneous)						
Nudes						
Athymic Nude	Hsd:Athymic Nude-Foxn1 ^{nu}	069	+	+ ¹	+	24
	Hsd:Athymic Nude-Foxn1 ^{nu} /Foxn1 ⁺	070	+	+	+	24
BALB/c Nude	BALB/cOlaHsd-Foxn1 ^{nu}	165			+ ¹	25
	BALB/cOlaHsd-Foxn1 ^{nu} /Foxn1 ⁺	886			+	25
NMRI Nude	HsdCpb:NMRI-Foxn1 ^{nu}	889			+	24
	HsdCpb:NMRI-Foxn1 ^{nu} /Foxn1 ⁺	890			+	24
SCIDs						
NOD.SCID	NOD.CB17-Prkdc ^{scid} /NCrHsd	170	+		+	27
SCID	C.B-17/IcrHan [®] Hsd-Prkdc ^{scid}	883		+ ¹	+	26
	C.B-17/IcrHsd-Prkdc ^{scid}	182	+			26
SCID/Beige	C.B-17/IcrHsd-Prkdc ^{scid} Lys ^{tg-j}	186	+		+	26
Diabetic						
Diabetic (db/db)	BKS.Cg- + Lepr ^{db} /+Lepr ^{db} /OlaHsd	173	+			28
	BKS.Cg-Dock7 tm /+ Lepr ^{db} /OlaHsd	175	+			28
	BKS.Cg-(Lean)/OlaHsd	174	+			28
Other						
Albino C57BL/6	C57BL/6BrdCrHsd-Tyr ^c	103	+	+	+	27
GEMS MICE						
R2G2 TM	B6.129-Rag2 ^{tm1Fwa} /J2rg ^{tm1Rsky} /DwlHsd	021	+	+ ¹	+	29
B-NDG	NOD.CB17-Prkdc ^{scid} /L2rg ^{tm1} /BcgenHsd	126	+		+	30

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* Not described in this guide. We invite inquiries about items not listed. Our Client Service and Technical Service representatives are ready to discuss your special requirements. We will work with you to select the stocks and strains that best suit your needs.

Note: Certain stocks and strains are stock to order and therefore not immediately available from inventory which results in a lead time being required to reserve the animals. Please discuss with your local Client Service representative for more information

Worldwide stocks and strains

Production locations

COMMON NAME	NOMENCLATURE	CODE	US	UK	NED	PG#
HYBRID MICE **						
B6C3F1	B6C3F1/Hsd	061	+			*
	B6C3F1/OlaHsd	946			+	31
B6CBAF1	B6CBAF1/OlaHsd	045			+	32
B6D2F1	B6D2F1/Hsd	063	+			*
	B6D2F1/JRccHsd	344			+	31
CB6F1	CB6F1/Hsd	065	+			*
	CB6F1/OlaHsd	949			+	32
CD2F1	CD2F1/Hsd	060	+			32
INBRED RATS						
Brown Norway	BN/RijHsd	147	+			33
DA (Dark Agouti)	DA/OlaHsd	092			+	33
Fischer 344	F344/NHsd	010	+			34
Lewis	LEW/SsNHsd	017	+			35
Spontaneously Hypertensive	SHR/NHsd	022	+			35
Wistar Kyoto	WKY/NHsd	023	+			36
OUTBRED RATS						
Holtzman®	HsdHot:Holtzman®	003	+			*
Lister Hooded	HsdOla:LH	119		+	+	40
Long Evans	HsdBlu:LE	140	+			41
Sprague Dawley®	Hsd:Sprague Dawley® SD®	002	+	+	+	46
Wistar	Hsd:WI	001	+			41
Wistar Han®	RccHan®:WIST	168	+	+	+	37

¹ The breeding, supply and use of this strain is regulated under the Animals (Scientific Procedures) Act 1986 in the UK (EU Directive 2010/63). Supply to order in the UK is dependent on prior authority having been obtained from the Secretary of State through the UK Home Office Inspectorate. For supply outside the UK we require confirmation in writing, that the receiving establishment has the requisite authority (within that specific country) for the use of these specific animals in a research program. Animals will not be shipped without that written declaration.

* Not described in this guide. We invite inquiries about items not listed. Our Client Service and Technical Service representatives are ready to discuss your special requirements. We will work with you to select the stocks and strains that best suit your needs.

** This is a brief selection of available hybrids; any combination can be bred on demand. Any existing hybrid combination can be discontinued at any time without prior notice

Worldwide stocks and strains

Production locations

COMMON NAME	NOMENCLATURE	CODE	US	UK	NED	PG#
MUTANT RATS (Spontaneous)						
<i>Nudes</i>						
Athymic Nude	Hsd:RH-Foxn1 ^{nu}	005	+		+	41
	Hsd:RH-Foxn1 ^{nu} /Foxn1 ⁺	006	+		+	41
GEMS RATS						
Pink1	HsdSage: LE-Pink1 ^{tm1Sage}	372	+			42
Mdr1a	HsdSage: SD-Mdr1a ^{tm1Sage}	364	+			43
Mdr1a-Bcrp	HsdSage: SD-Mdr1a ^{tm1Sage} Abcg2 ^{tm1Sage}	363	+			44
HYBRID RATS						
Any hybrid combination will be bred on demand, please enquire.						
GUINEA PIGS						
Dunkin Hartley	HsdDhl:DH	459			+	48
HAMSTERS						
Golden Syrian	HsdHan®:AURA	089	+	+		47
COTTON RATS						
Cotton Rat	Hsd:Cotton Rat	201	+			47
RABBITS						
New Zealand White	HsdHra:(NZW) SPF	221	+			55
	HsdIf:NZW	444		+		49
	HsdHra:DB (SPF)	222	+			49
NONHUMAN PRIMATES						
Cynomolgus macaques	<i>M. fascicularis</i>	226/228	+			50
Rhesus macaques	<i>M. mulatta</i>	224	+			50

* Not described in this guide. We invite inquiries about items not listed. Our Client Service and Technical Service representatives are ready to discuss your special requirements. We will work with you to select the stocks and strains that best suit your needs.

Note: Certain stocks and strains are stock to order and therefore not immediately available from inventory which results in a lead time being required to reserve the animals. Please discuss with your local Client Service representative for more information

Production locations

WORLDWIDE RESEARCH SERVICES

	US	UK	NED	ITA	ESP
TEKLAD GLOBAL DIETS® AND BEDDING					
Standard Diets (pelleted and extruded)	✓		✓	✓	
Autoclavable Diets	✓				
Irradiated Diets	✓			✓	
Certified Diets	✓		✓	✓	
Medicated Diets	✓		✓		
Custom Research Diets	✓			✓	
Bedding	✓			✓	✓
Cage Enrichment	✓			✓	✓
Cage Liners	✓				
PRECONDITIONED MODELS					
Aging Research Models	✓	✓	✓		
Animal Model Development	✓				
Animal Identification (tattooing, implantation etc.)	✓	✓	✓		
Diabetic Induced Models (STZ induced)					
Diet-Induced Obesity Models	✓	✓	✓		
Diet Maintenance Studies	✓	✓	✓		
Custom genetically engineered rodent models	✓				
Tumor Models and Services	✓				
GENETIC TESTING SERVICES					
PCR Zygosity Testing	✓				
Inbred Strain Verification	✓				
Gene Expression	✓				
Speed Congenics	✓				
Prevalidated SNP Zygosity Testing	✓				
Prevalidated Reporter and Conditional Model Testing	✓				
SURGICAL SERVICES					
Surgical Services	✓	✓			
HEALTH MONITORING					
Serology				✓	
Bacteriology				✓	
Parasitology		✓		✓	
Pathology		✓		✓	
Molecular Biology				✓	
BIOSPECIMEN SERVICES					
Serum	✓	✓	✓		
Plasma	✓	✓	✓		
Complement	✓	✓	✓		
Tissues, Organs, Glands	✓	✓	✓		
Whole Embryo Culture Serum	✓	✓			
EGF, 2.5S and 7.0S Nerve Growth Factor	✓				
Cytokines	✓				

	US	UK	NED	ITA	ESP
PROCESSING AND CELL LINE SERVICES					
Bioburden Testing	✓				
Endotoxin Testing	✓				
Sterility Testing	✓				
Subcloning	✓				
Cell Banking	✓	✓			
Cell Line Sterility	✓			✓	
Cell Line Viability Testing	✓				
Mycoplasma Cleanup	✓				
Cell Weaning	✓				
Cell Recovery	✓				
Cell Line Isotyping	✓				
IgG Concentration Testing	✓				
CUSTOM ANTIBODY PRODUCTION					
cGMP <i>In Vivo</i> Production (Diagnostic and Therapeutic Use)	✓				
Non-cGMP <i>In Vivo</i> Production (Research Use)	✓				
<i>In Vitro</i> Monoclonal Antibody Production (cGMP and Research Use)	✓				
Research Scale <i>In Vitro</i> Monoclonal Production	✓				
Hybridoma Development	✓				
Polyclonal Antibody Production	✓				
Mouse Antibody Production (MAP) Testing	✓				
Antibody Purification	✓				
Fragmentation/Conjugation	✓				
COLONY MANAGEMENT SERVICES					
Maintenance Research Models		✓	✓		
Contract Breeding	✓	✓	✓		
Import/Export Services	✓	✓	✓	✓	✓
Quarantine		✓		✓	
FACILITY SERVICES					
Facility Management	✓	✓	✓	✓	✓
TRANSGENIC SERVICES					
Embryo Transfer	✓	✓		✓	✓
Cryopreservation	✓	✓		✓	✓
Revitalization	✓	✓		✓	✓
Sperm Cell Freezing	✓	✓		✓	✓
Biospecimen Collection	✓	✓	✓		

Although the above Research Model Services are listed by location, these are globally available.

Items Not Listed - We invite inquiries about services not listed in this overview. Our Technical Service representatives are ready to discuss your special requirements. We will work with you to select the services that best suit your needs.



MODEL CODE
215

129

NOMENCLATURE: 129S2/SvHsd (code 215)

AGE (weeks)	PRICE PER ANIMAL
3	€ 112,25
4	€ 121,70
5	€ 126,35
6	€ 133,70
7	€ 141,15
8	€ 150,60
9	€ 160,95
Over 9 weeks, add per week	€ 5,35

Black-eyed, light bellied, agouti. Developed by Dunn in 1928 from a cross of coat color stocks and a chinchilla stock from Castle.

- Characteristics
- Low preference for sweet tasting substances
- Research use
- Used in the production of targeted mutations due to the availability of several lines of embryonic stem cells.
- Used in gene targeting studies



MODEL CODE
049

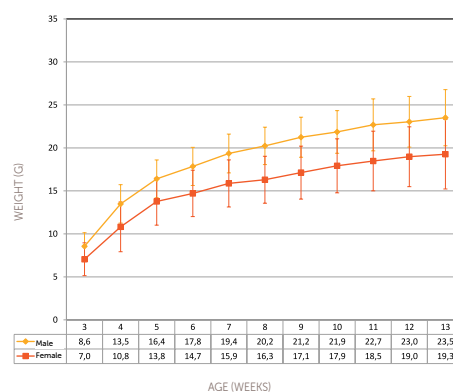
A

NOMENCLATURE: A/JOlHsd (code 049)

AGE (weeks)	PRICE PER ANIMAL
3	€ 70,20
4	€ 76,80
5	€ 85,35
6	€ 94,95
7	€ 105,70
8	€ 117,95
9	€ 131,25
Over 9 weeks, add per week	€ 14,80

Albino. From G.D.Searle to Harlan Olac, United Kingdom, in 1978; to Harlan, United States, in 1993. Harlan became Envigo in 2015, then Envigo was acquired by Inotiv in 2021.

A/JOlHsd



GROWTH CHART DATA SHOULD BE USED AS A GUIDELINE ONLY.
ANIMALS WERE BRED AND MAINTAINED ON TEKLAB GLOBAL 2018S DIET.



MODEL CODE
162

BALB/c

NOMENCLATURE: BALB/cOlaHsd

AGE (weeks)	PRICE PER ANIMAL
3	€ 18,35
4	€ 20,00
5	€ 21,45
6	€ 23,75
7	€ 25,80
8	€ 27,90
9	€ 31,45
Over 9 weeks, add per week	€ 3,55
Untimed pregnant female*	€ 153,90
Time mated female*	€ 213,65
Female with litter	€ 203,90
Proven breeder	€ 48,45
Retired breeder/Surplus	€ 28,25

* For our pregnancy policy, refer to page 93.

Albino. BALB/cOlaHsd mice originate from the Laboratory Animal Centre, Carshalton UK from the Jackson Laboratory, Bar Harbor, Maine in 1955. In 1976 to Olac (now Inotiv).

CHARACTERISTICS

- Litter average: 6.0
- Docile disposition
- Haplotype: *H-2^d*
- Experimental allergic encephalomyelitis resistant

ADDITIONAL AVAILABLE DATA

- Hematology
- Clinical chemistry

RESEARCH USE

- Cardiovascular
- Monoclonal antibody production
- Toxicology
- Pharmacology
- Aging
- Teratology
- General purpose



MODEL CODE
113

BALB/c

Biosecure Plus™ - Isolator raised, SOPF health status
NOMENCLATURE: BALB/cAnNHsd

AGE (weeks)	PRICE PER ANIMAL
3	€ 28,30
4	€ 28,90
5	€ 31,65
6	€ 36,55
7	€ 39,75
8	€ 41,35
9	€ 46,00
10	P.O.R.
11	P.O.R.
12	P.O.R.
Over 12 weeks, add per week	P.O.R.
Female with litter	P.O.R.
Retired breeder	P.O.R.

* For our pregnancy policy, refer to page <?>.

Albino. Derived from a nucleus colony obtained from the National Institutes of Health, Bethesda, Maryland.

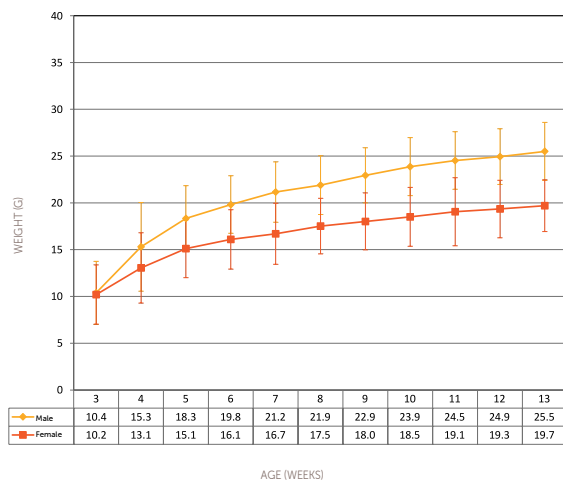
CHARACTERISTICS

- Litter average: 6.0
- Docile disposition
- Haplotype: *H-2^d*
- Experimental allergic encephalomyelitis resistant

RESEARCH USE

- Cardiovascular
- Monoclonal antibody production
- Toxicology
- Oncology
- Immunology
- Pharmacology
- Aging
- Teratology
- General purpose

BALB/cOlaHsd



GROWTH CHART DATA SHOULD BE USED AS A GUIDELINE ONLY.
ANIMALS WERE BRED AND MAINTAINED ON TEKLAD GLOBAL 2018S DIET.

Inbred mice



MODEL CODE
040

C3H

NOMENCLATURE: C3H/HeNHsd

AGE (weeks)

PRICE PER ANIMAL

3	€ 33,75
4	€ 37,00
5	€ 40,70
6	€ 45,00
7	€ 48,20
8	€ 53,10
9	€ 57,50
Over 9 weeks, add per week	€ 5,10
Untimed pregnant female*	€ 328,35
Time mated female*	€ 399,15
Female with litter	€ 436,75
Proven breeder	€ 100,65
Retired breeder/Surplus	€ 55,00

* For our pregnancy policy, refer to page 93.

Agouti. Derived from a nucleus colony obtained from the National Institutes of Health, Bethesda, Maryland.

CHARACTERISTICS

- Litter average: 5.0
- Haplotype: *H-2^k*
- Carrier of the retinal degeneration (*Pde6b^{rd1}*) mutation
- Normal response to LPS
- Highly susceptible to Anthrax toxin

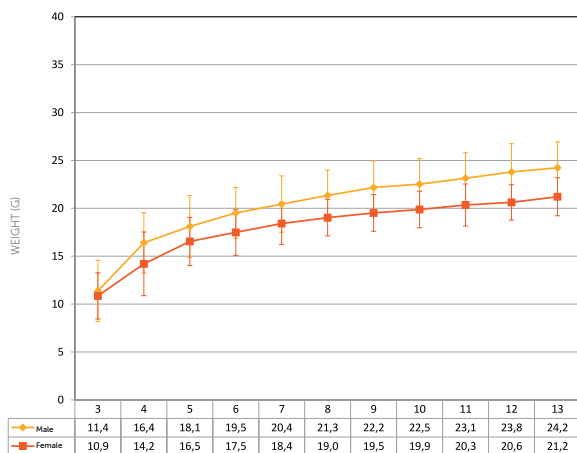
RESEARCH USE

- General purpose
- Ocular disease
- Immunology

ADDITIONAL AVAILABLE DATA

- Clinical chemistry
- Hematology

C3H/HeNHsd



AGE (WEEKS)

GROWTH CHART DATA SHOULD BE USED AS A GUIDELINE ONLY. ANIMALS WERE BRED AND MAINTAINED ON TEKLAB GLOBAL 2018S DIET.



MODEL CODE
209

CBA/Ca

NOMENCLATURE: CBA/CaOlaHsd

AGE (weeks)

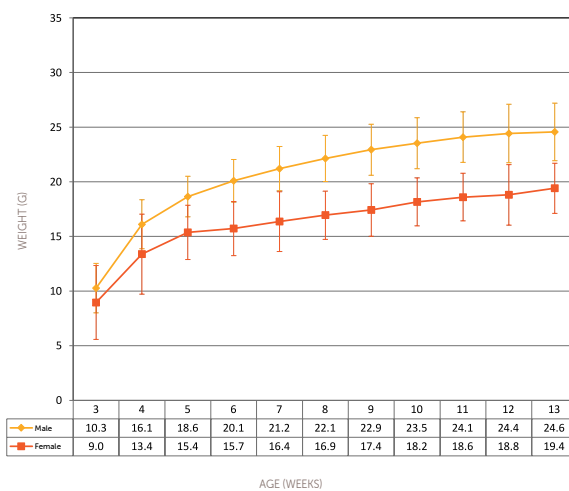
PRICE PER ANIMAL

3	€ 30,95
4	€ 34,85
5	€ 39,00
6	€ 43,60
7	€ 48,00
8	€ 52,10
9	€ 57,80
Over 9 weeks, add per week	€ 5,25
Untimed pregnant female*	€ 215,85
Time mated female*	€ 305,20
Female with litter	€ 280,85
Proven breeder	€ 77,25
Retired breeder/Surplus	€ 41,25

* For our pregnancy policy, refer to page 93.

Agouti. Obtained by the Laboratory Animal Centre, Carshalton UK from Atomic Energy Establishment, Harwell in 1956 and then to Olac in 1976 (now Inotiv).

CBA/CaOlaHsd



AGE (WEEKS)

GROWTH CHART DATA SHOULD BE USED AS A GUIDELINE ONLY. ANIMALS WERE BRED AND MAINTAINED ON TEKLAB GLOBAL 2018S DIET.



MODEL CODE
057

C57BL/6

NOMENCLATURE: C57BL/6J⁰laHsd

AGE (weeks)	PRICE PER ANIMAL
3	€ 20,45
4	€ 22,35
5	€ 24,70
6	€ 27,50
7	€ 30,40
8	€ 33,85
9	€ 37,95
Over 9 weeks, add per week	€ 4,10
Untimed pregnant female*	€ 178,90
Time mated female*	€ 243,80
Female with litter	€ 224,30
Proven breeder	€ 67,35
Retired breeder/Surplus	€ 33,85

* For our pregnancy policy, refer to page 93.

Black. C57BL/6J⁰laHsd mice originate from the Jackson Laboratory, Bar Harbor, Maine. In 1974 to the Laboratory Animal Centre, Carshalton UK. To Olac in 1983 (now Inotiv).

CHARACTERISTICS

- Litter average: 6.0
- Haplotype: *H-2^b*
- Most widely used inbred strain
- Low tumor incidence
- High preference for alcohol
- Microphthalmia
- Incidence of Hydrocephalous
- The C57BL/6J⁰laHsd subline carries a deletion at the alpha synuclein locus

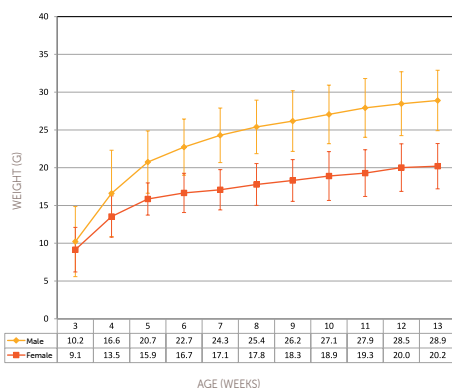
RESEARCH USE

- Background for induced and genetically modified models
- Diet induced obesity
- Toxicology
- Aging
- Cardiovascular
- Superovulation
- Immunology
- Drug addiction
- Alcoholism
- General purpose

ADDITIONAL AVAILABLE DATA

- Hematology
- Clinical chemistry

C57BL/6J⁰laHsd



GROWTH CHART DATA SHOULD BE USED AS A GUIDELINE ONLY. ANIMALS WERE BRED AND MAINTAINED ON TEKLAB GLOBAL 2018S DIET.



MODEL CODES
043, 044

C57BL/6

NOMENCLATURE: C57BL/6J⁰RccHsd (code 043)

NOMENCLATURE: C57BL/6J⁰NHsd (code 044)

AGE (weeks)	PRICE PER ANIMAL
3	€ 24,25
4	€ 27,35
5	€ 30,30
6	€ 33,75
7	€ 37,65
8	€ 41,60
9	€ 45,50
Over 9 weeks, add per week	€ 5,10
Untimed pregnant female*	€ 223,60
Time mated female*	€ 304,75
Female with litter	€ 280,40
Proven breeder	€ 84,25
Retired breeder/Surplus	€ 42,25

* For our pregnancy policy, refer to page 93.

Black. C57BL/6J⁰NHsd; Derived from a nucleus colony obtained from the National Institutes of Health, Bethesda, Maryland.

The C57BL/6J⁰RccHsd mice originate from Jackson Laboratory, Bar Harbor, Maine and were moved in 1973 to RCC Ltd. (formerly Ibm and BRL) in Füllinsdorf, Switzerland. To Harlan Laboratories through acquisition in 2004. Harlan became Envigo in 2015, then Envigo was acquired by Inotiv in 2021.

CHARACTERISTICS

- Litter average: 6.0
- Haplotype: *H-2^b*
- Most widely used inbred strain
- Low tumor incidence
- High preference for alcohol
- Microphthalmia
- Incidence of Hydrocephalous
- The C57BL/6J⁰RccHsd subline does not carry the Nnt (nicotinamide nucleotide transhydrogenase) gene – deletion
- The C57BL/6J⁰NHsd subline carries a retinal degeneration 8 mutation (*rd8*)

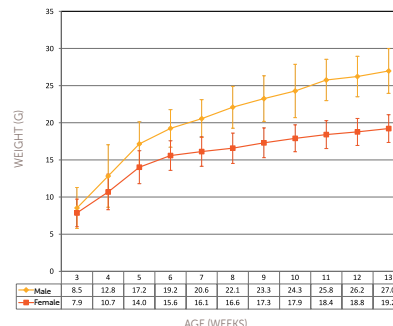
RESEARCH USE

- Background for induced and genetically modified models
- Diet induced obesity
- Toxicology
- Aging
- Cardiovascular
- Superovulation
- Immunology
- Drug addiction
- Alcoholism
- General purpose

ADDITIONAL AVAILABLE DATA

- Hematology
- Clinical chemistry

C57BL/6J⁰RccHsd



GROWTH CHART DATA SHOULD BE USED AS A GUIDELINE ONLY. ANIMALS WERE BRED AND MAINTAINED ON TEKLAB GLOBAL 2018S DIET.



MODEL CODE
044

NEW

C57BL/6 DIO

NOMENCLATURE: C57BL/6NHsd

AGE (WEEKS)

PRICE PER ANIMAL

	MALE
7-8	P.O.R.
8-9	P.O.R.
9-10	P.O.R.
10-11	P.O.R.
11-12	P.O.R.
12-13	P.O.R.
13-14	P.O.R.
14-15	P.O.R.
15-16	P.O.R.
16-17	P.O.R.
17-18	P.O.R.
18-19	P.O.R.
19-20	P.O.R.
20-21	P.O.R.
21-22	P.O.R.
22-23	P.O.R.
Over 22 weeks, add/week	P.O.R.
Female with litter	P.O.R.
Retired breeder	P.O.R.

* For our pregnant animal policy, refer to page 91.

Black. Derived from a nucleus colony obtained from the National Institutes of Health, Bethesda, Maryland.

CHARACTERISTICS

- Obese phenotype
- Glucose intolerance
- Insulin intolerance
- Elevated blood glucose
- Dyslipidemia
- Liver steatosis

RESEARCH USE

- Obesity
- Metabolic disease
- Inflammatory disease
- Cardiovascular disease
- Liver disease



MODEL CODE
112

C57BL/6

Biosecure Plus™ - Isolator raised, SOPF health status

NOMENCLATURE C57BL/6NHsd

AGE (weeks)

PRICE PER ANIMAL

3	€ 37,40
4	€ 42,20
5	€ 46,75
6	€ 52,00
7	€ 58,00
8	€ 64,10
9	€ 79,35
10	P.O.R.
11	P.O.R.
12	P.O.R.
Over 12 weeks, add per week	P.O.R.
Female with litter	P.O.R.
Retired breeder	P.O.R.

* For our pregnancy policy, refer to page 93.

Black. Derived from a nucleus colony obtained from the National Institutes of Health, Bethesda, Maryland.

CHARACTERISTICS

- Litter average: 6.0
- Haplotype: *H-2^b*
- Most widely used inbred strain
- Low tumor incidence
- High preference for alcohol
- Microphthalmia
- Incidence of Hydrocephalous

RESEARCH USE

- Background for induced and genetically modified models
- Diet induced obesity
- Toxicology
- Aging
- Cardiovascular
- Superovulation
- Immunology
- Oncology



MODEL CODE
105

DBA/1

NOMENCLATURE: DBA/10laHsd

AGE (weeks)	PRICE PER ANIMAL
3	€ 51,80
4	€ 58,95
5	€ 66,40
6	€ 73,80
7	€ 80,45
8	€ 87,70
9	€ 97,00
Over 9 weeks, add per week	€ 8,30
Untimed pregnant female*	€ 305,05
Time mated female*	€ 422,00
Female with litter	€ 425,45
Proven breeder	€ 105,80
Retired breeder/Surplus	€ 55,00

* For our pregnancy policy, refer to page 93.

Dilute brown, non-agouti. Originally developed by Little. Acquired by Laboratory Animals Centre, Carshalton, United Kingdom in 1955; to Olac (now Inotiv) in 1979.

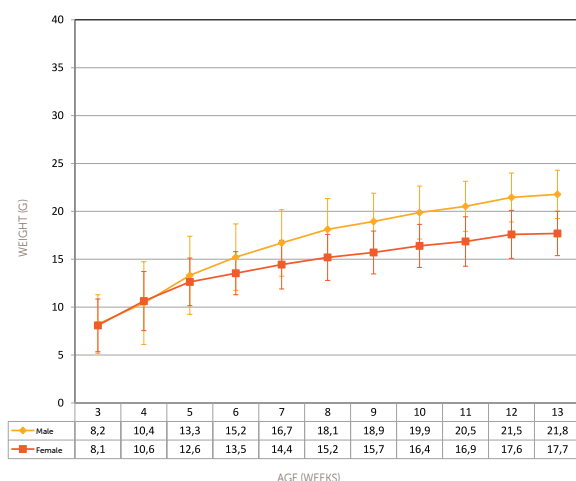
CHARACTERISTICS

- Litter average: 4.5
- Haplotype: *H-2^d*

RESEARCH USE

- Adjuvant-induced arthritis
- Immunology
- Inflammation

DBA/10laHsd



GROWTH CHART DATA SHOULD BE USED AS A GUIDELINE ONLY.
ANIMALS WERE BRED AND MAINTAINED ON TEKLAB GLOBAL 2018S DIET.



MODEL CODES
870, 343

DBA/2

NOMENCLATURE: DBA/20laHsd (code 870)

NOMENCLATURE: DBA/2JRccHsd (code 343)

AGE (weeks)	PRICE PER ANIMAL
3	€ 31,40
4	€ 33,50
5	€ 35,55
6	€ 38,30
7	€ 42,15
8	€ 44,25
9	€ 48,80
Over 9 weeks, add per week	€ 6,50
Untimed pregnant female*	€ 365,80
Time mated female*	€ 506,05
Female with litter	€ 495,60
Proven breeder	€ 142,45
Retired breeder/Surplus	€ 71,65

* For our pregnancy policy, refer to page 93.

Dilute brown, non-agouti. Originally developed by Little. Acquired by Laboratory Animal Centre, Carshalton UK. In 1972 to Olac (now Inotiv).

The DBA/2JRccHsd mice originate from Jackson Laboratory, Bar Harbor, Maine and were moved in 1974 to RCC Ltd. (formerly Ibm and BRL) in Füllinsdorf, Switzerland. To Harlan Laboratories through acquisition in 2004. Harlan became Envigo in 2015, then Envigo was acquired by Inotiv in 2021.

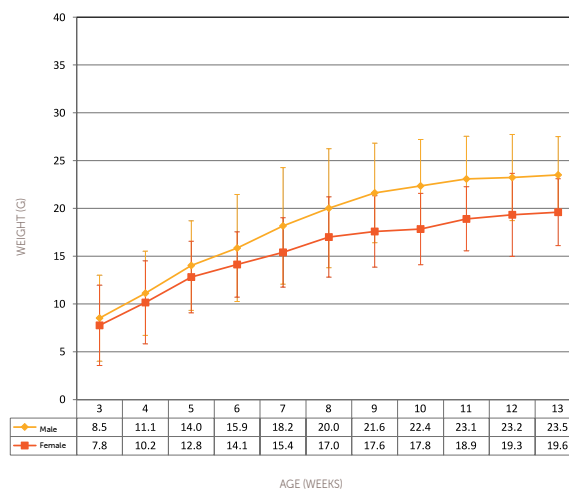
CHARACTERISTICS

- Litter average: 4.5
- Haplotype: *H-2^d*
- Dystrophic myocardial calcinosis

RESEARCH USE

- Progressive hearing loss
- Audiogenic seizures

DBA/2JRccHsd



GROWTH CHART DATA SHOULD BE USED AS A GUIDELINE ONLY.
ANIMALS WERE BRED AND MAINTAINED ON TEKLAB GLOBAL 2018S DIET.

Inbred mice



MODEL CODE
862

FVB

NOMENCLATURE: FVB/NHan®Hsd

AGE (weeks)

PRICE PER ANIMAL

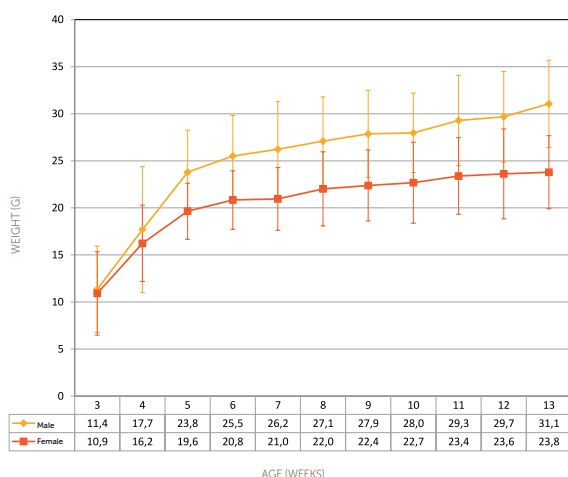
3	€ 22,80
4	€ 25,70
5	€ 28,60
6	€ 32,35
7	€ 36,25
8	€ 39,75
9	€ 45,45
Over 9 weeks, add per week	€ 5,35
Untimed pregnant female*	€ 215,00
Time mated female*	€ 268,80
Female with litter	€ 268,10
Proven breeder	€ 65,85
Retired breeder/Surplus	€ 33,05

* For our pregnancy policy, refer to page 93.

Albino. Derived from a nucleus colony obtained from the National Institutes of Health, Bethesda, Maryland, in 1988. In 1994 to Harlan Laboratories through acquisition of Central Institute for Laboratory Animal Breeding (ZfV), Hannover, Germany. Harlan became Envigo in 2015, then Envigo was acquired by Inotiv in 2021.

Han® is a registered trademark of Inotiv.

FVB/NHan®Hsd



GROWTH CHART DATA SHOULD BE USED AS A GUIDELINE ONLY.
ANIMALS WERE BRED AND MAINTAINED ON TEKLAB GLOBAL 2018S DIET.



MODEL CODES
954, 956

SAM

NOMENCLATURE: SAMP8/TaHsd (code 954)

NOMENCLATURE: SAMR1/TaHsd (control) (code 956)

AGE (weeks)

PRICE PER ANIMAL

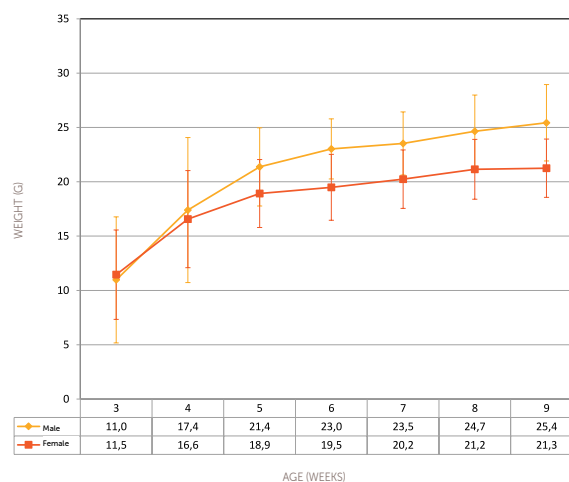
4	€ 385,15
5	€ 404,75
6	€ 429,95
7	€ 451,95
Over 7 weeks, add per week	€ 19,95

Albino. SAM models were developed from AKR/J by Kyoto University. Five litters with severe senescence were selected to further propagate and examine these characteristics. Litters that showed normal aging were selected as a senescence-resistant series (R-series). The genetic background of the SAM mice became suspect after the pathological findings were different from the AKR/J mouse. Each SAM model is genetically different. Each SAM colony was acquired by Harlan from Takeda Chemical Ltd. in 2002. Harlan became Envigo in 2015, then Envigo was acquired by Inotiv in 2021.

RESEARCH USE

- Accelerated senescence studies
- Aging process
- Geriatric pathogenesis
- Age-dependent disorders
- Senile amyloidosis (apolipoprotein A-II)
- Senile osteoporosis
- Impaired immune response
- Hyperinflation of the lungs
- Hearing impairment
- Deficits in learning and memory
- Emotional disorders
- Brain atrophy

SAMP8/TaHsd



GROWTH CHART DATA SHOULD BE USED AS A GUIDELINE ONLY.
ANIMALS WERE BRED AND MAINTAINED ON TEKLAB GLOBAL 2018S DIET.

Inbred and aged mice



MODEL CODE
052

SJL

NOMENCLATURE: SJL/JCrHsd

AGE (weeks)

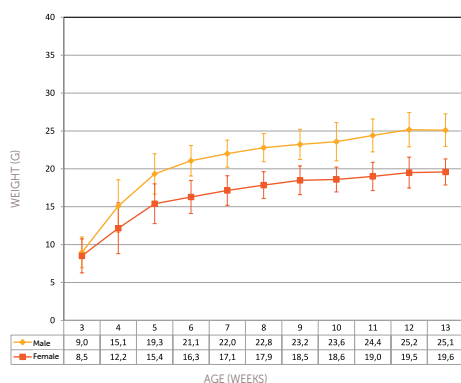
PRICE PER ANIMAL

3	€ 97,60
4	€ 103,10
5	€ 116,45
6	€ 119,80
7	€ 126,35
8	€ 152,65
9	€ 167,85
Over 9 weeks, add per week	€ 9,30
Untimed pregnant female*	€ 866,05
Female with litter	€ 1.018,75

* For our pregnancy policy, refer to page 93.

Albino. SJL/JCrHsd from the Jackson Laboratories, Bar Harbor, Maine, to National Institutes of Health, Frederick, Maryland in 1983 to Harlan in 1987. Harlan became Envigo in 2015, then Envigo was acquired by Inotiv in 2021.

SJL/JCrHsd



GROWTH CHART DATA SHOULD BE USED AS A GUIDELINE ONLY.
ANIMALS WERE BRED AND MAINTAINED ON TEKLAB GLOBAL 2018S DIET.

Additional strains of inbred mice

STRAINS

AGE (weeks)

PRICE PER ANIMAL

CBA/JCrHsd (code 055)	3	€ 64,35
NIH/OlaHsd (code 059)	3	€ 34,05
Over 3 weeks, add per week		€ 21,70
BALB/cAnNHsd (code 047)	3	€ 41,45
C57BL/KaLwRijHsd (code 940)	3	€ 68,50
Over 3 weeks, add per week		€ 14,10

Cohorts of the below listed male and female mice are reserved each month for the intended purpose of providing aged animals for research. Pricing of aged animals from inventory is listed below. If the requested aged animals are not available from our inventory, Inotiv will age animals to accommodate your research requirements.

Aged mice

NOMENCLATURE: C57BL/6J RccHsd (code 043)

AGE (months)

PRICE PER ANIMAL

3	€ 44,30
4	€ 58,65
5	€ 72,25
6	€ 86,55
7	€ 99,75
8	€ 113,80
9	€ 126,65
10	€ 140,65
11	€ 153,00
12	€ 166,80
13	€ 185,30
14	€ 202,25
15	€ 219,00
16	€ 236,10
17	€ 253,05
18	€ 269,80
Over 18 months, add per month	€ 20,95
Over 21 months, add per month	€ 25,10

RESEARCH USE

- Memory
- Osteoarthritis
- Neoplasia
- Immune response
- Longevity
- Vision and hearing
- Motor skills
- Renal degeneration
- Age-associated pathology
- Metabolism
- Neurobiology
- Cardiovascular
- Reproductive senescence

COMMON AGE-ASSOCIATED CONDITIONS INCLUDE:

- Hair loss
- Loss of motor skills and sensory perception
- Presence of spontaneous tumors
- Reduced immunologic and physiologic function
- Loss of vision, e.g. retinal degeneration, development of cataracts

When planning for your aged animal requirements, please consider the need to reserve extra animals on your order to replace any losses due to natural causes.

Outbred mice



MODEL CODE
030

ICR (CD-1®)

NOMENCLATURE: Hsd:ICR (CD-1®)

WEIGHT (g)

PRICE PER ANIMAL

1-10	€ 7,25
11-15	€ 7,60
16-20	€ 8,10
21-25	€ 8,65
26-30	€ 9,45
Over 6 weeks, add per week	€ 5,40
Untimed pregnant female*	€ 73,60
Time mated female*	€ 111,25
Female with litter	€ 118,20
Proven breeder	€ 43,05
Retired breeder/Surplus	€ 6,90

* For our pregnancy policy, refer to page 93.

Albino. Derived from animals from Charles River Laboratories, Wilmington, Massachusetts.

CD-1® is a registered trademark of Charles River Laboratories, USA

CHARACTERISTICS

- Litter average: 11.5
- Docile disposition
- Most widely used outbred mouse
- Excellent reproductive and maternal characteristics
- High incidence of retinal degeneration (*Pde6brd*)

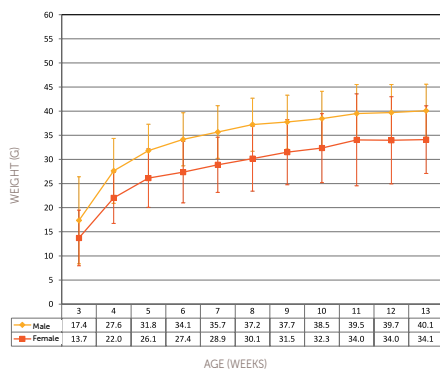
RESEARCH USE

- Oncology
- Toxicology
- Vaccines
- Aging
- Teratology
- General purpose

ADDITIONAL AVAILABLE DATA

- Hematology
- Clinical chemistry
- Two-year growth and survival
- Organ weights

Hsd:ICR (CD-1®)



GROWTH CHART DATA SHOULD BE USED AS A GUIDELINE ONLY. ANIMALS WERE BRED AND MAINTAINED ON TEKLAB GLOBAL 2018S DIET.



MODEL CODE
275

NMRI

NOMENCLATURE: HsdWin:NMRI

WEIGHT (g)

PRICE PER ANIMAL

1-10	€ 7,45
11-15	€ 7,75
16-20	€ 8,40
21-25	€ 9,20
26-30	€ 10,25
Over 6 weeks, add per week	€ 4,25
Untimed pregnant female*	€ 67,10
Time mated female*	€ 78,00
Female with litter	€ 84,10
Proven breeder	€ 16,90
Retired breeder/Surplus	€ 9,30

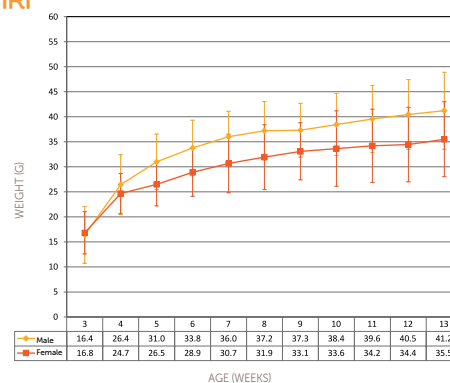
* For our pregnancy policy, refer to page 93.

Albino. From Naval Medical Research Institute in 1958 to Central Institute for Laboratory Animal Breeding (ZfV), Hannover, Germany. In 1981 to Winkelmann, now Inotiv.

ADDITIONAL AVAILABLE DATA

- Hematology
- Clinical chemistry
- Organ weights

HsdWin:NMRI



GROWTH CHART DATA SHOULD BE USED AS A GUIDELINE ONLY. ANIMALS WERE BRED AND MAINTAINED ON TEKLAB GLOBAL 2018S DIET.

Additional stocks of outbred mice

STOCK

AGE (weeks)

PRICE PER ANIMAL

Hsd:ND4 (code 032)	3	€ 15,75
Hsd:NIHS (code 035)	3	€ 33,55
Hsd:Ola:TO (code 876)	3	€ 17,50
Over 3 weeks, add per week		€ 4,25

Proven performance. Globally referenced.

Researchers choose Inotiv oncology models for tumor uptake and growth. Our models have been extensively referenced by leading institutions around the world.

MODEL	PAGE	HAIR	T CELLS	B CELLS	NK CELLS
Athymic Nude Mouse	24	No	Nonfunctional	Functional	Functional
SCID Mouse	26	Yes	Nonfunctional	Nonfunctional	Functional
SCID/Beige Mouse	26	Yes	Nonfunctional	Nonfunctional	Impaired
NOD.SCID Mouse	27	Yes	Nonfunctional	Nonfunctional	Impaired
Athymic Nude Rat	41	No	Nonfunctional	Functional	Functional
Rag2 Rat	*	Yes	Nonfunctional	Nonfunctional	Functional
R2G2™ Mouse	29	Yes	Nonfunctional	Nonfunctional	Nonfunctional
B-NDG Mouse	30	Yes	Nonfunctional	Nonfunctional	Nonfunctional

Models

Global availability of high-quality models with proven performance in tumor growth.

Pages 24-27, 41

Diets

Largest global provider of lab animal diets designed to minimize research variables.

Pages 58

Services

Custom model generation, genetic testing, and antibody production.

Pages 70, 81, 89-98

Choose the right rodent model for your oncology research.

Below is a representation of the cell lines used successfully with Inotiv models.

RODENT TISSUE	CELL LINES	NUDE MICE	SCID MICE	NUDE RATS	CS7 MICE
Brain (rat glioma)	C6 ^{58, 59, 78, 140, 180}	+	+		
Liver	MC38-Luc1 ³⁸⁷				+
Lung (murine)	LL2 ¹⁰	+			
Lymphoma	E.G7-OVA ³⁷³				+
Melanoma (murine)	B16F10 ^{35, 36, 250}	+			

PATIENT-DERIVED TUMORS (HUMAN TISSUE)	CELL LINES	NUDE MICE	SCID MICE	NUDE RATS
Brain	(PDX) ²⁷¹	+		
Breast	HBCX 1 ²⁷⁰	+		
	HBCX 6 ²⁷⁰	+		
	HBCX 7 ²⁷⁰	+		
	HBCX 9 ²⁷⁰	+		
	TNBC (MC1) ²⁷³		+	
	MC1 ²⁷⁴		+	
	BMC-2147 ²⁷⁴		+	
Liver	AKH23 ³⁰⁷		+	
	KFJ18 ³⁰⁷		+	
Lung	(NSCLC PDX) ²⁷²		+	
Pancreatic	JH033 ²⁷²	+		

For access to a full listing and references* from peer-reviewed journals, please visit [inotiv.com/onco](https://www.inotiv.com/onco)

Evaluate our tumor growth rates by visiting our online library of *in vivo* tumor growth data at [inotiv.com/tumor](https://www.inotiv.com/tumor)

* Superscript numbers correspond to publication references on the online cell line reference tool.

HUMAN TISSUE	CELL LINES	NUDE MICE	SCID MICE	NUDE RATS
Bladder	KU-7 ^{148, 149, 150, 151}	+		
	T24 ⁵²			+
Brain	A-172 ¹⁹⁸	+		
	G55 ³			+
	HTLA-230 ^{5, 125}	+	+	
	SH-SY5Y ²			+
	TB10 ²⁰⁰	+		
	U251 ^{81, 202}	+		
	U251 MG ^{198, 199}	+		
	U251-NG2 ^{1, 285}	+		
	U87 ^{71, 81, 117, 173, 196}	+	+	
	U87ΔEGFR ¹⁹⁷	+		
	U87 MG ^{4, 78, 80, 83, 133, 134, 164, 195, 198, 201, 205, 206, 209, 224, 249}	+	+	+
	U87Fluc ^{79, 82}	+		
	U87MG.wt EGFR ²⁰³	+		
	U87-TARTK ²⁰⁸		+	
	U138MG ^{203, 266}	+	+	
	U373 ²⁰⁷			+

HUMAN TISSUE (CANCER STEM CELLS)	CSC DESIGNATION	NUDE MICE	SCID MICE	NUDE RATS
Brain	BTSC83 ²⁰⁰	+		
	LA-N-5 ²³¹	+		
	NGC-407-GFP ²⁰⁶			+
	U87-SC ²³²	+		
Breast	2LMP (MDA-MB-231 subclone) ²³⁴		+	
	MCF-7 (CSC-like) ²³⁶	+		
	MCF-7 (mammospheres) ²³⁵	+		
	SUM159 ²³⁴		+	
Lung	A549 ¹⁰⁸	+		
	H1299 ¹⁰⁸	+		
Ovarian	SKOV-3 (spherical cells) ²¹³	+		
Prostate	DU-145 (spheroid cells) ²³³		+	

Mutant mice - Nudes



MODEL CODES
069, 070

Athymic Nude

NOMENCLATURE: Hsd:Athymic Nude-*Foxn1*^{nu} (code 069)

NOMENCLATURE: Hsd:Athymic Nude-*Foxn1*^{nu}/*Foxn1*⁺ (code 070)

PRICE PER ANIMAL

AGE (weeks)	nu/nu	nu/+
4	€ 71,50	€ 21,40
5	€ 79,55	€ 25,55
6	€ 89,60	€ 29,75
7	€ 98,25	€ 34,45
8	€ 107,40	€ 39,55
9	€ 116,75	€ 45,05
Over 9 weeks, add per week	€ 8,75	€ 5,95
Untimed pregnant female*	-	€ 361,75
Female with litter	-	€ 361,75
Proven breeder	-	P.O.R.
Retired breeder/Surplus	-	P.O.R.

* For our pregnancy policy, refer to page 93.

Albino. Derived from a nucleus colony obtained from the National Cancer Institute, Frederick, Maryland.

This immunodeficient model was originally thought to be a Balb/c congenic, but was later reported by NCI to be outbred.

CHARACTERISTICS

- The *nu* allele on chromosome 11 is an autosomal recessive mutation
- Dysfunctional rudimentary thymus
- Phenotypically hairless (sparse hair growth possible)
- T-cell deficient
- B-cells function normal
- No generation of cytotoxic effector cells
- No graft versus host response
- Foxn1*^{nu}/*Foxn1*⁺ heterozygotes do not show partial expression of the *nu* phenotype

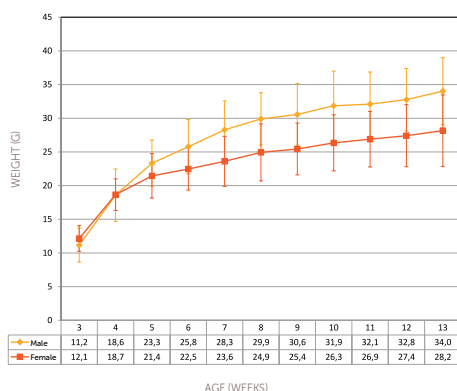
RESEARCH USE

- Oncology
- Transplantation
- Tumor cell growth
- Immunology
- Autoimmune disease
- Antibody production
- Sentinel model - heterozygous *Foxn1*^{nu}/*Foxn1*⁺

ADDITIONAL AVAILABLE DATA

- Hematology
- Clinical chemistry
- Proven model with extensive references (see page 22)

Hsd:Athymic Nude-*Foxn1*^{nu}



GROWTH CHART DATA SHOULD BE USED AS A GUIDELINE ONLY.
ANIMALS WERE BRED AND MAINTAINED ON TEKLAD GLOBAL 2919 DIET.



MODEL CODES
889, 890

nMRI Nude

NOMENCLATURE: HsdCpb:nMRI-*Foxn1*^{nu} (code 889)

NOMENCLATURE: HsdCpb:nMRI-*Foxn1*^{nu}/*Foxn1*⁺ (code 890)

PRICE PER ANIMAL

AGE (weeks)	nu/nu	nu/+
4	€ 89,50	€ 51,45
5	€ 98,70	€ 55,30
6	€ 107,40	€ 61,75
7	€ 115,75	€ 66,85
8	€ 124,20	€ 72,90
9	€ 136,20	€ 80,65
Over 9 weeks, add per week	€ 6,80	€ 6,85
Female with litter	P.O.R.	€ 303,35
Proven breeder	P.O.R.	€ 100,95
Retired breeder/Surplus	P.O.R.	€ 51,50

Albino. Derived from a nucleus colony obtained from the Laboratory Animals Centre, Carshalton, UK. To TNO-CPB (now Inotiv) in 1972.

CHARACTERISTICS

- The *nu* allele on chromosome 11 is an autosomal recessive mutation
- Dysfunctional rudimentary thymus
- Phenotypically hairless (sparse hair growth possible)
- T-cell deficient
- B-cells function normal
- No generation of cytotoxic effector cells
- No graft versus host response
- Foxn1*^{nu}/*Foxn1*⁺ heterozygotes do not show partial expression of the *nu* phenotype

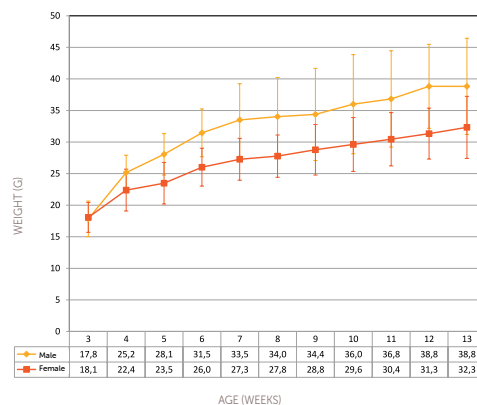
RESEARCH USE

- Oncology
- Transplantation
- Tumor cell growth
- Immunology
- Autoimmune disease
- Antibody production
- Sentinel model - heterozygous *Foxn1*^{nu}/*Foxn1*⁺

ADDITIONAL AVAILABLE DATA

- Hematology
- Clinical chemistry
- Proven model with extensive references (see page 22)

HsdCpb:nMRI-*Foxn1*^{nu}



GROWTH CHART DATA SHOULD BE USED AS A GUIDELINE ONLY.
ANIMALS WERE BRED AND MAINTAINED ON TEKLAD GLOBAL 2919 DIET.

Mutant mice - Nudes



MODEL CODES
165, 886

BALB/c Nude

NOMENCLATURE: BALB/cOlaHsd-Foxn1^{nu} (code 165)

NOMENCLATURE: BALB/cOlaHsd-Foxn1^{nu}/Foxn1⁺
(code 886)

PRICE PER ANIMAL

AGE (weeks)	nu/nu	nu/+
4	€ 141,30	€ 33,55
5	€ 145,35	€ 39,85
6	€ 151,45	€ 46,55
7	€ 159,00	€ 53,90
8	€ 165,65	€ 62,75
9	€ 172,25	€ 72,80
Over 9 weeks, add per week	€ 7,80	€ 9,95
Female with litter	-	€ 563,65
Proven breeder	-	€ 133,45
Retired breeder/Surplus	-	€ 68,00

Albino. Institute of Animal Genetics, Edinburgh to Laboratory Animals Centre, Carshalton, to GD Searle, High Wycombe, to Olac (now Inotiv) in 1978.

CHARACTERISTICS

- The *nu* allele on chromosome 11 is an autosomal recessive mutation
- Dysfunctional rudimentary thymus
- Phenotypically hairless (sparse hair growth possible)
- T-cell deficient
- B-cells function normal
- No generation of cytotoxic effector cells
- No graft versus host response
- *Foxn1^{nu}/Foxn1⁺* heterozygotes do not show partial expression of the *nu* phenotype

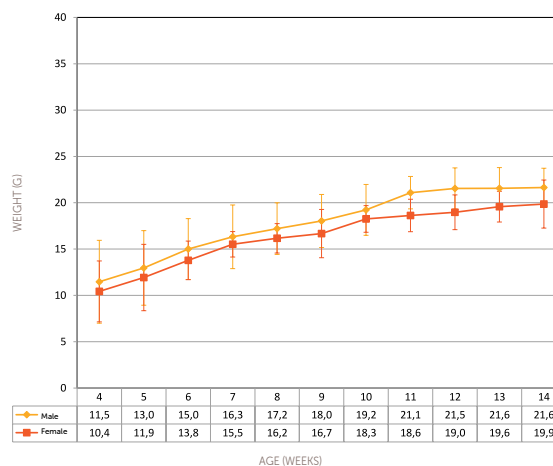
RESEARCH USE

- Oncology
- Transplantation
- Tumor cell growth
- Immunology
- Autoimmune disease
- Antibody production
- Sentinel model - heterozygous *Foxn1^{nu}/Foxn1⁺*

ADDITIONAL AVAILABLE DATA

- Hematology
- Clinical chemistry
- Proven model with extensive references (see page 22)

BALB/cOlaHsd-Foxn1^{nu}



GROWTH CHART DATA SHOULD BE USED AS A GUIDELINE ONLY.
ANIMALS WERE BRED AND MAINTAINED ON TEKLAD GLOBAL 2919 DIET.

Mutant mice - SCIDs



MODEL CODES
883, 182

SCID

NOMENCLATURE: C.B-17/lcrHan[®]Hsd-Prkdc^{scid} (code 883)

NOMENCLATURE: C.B-17/lcrHsd-Prkdc^{scid} (code 182)

AGE (weeks)

PRICE PER ANIMAL

4	€ 105,40
5	€ 108,50
6	€ 113,00
7	€ 119,25
8	€ 124,70
9	€ 130,40
Over 9 weeks, add per week	€ 4,85

Albino. Harlan acquired from the Fox Chase Cancer Center, Philadelphia, Pennsylvania, in 1991. Harlan became Envigo in 2015, then Envigo was acquired by Inotiv in 2021.

Han[®] is a registered trademark of Inotiv.

CHARACTERISTICS

- Autosomal recessive, single nucleotide polymorphism within *Prkdc* gene on chromosome 16
- Severe combined immunodeficiency affecting T- and B-cell development
- Natural Killer (NK) cell, macrophage and granulocyte cell numbers and function are normal
- As SCID mice age, a variable percentage become "leaky" from the spontaneous development of functional T- and B-lymphocytes
- Highly susceptible to opportunistic viral and bacterial infection

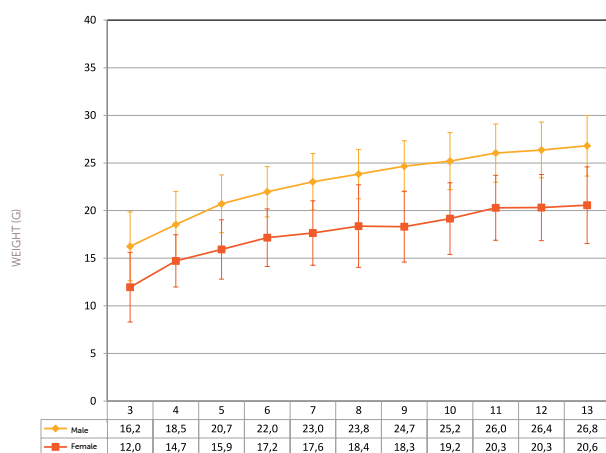
RESEARCH USE

- Oncology
- Transplantation
- Tumor cell growth
- Immunology

ADDITIONAL AVAILABLE DATA

- Proven model with extensive references (see page 22)

C.B-17/lcrHan[®]Hsd-Prkdc^{scid}



GROWTH CHART DATA SHOULD BE USED AS A GUIDELINE ONLY.
ANIMALS WERE BRED AND MAINTAINED ON TEKLAB GLOBAL 2918 DIET.



MODEL CODE
186

SCID/Beige

NOMENCLATURE: C.B-17/lcrHsd-Prkdc^{scid} Lyst^{bg-J}

AGE (weeks)

PRICE PER ANIMAL

4	€ 124,15
5	€ 128,80
6	€ 133,90
7	€ 139,85
8	€ 144,35
9	€ 152,50
Over 9 weeks, add per week	€ 6,55

Albino. Harlan acquired from the Fox Chase Cancer Center, Philadelphia, Pennsylvania, in 1991. Harlan became Envigo in 2015, then Envigo was acquired by Inotiv in 2021.

CHARACTERISTICS

- Autosomal recessive, single nucleotide polymorphism within *Prkdc* gene on chromosome 16
- Autosomal recessive, *beige* (*bg-J*) mutation on chromosome 13
- Severe combined immunodeficiency affecting T- and B-cell development
- Severe lymphopenia
- Diminished Natural Killer (NK) cell activity relative to other SCID models
- Rudimentary thymus
- "Leaky" phenotype significantly suppressed relative to other SCID models
- Highly susceptible to opportunistic viral and bacterial infection

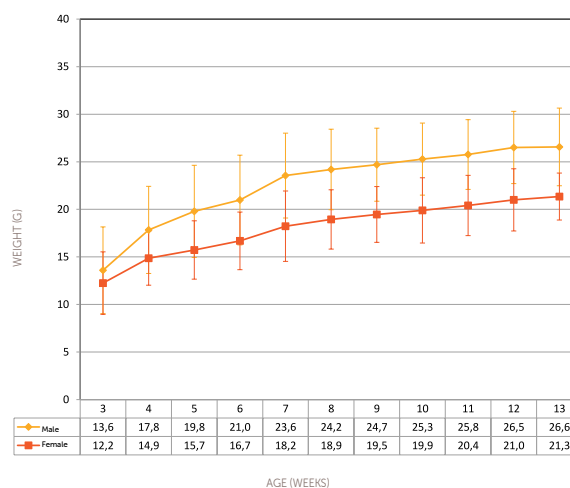
RESEARCH USE

- Oncology
- Teratology
- Transplantation
- Tumor cell growth
- Immunology

ADDITIONAL AVAILABLE DATA

- Proven model with extensive references (see page 22)

C.B-17/lcrHsd-Prkdc^{scid} Lyst^{bg-J}



GROWTH CHART DATA SHOULD BE USED AS A GUIDELINE ONLY.
ANIMALS WERE BRED AND MAINTAINED ON TEKLAB GLOBAL 2918 DIET.

Mutant mice - SCIDs, Other



MODEL CODE
170

NOD.SCID

NOMENCLATURE: NOD.CB17-*Prkdc^{scid}*/NCrHsd

AGE (weeks)

PRICE PER ANIMAL

4	€ 149,55
5	€ 154,05
6	€ 158,85
7	€ 163,85
8	€ 169,90
9	€ 176,55
Over 9 weeks, add per week	€ 7,00

Albino. Received by National Cancer Institute, Frederick, Maryland in 2004 from National Institutes of Health, Bethesda, Maryland. Harlan Laboratories acquired from National Cancer Institute in 2006. Harlan became Envigo in 2015, then Envigo was acquired by Inotiv in 2021.

CHARACTERISTICS

- Autosomal recessive, single nucleotide polymorphism within *Prkdc* gene on chromosome 16
- Severe combined immunodeficiency affecting T- and B-cell development
- Natural Killer (NK) cell, macrophage and granulocyte cell numbers and function are reduced
- As SCID mice age, a variable percentage become "leaky" from the spontaneous development of functional T- and B-lymphocytes
- Highly susceptible to opportunistic viral and bacterial infection

- Development of autoimmune diabetes does not occur due to severe combined immunodeficiency
- Spontaneous thymic lymphomas

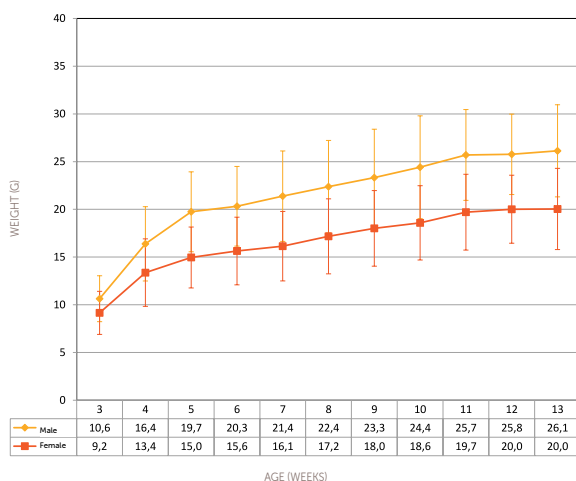
RESEARCH USE

- Oncology
- Transplantation
- Tumor cell growth
- Immunology

ADDITIONAL AVAILABLE DATA

- Hematology
- 12-week growth
- Proven models with extensive references (see page 22)

NOD.CB17-*Prkdc^{scid}*/NCrHsd



GROWTH CHART DATA SHOULD BE USED AS A GUIDELINE ONLY. ANIMALS WERE BRED AND MAINTAINED ON TEKLAB GLOBAL 2918 DIET.



MODEL CODE
103

Albino C57BL/6

NOMENCLATURE: C57BL/6BrdCrHsd-*Tyr^c*

AGE (weeks)

PRICE PER ANIMAL

4	€ 63,10
5	€ 68,35
6	€ 74,95
7	€ 81,50
8	€ 88,95
9	€ 98,20
Over 9 weeks, add per week	€ 8,75

Albino. From Allan Bradley at Baylor College of Medicine to National Cancer Institute (NCI) in 2000; to Harlan Laboratories in 2008. Harlan became Envigo in 2015, then Envigo was acquired by Inotiv in 2021.

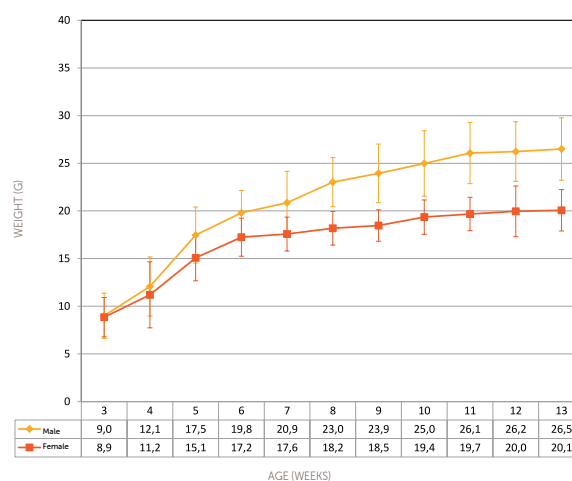
CHARACTERISTICS

- Contains a mutation in the c (*tyrosinase*) gene
- Litter average: 6.5
- Haplotype: *H-2^b*

RESEARCH USE

- Source of albino C57BL/6 embryos for chimera generation
- Ovarian transfer

C57BL/6BrdCrHsd-*Tyr^c*



GROWTH CHART DATA SHOULD BE USED AS A GUIDELINE ONLY. ANIMALS WERE BRED AND MAINTAINED ON TEKLAB GLOBAL 2918 DIET.

Mutant mice - Diabetic



MODEL CODES
173, 174

Diabetic (db/db)

NOMENCLATURE: BKS.Cg- + *Lepr^{db}*/+ *Lepr^{db}*/OlaHsd (code 173)

NOMENCLATURE: BKS.Cg-(lean)/OlaHsd (code 174)

PRICE PER ANIMAL

AGE (weeks)	db/db	lean*
5	€ 270,60	€ 122,10
6	€ 281,20	€ 130,20
7	€ 287,05	€ 138,60
8	€ 295,70	€ 146,40
9	€ 304,80	€ 157,60
Over 9 weeks, add per week	€ 12,20	€ 8,60
Female with litter	-	P.O.R.
Proven breeder	-	P.O.R.
Retired breeder/Surplus	-	P.O.R.

Black or misty. From Dunn Nutritional Laboratory, Cambridge, United Kingdom; to Olac, United Kingdom, in 1979; to Harlan, United States in 2000. Harlan became Envigo in 2015, then Envigo was acquired by Inotiv in 2021.

Additional Related Genotypes:

BKS.Cg-*Dock7^m*/+ *Lepr^{db}*/OlaHsd (black, lean) (code H174)

BKS.Cg-*Dock7^m*/*Dock7^m*/OlaHsd (misty, lean) (code W174)

* Our breeding scheme maintains *m* and *Lepr^{db}* in repulsion. These genes are closely linked; however, recombination could occur. Our mice are most likely nonrecombinants, but they have not been tested.

Genetic testing (at additional cost) on demand.

CHARACTERISTICS

- Lepr^{db}* is an autosomal recessive mutation on chromosome 4
- Obesity expressed around 4-5 weeks of age
- Elevation of plasma insulin demonstrated at 10-14 days
- Onset of hyperglycemia expressed at 4-8 weeks of age
- Polyphagia
- Proteinuria
- Glycosuria
- Polyuria/Polydipsia
- Hyperinsulinemia despite severe depletion of pancreatic islet
- Insulin-producing B-cells
- Leptin receptor deficient

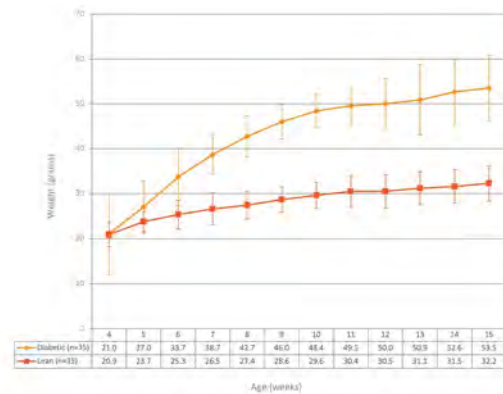
RESEARCH USE

- Diabetes, Type 2
- Peripheral neuropathy
- Myocardial disease
- Immunodeficiency
- Immunology
- Metabolism
- Obesity

ADDITIONAL AVAILABLE DATA

- Hematology
- Clinical chemistry
- 12-week growth
- Glucose tolerance test

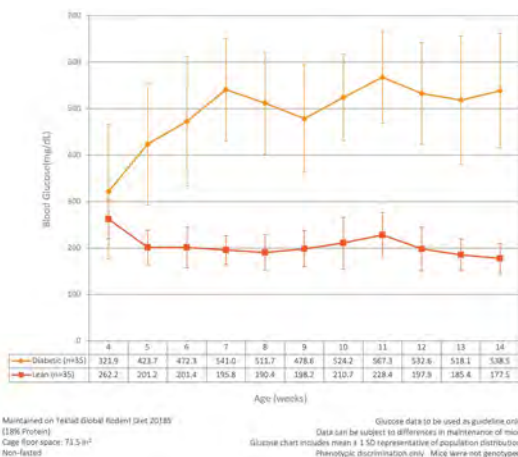
BKS.Cg- + *Lepr^{db}*/+ *Lepr^{db}*/OlaHsd (male)



Maintained on Teklad Global Rodent Diet 2018S (18% Protein)
Cage floor space: 71.5 in²

Growth data to be used as guideline only.
Data can be subject to differences in maintenance of mice.
Growth chart includes mean ± 2 SD representative of population distribution.
Phenotypic discrimination only. Mice were not genotyped.

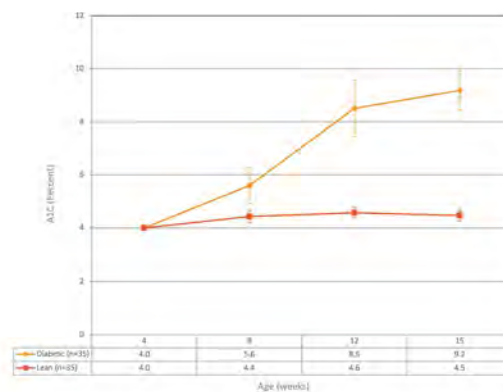
BKS.Cg- + *Lepr^{db}*/+ *Lepr^{db}*/OlaHsd Blood Glucose (male)



Maintained on Teklad Global Rodent Diet 2018S (18% Protein)
Cage floor space: 71.5 in²
Non-fasted

Glucose data to be used as guideline only.
Data can be subject to differences in maintenance of mice.
Glucose chart includes mean ± 2 SD representative of population distribution.
Phenotypic discrimination only. Mice were not genotyped.

BKS.Cg- + *Lepr^{db}*/+ *Lepr^{db}*/OlaHsd A1c (male)



Maintained on Teklad Global Rodent Diet 2018S (18% Protein)
Cage floor space: 71.5 in²
Non-fasted

A1c data to be used as guideline only.
Data can be subject to differences in maintenance of mice.
A1c chart includes mean ± 2 SD representative of population distribution.
Phenotypic discrimination only. Mice were not genotyped.

MODEL CODE
021

Rag2/Il2rg double knockout (R2G2™)

NOMENCLATURE: B6;129-Rag2^{tm1Fwa}Il2rg^{tm1Rsky}/DwlHsd

White-bellied, light chinchilla (light tan). The R2G2™ model is a double knockout mouse with an ultra immunodeficient phenotype. The model was created by backcrossing the *IL2RG* (common gamma chain) mutation on to a mixed background mouse (C57BL/6 and 129 mix) with a mutation in *Rag2*. The recombination activating gene 2 (*Rag2*) interruption causes a deficiency in T and B cells. The Common gamma chain gene (*IL2RG*) interruption results in a lack of functional receptors for IL-2, IL-4, IL-7, IL-9 and IL-15. Envigo acquired the model from Fox Chase Cancer Center in 2016, where the model had been maintained since 2005. Envigo was acquired by Inotiv in 2021.

CHARACTERISTICS

- Recombination activating gene 2 (*Rag2*) knocked out
- Common gamma chain gene (*Il2rg*) knocked out
- Lacks functional receptors for IL-2, IL-4, IL-7, IL-9 and IL-15
- Severe lymphocyte development impairment
- Deficient in T cells
- Deficient in B cells
- Lacks NK cells
- Decreased macrophage cells
- Decreased dendritic cells
- Decreased neutrophils

RESEARCH USE

- Oncology research
- Cancer cell transplantation
- Immunology
- Infectious disease

FEATURES AND ADVANTAGES

- **Severe Immunodeficiency** → Ultra immunodeficient phenotype enhances tumor cell acceptance
- **Less radiosensitive** → Higher tolerance for radiation as compared to models with the scid mutation
- **Reduced leakiness** → Decreased leakiness as compared to SCID models

ADDITIONAL AVAILABLE DATA

- Hematology
- Flow cytometry data
- Tumor growth chart
- Radiation sensitivity
- Chemotherapy tolerability
- Estrogen supplement tolerability



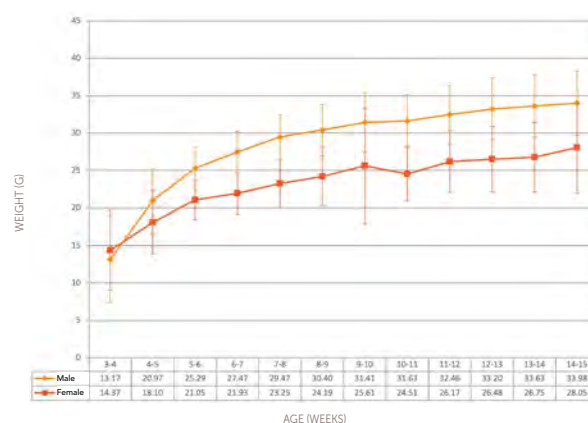
Academic pricing

AGE (weeks)	PRICE PER ANIMAL
4	€ 137,05
5	€ 137,05
6	€ 137,05
7	€ 137,05
8	€ 137,05
9	€ 137,05
Over 9 weeks, add per week	€ 8,40

Commercial pricing

AGE (weeks)	PRICE PER ANIMAL
4	€ 176,70
5	€ 188,25
6	€ 201,25
7	€ 210,80
8	€ 218,95
9	€ 227,20
Over 9 weeks, add per week	€ 8,25

B6;129-Rag2^{tm1Fwa}Il2rg^{tm1Rsky}/DwlHsd



GROWTH CHART DATA SHOULD BE USED AS A GUIDELINE ONLY.
ANIMALS WERE BRED AND MAINTAINED ON TEKLAB GLOBAL 2018S DIET.



MODEL CODE
126

B-NDG knockout mouse

NOMENCLATURE: NOD.CB17-*Prkdc*^{scid} *IL2rg*^{tm1}/BcgenHsd

Albino. The B-NDG model is a single knockout mouse with an ultra-immunodeficient phenotype. The model was generated by Biocytogen by deleting the *IL2rg* gene from NOD.scid mice. *Prkdc* (protein kinase DNA-activated catalytic) null scid mutation is characterized by significantly deficient of functional T cells and B cells. The common gamma chain gene (*IL2RG*) deletion results in the lack of functional NK cells. Envigo licensed the mouse model from Biocytogen in 2019, where the model had been maintained. Envigo was acquired by Inotiv in 2021.

CHARACTERISTICS

- Common gamma chain gene (*Il2rg*) interrupted
- Lacks functional receptors for IL-2, IL-4, IL-7, IL-9, IL-15, and IL-21
- Autosomal recessive, single nucleotide polymorphism with *Prkdc* gene on chromosome 16
- Severe lymphocyte development impairment
- Deficient in T cells
- Deficient in B cells
- Lacks NK cells
- Deficiency in cytokine signaling
- High humanization capability

RESEARCH USE

- Oncology research
- Cancer cell transplantation
- Immunology
- Infectious disease
- Humanization applications

FEATURES AND ADVANTAGES

- **Severe Immunodeficiency** → Ultra immunodeficient phenotype enhances tumor cell acceptance
- **High humanization capability** → Minimal rejection of human-derived cells and tissue

ADDITIONAL AVAILABLE DATA

- Hematology
- Flow cytometry data
- Tumor growth charts
- PDX model data
- Humanization data

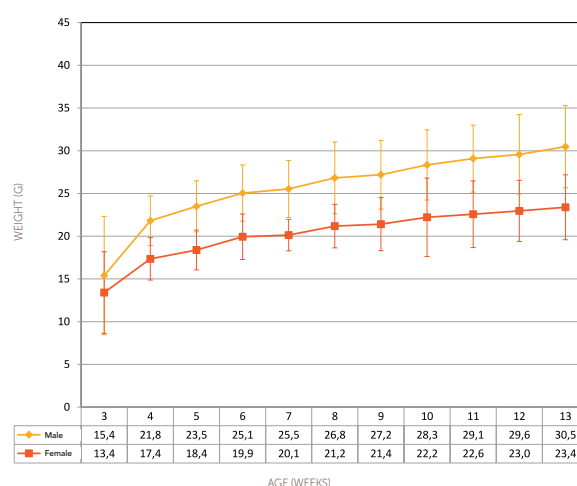
Academic pricing

AGE (weeks)	PRICE PER ANIMAL
4	€ 165,90
5	€ 165,90
6	€ 171,00
7	€ 180,00
8	€ 189,05
9	€ 198,05
Over 9 weeks, add per week	€ 9,00

Commercial pricing

AGE (weeks)	PRICE PER ANIMAL
4	€ 198,05
5	€ 198,05
6	€ 207,70
7	€ 216,70
8	€ 225,75
9	€ 234,75
Over 9 weeks, add per week	€ 9,65

NOD.CB17-*Prkdc*^{scid} *IL2rg*^{tm1}/BcgenHsd



GROWTH CHART DATA SHOULD BE USED AS A GUIDELINE ONLY.
ANIMALS WERE BRED AND MAINTAINED ON TEKLAD GLOBAL 2018S DIET.

For more information on model development and characterization updates, visit inotiv.com/bndg

Hybrid mice



MODEL CODE
946

B6C3F1

NOMENCLATURE: B6C3F1/OlaHsd

AGE (weeks)

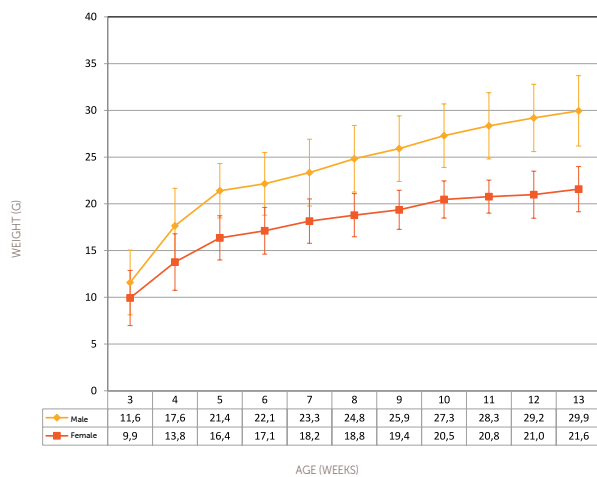
PRICE PER ANIMAL

3	€ 34,30
4	€ 37,65
5	€ 41,20
6	€ 45,60
7	€ 49,50
8	€ 54,60
9	€ 59,50
Over 9 weeks, add per week	€ 5,70
Untimed pregnant female*	€ 280,90
Time mated female*	€ 383,15
Female with litter	€ 349,20

* For our pregnancy policy, refer to page 93.

Agouti. Offspring of a cross between the C57BL/6J OlaHsd inbred female and the C3H/HeNHsd inbred male.

B6C3F1/OlaHsd



GROWTH CHART DATA SHOULD BE USED AS A GUIDELINE ONLY.
ANIMALS WERE BRED AND MAINTAINED ON TEKLAB GLOBAL 2018S DIET.



MODEL CODE
344

B6D2F1

NOMENCLATURE: B6D2F1/JRccHsd

AGE (weeks)

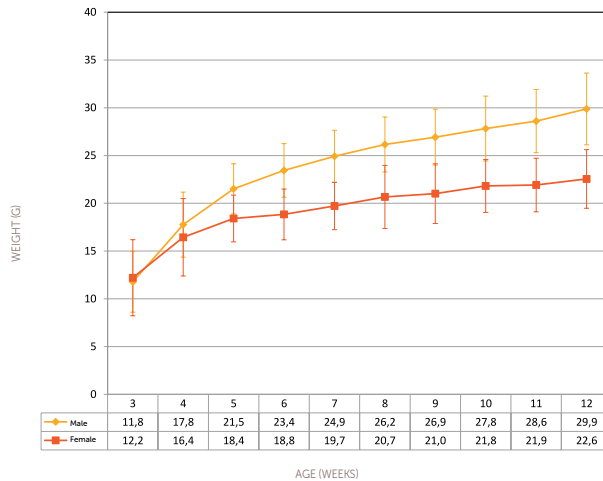
PRICE PER ANIMAL

3	€ 20,35
4	€ 21,85
5	€ 23,15
6	€ 25,65
7	€ 28,35
8	€ 31,25
9	€ 34,45
Over 9 weeks, add per week	€ 3,50
Untimed pregnant female*	€ 115,70
Time mated female*	€ 177,70
Female with litter	€ 158,85

* For our pregnancy policy, refer to page 93.

Black. The B6D2F1/JRccHsd mice are offspring from a cross between the C57BL/6JRccHsd inbred female and the DBA/2JRccHsd inbred male.

B6D2F1/JRccHsd



GROWTH CHART DATA SHOULD BE USED AS A GUIDELINE ONLY.
ANIMALS WERE BRED AND MAINTAINED ON TEKLAB GLOBAL 2018S DIET.

Hybrid mice



MODEL CODE
045

B6CBAF1

NOMENCLATURE: B6CBAF1/OlaHsd

AGE (weeks)

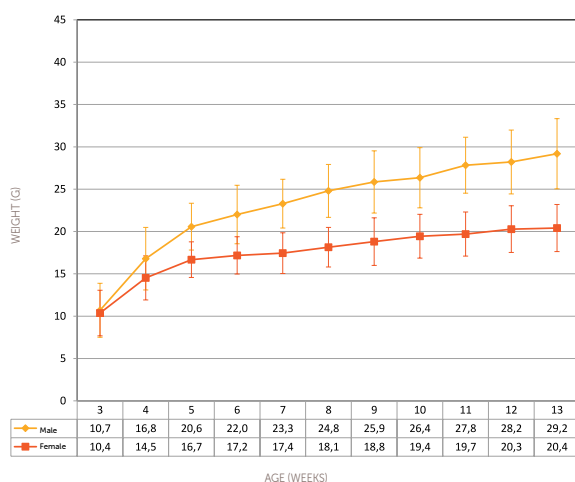
PRICE PER ANIMAL

3	€ 33,35
4	€ 38,00
5	€ 41,40
6	€ 47,00
7	€ 51,25
8	€ 55,45
9	€ 60,60
Over 9 weeks, add per week	€ 5,25
Untimed pregnant female*	€ 283,00
Time mated female*	€ 365,80
Female with litter	€ 339,80

* For our pregnancy policy, refer to page 93.

Agouti. Offspring of a cross between the C57BL/6J OlaHsd inbred female and the CBA/Ca OlaHsd inbred male.

B6CBAF1/OlaHsd



GROWTH CHART DATA SHOULD BE USED AS A GUIDELINE ONLY.
ANIMALS WERE BRED AND MAINTAINED ON TEKLAB GLOBAL 2018S DIET.



MODEL CODE
949

CB6F1

NOMENCLATURE: CB6F1/OlaHsd

AGE (weeks)

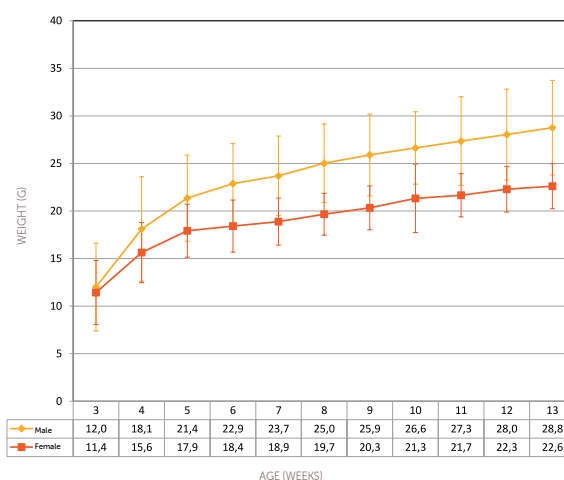
PRICE PER ANIMAL

3	€ 28,70
4	€ 32,80
5	€ 36,75
6	€ 41,00
7	€ 45,00
8	€ 49,45
9	€ 53,65
Over 9 weeks, add per week	€ 7,45
Untimed pregnant female*	€ 245,60
Time mated female*	€ 337,35
Female with litter	€ 323,10

* For our pregnancy policy, refer to page 93.

Agouti. Offspring of a cross between the BALB/c OlaHsd inbred female and the C57BL/6J OlaHsd inbred male.

CB6F1/OlaHsd



GROWTH CHART DATA SHOULD BE USED AS A GUIDELINE ONLY.
ANIMALS WERE BRED AND MAINTAINED ON TEKLAB GLOBAL 2018S DIET.

Additional strains of F1 hybrid mice

STOCK

AGE (weeks)

PRICE PER ANIMAL

CD2F1/Hsd (code 060)	3	€ 47,10
Over 3 weeks, add per week		€ 12,20

This is a brief selection of hybrid mice; any combination can be bred on demand.

For the same reason, any existing hybrid combination can be discontinued at any time without prior notice.



MODEL CODE
147

Brown Norway

NOMENCLATURE: BN/RijHsd

PRICE PER ANIMAL

WEIGHT (g)	MALE	FEMALE
35-49	€ 65,00	€ 65,00
50-74	€ 73,35	€ 75,45
75-99	€ 81,05	€ 85,50
100-124	€ 86,75	€ 98,75
125-149	€ 93,30	€ 111,00
150-174	€ 101,95	€ 124,95
175-199	€ 110,65	€ 142,10
200-224	€ 119,20	-
225-249	€ 126,55	-
250-274	€ 137,90	-
275-299	€ 148,60	-
Over 12 weeks, add per week	€ 9,55	€ 9,45
Untimed pregnant female*	-	€ 427,90
Time mated female*	-	€ 523,60
Female with litter	-	€ 508,15
Proven breeder	€ 213,90	€ 213,90
Retired breeder/Surplus	€ 79,55	€ 79,55

* For our pregnancy policy, refer to page 93.

Brown, non-agouti. BN/RijHsd rats were derived from a nucleus colony obtained directly from the TNO Institute, the Netherlands.

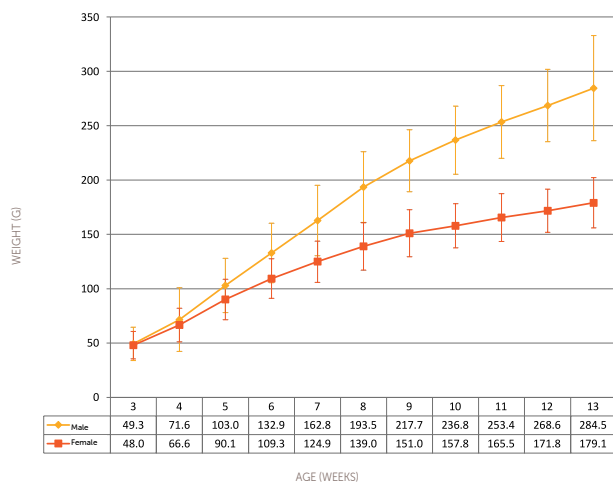
CHARACTERISTICS

- Litter average: 4.5
- Haplotype: *RT1ⁿ*
- Hyper-responsive lungs
- High incidence of bladder tumors in males

RESEARCH USE

- Allergic respiratory disease
- Oncology
- Aging
- Leukemia
- Nephrology

BN/RijHsd



GROWTH CHART DATA SHOULD BE USED AS A GUIDELINE ONLY.
ANIMALS WERE BRED AND MAINTAINED ON TEKLAD GLOBAL 2018S DIET.



MODEL CODE
092

Dark Agouti

NOMENCLATURE: DA/OlaHsd

PRICE PER ANIMAL

WEIGHT (g)	MALE	FEMALE
35-49	€ 47,60	€ 47,60
50-74	€ 52,20	€ 54,10
75-99	€ 57,90	€ 62,80
100-124	€ 63,45	€ 74,10
125-149	€ 70,30	€ 84,10
150-174	€ 78,60	€ 96,95
175-199	€ 86,15	€ 112,55
200-224	€ 93,30	-
225-249	€ 101,40	-
250-274	€ 110,35	-
275-299	€ 119,05	-
Over 12 weeks, add per week	€ 9,35	€ 9,35
Untimed pregnant female*	-	€ 291,85
Time mated female*	-	€ 351,30
Female with litter	-	€ 337,40
Proven breeder	€ 119,15	€ 119,15
Retired breeder/Surplus	€ 47,75	€ 47,75

* For our pregnancy policy, refer to page 93.

Agouti. From A.R.C. Cambridge, United Kingdom; to Olac, United Kingdom, in 1979; to Harlan Laboratories, in 1992. Harlan became Envigo in 2015, then Envigo was acquired by Inotiv in 2021.

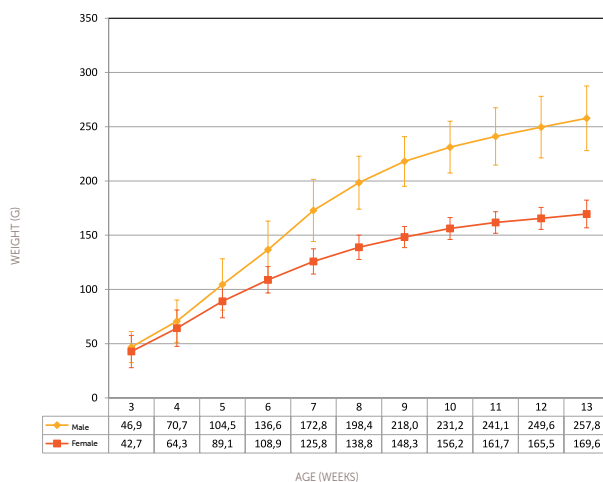
CHARACTERISTICS

- Litter Average: 6.0
- Haplotype: *RT1^{av1}*
- Females have a defective bile acid transport

RESEARCH USE

- Experimental allergic encephalomyelitis
- Induced rheumatoid arthritis
- Oncology
- Cardiovascular
- Transplantation

DA/OlaHsd



GROWTH CHART DATA SHOULD BE USED AS A GUIDELINE ONLY.
ANIMALS WERE BRED AND MAINTAINED ON TEKLAD GLOBAL 2018S DIET.



MODEL CODE
010

Fischer 344

NOMENCLATURE: F344/NHsd

WEIGHT (g)	PRICE PER ANIMAL	
	MALE	FEMALE
35-49	€ 59,55	€ 59,55
50-74	€ 59,80	€ 65,45
75-99	€ 69,20	€ 80,45
100-124	€ 82,75	€ 90,10
125-149	€ 90,75	€ 109,20
150-174	€ 102,10	€ 141,30
175-199	€ 108,80	€ 178,40
200-224	€ 127,25	-
225-249	€ 136,75	-
250-274	€ 146,30	-
275-299	€ 157,25	-
Over 12 weeks, add per week	€ 11,00	€ 11,00
Untimed pregnant female*	-	P.O.R.
Time mated female*	-	P.O.R.
Female with litter	-	P.O.R.
Proven breeder	-	P.O.R.
Retired breeder/Surplus	-	P.O.R.

* For our pregnancy policy, refer to page 93.

Albino. F344/NHsd; Descended from a nucleus colony obtained from the National Institutes of Health, Bethesda, Maryland.

CHARACTERISTICS

- Litter Average: 7.5
- Haplotype: *RT1^{M2}*
- Hydrocephalic resistant

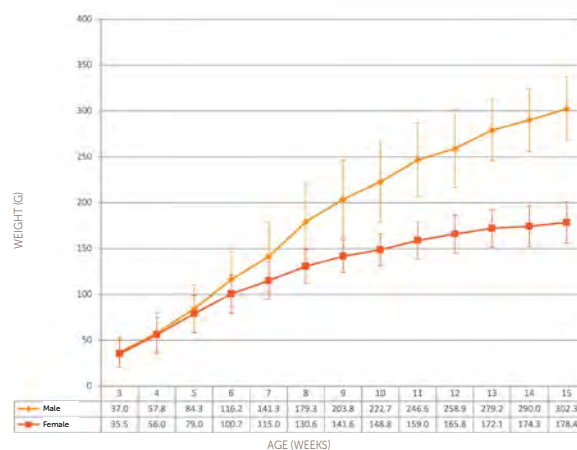
ADDITIONAL AVAILABLE DATA

- Hematology
- Clinical chemistry
- Two-year growth

RESEARCH USE

- Experimental allergic encephalomyelitis
- Carcinogenicity
- Oncology
- Toxicology
- Aging
- Ophthalmology
- Autoimmunity
- General purpose

F344/NHsd



GROWTH CHART DATA SHOULD BE USED AS A GUIDELINE ONLY. ANIMALS WERE BRED AND MAINTAINED ON TEKLAD GLOBAL 2018S DIET.

Inbred rats



MODEL CODES
861, 017

Lewis

NOMENCLATURE: LEW/Han®Hsd (code 861)

NOMENCLATURE: LEW/SsNHsd (code 017)

PRICE PER ANIMAL

WEIGHT (g)	MALE	FEMALE
35-49	€ 44,95	€ 46,15
50-74	€ 53,15	€ 56,55
75-99	€ 60,35	€ 67,20
100-124	€ 67,05	€ 77,25
125-149	€ 75,70	€ 90,65
150-174	€ 84,70	€ 102,15
175-199	€ 92,70	€ 118,00
200-224	€ 101,05	-
225-249	€ 109,40	-
250-274	€ 119,30	-
275-299	€ 127,90	-
Over 12 weeks, add per week	€ 9,95	€ 9,45
Untimed pregnant female*	-	€ 443,25
Time mated female*	-	€ 621,90
Female with litter	-	€ 559,35
Proven breeder	€ 127,15	€ 130,70
Retired breeder/Surplus	€ 59,25	€ 61,10

* For our pregnancy policy, refer to page 93.

Albino. LEW/Han®Hsd rats were descended from the Central Institute for Laboratory Animal Breeding (ZfV), Hannover, Germany. In 1994 to Harlan through acquisition. LEW/SsNHsd rats were descended from a nucleus colony obtained from the National Institutes of Health, Bethesda, Maryland USA. Harlan became Envigo in 2015, then Envigo was acquired by Inotiv in 2021.

Han® is a registered trademark of Inotiv.

CHARACTERISTICS

- Litter average: 7.5
- Docile disposition
- Haplotype: *RT1^l*
- Inbred recipient for several congenic strains
- Increased levels of serum thyroxine, insulin, and growth hormone
- Susceptible to induction of autoimmune disease

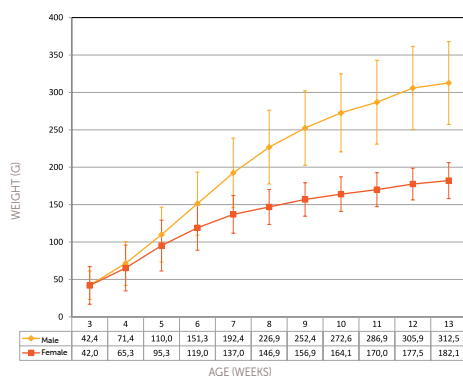
RESEARCH USE

- Adjuvant-induced arthritis
- Experimental allergic encephalomyelitis
- Transplantation

ADDITIONAL AVAILABLE DATA

- Clinical chemistry

LEW/Han®Hsd



GROWTH CHART DATA SHOULD BE USED AS A GUIDELINE ONLY. ANIMALS WERE BRED AND MAINTAINED ON TEKLAB GLOBAL 2018S DIET.



MODEL CODE
022

Spontaneously Hypertensive

NOMENCLATURE: SHR/NHsd

AGE (weeks)

PRICE PER ANIMAL

3	€ 235,15
4	€ 254,25
5	€ 275,55
6	€ 310,45
7	€ 340,20
8	€ 369,65
9	€ 398,50
10	€ 426,40
11	€ 463,60
12	€ 506,20
13	€ 540,35
14	€ 588,80
Over 14 weeks, add per week	€ 42,90
Untimed pregnant female*	€ 1.552,85
Time mated female*	€ 1.642,95
Female with litter	€ 2.111,00
Proven breeder	€ 668,70
Retired breeder/Surplus	€ 387,60

* For our pregnancy policy, refer to page 93.

Albino. Derived from a nucleus colony obtained from the National Institutes of Health, Bethesda, Maryland.

CHARACTERISTICS

- Litter average: 9.4
- Haplotype: *RT1^k*

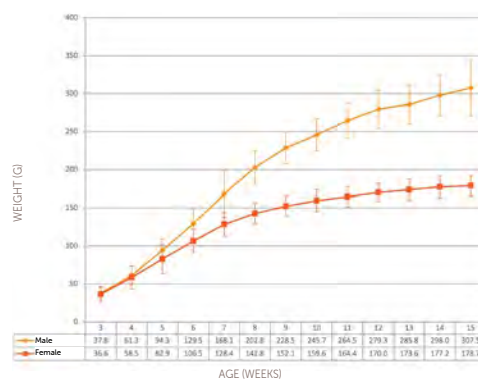
RESEARCH USE

- Model for Hypertension and Insulin Resistance

ADDITIONAL AVAILABLE DATA

- To maintain the phenotype of SHR/NHsd rats, Inotiv routinely screens future breeders utilizing the tail cuff method for acceptable blood pressure levels. On request we can monitor individual rats prior to shipment (at additional cost).

SHR/NHsd



GROWTH CHART DATA SHOULD BE USED AS A GUIDELINE ONLY. ANIMALS WERE BRED AND MAINTAINED ON TEKLAB GLOBAL 2018S DIET.



MODEL CODE
023

Wistar Kyoto

NOMENCLATURE: WKY/NHsd

AGE (weeks)	PRICE PER ANIMAL
3	€ 69,55
4	€ 74,65
5	€ 82,00
6	€ 91,45
7	€ 99,40
8	€ 109,65
9	€ 121,05
10	€ 135,10
11	€ 150,35
12	€ 165,75
13	€ 180,95
14	€ 196,15
Over 14 weeks, add per week	€ 16,00
Untimed pregnant female*	€ 356,05
Time mated female*	€ 404,40
Female with litter	€ 422,45
Proven breeder	€ 142,20
Retired breeder/Surplus	€ 56,70

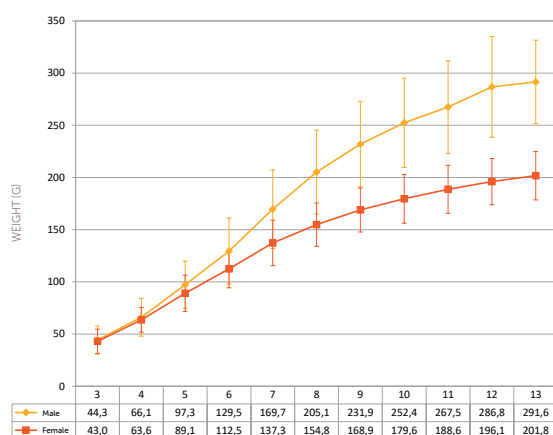
* For our pregnancy policy, refer to page 93.

Albino. Derived from a nucleus colony obtained from the National Institutes of Health, Bethesda, Maryland.

CHARACTERISTICS

- Litter average: 8.4
- Haplotype: *RT1^k*
- Normotensive control for SHR Model

WKY/NHsd



AGE (WEEKS)

GROWTH CHART DATA SHOULD BE USED AS A GUIDELINE ONLY.
ANIMALS WERE BRED AND MAINTAINED ON TEKLAB GLOBAL 2018S DIET.



MODEL CODE
168

Wistar Han®

NOMENCLATURE: RccHan®:WIST

WEIGHT (g)	PRICE PER ANIMAL	
	MALE	FEMALE
35-49	€ 15,05	€ 15,05
50-74	€ 17,15	€ 17,15
75-99	€ 20,25	€ 20,35
100-124	€ 22,20	€ 22,75
125-149	€ 25,10	€ 25,60
150-174	€ 27,65	€ 28,30
175-199	€ 30,55	€ 32,05
200-224	€ 33,30	-
225-249	€ 35,50	-
250-274	€ 37,80	-
275-299	€ 41,20	-
300-324	€ 45,90	-
325-349	€ 49,40	-
Over 12 weeks, add per week	€ 3,80	€ 3,80
Untimed pregnant female*	-	€ 161,30
Time mated female*	-	€ 212,95
Female with litter	-	€ 223,50
Proven breeder	€ 53,95	€ 53,95
Retired breeder/Surplus	€ 27,30	€ 27,30

* For our pregnancy policy, refer to page 93.

Albino. Derived at Biological Research Laboratories Limited (BRL), formerly RCC, now Harlan Laboratories Ltd., Füllinsdorf, Switzerland from original colony at Zentralinstitut für Versuchstierzucht, Hannover in 1989. Transferred to Harlan Sprague-Dawley, Inc. in 1993 (now Inotiv).

In 2004 Inotiv acquired RCC Ltd. and new breeding stock was transferred in 2008 (nomenclature RccHan®:WIST). Unlike competitive models, the RccHan®:WIST rat has been maintained from the original nucleus of 156 breeding pairs in Hannover, Germany.

Han® is a registered trademark of Inotiv.

CHARACTERISTICS

- Litter average: 9.5
- Docile disposition

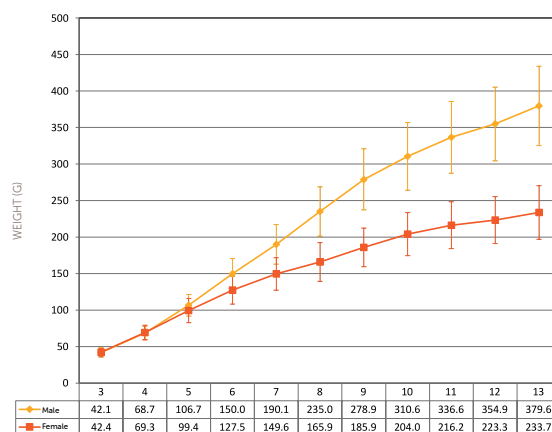
ADDITIONAL AVAILABLE DATA

- Hematology
- Clinical chemistry

RESEARCH USE

- Toxicology
- Oncology
- Teratology
- Aging
- General purpose

RccHan®:WIST



GROWTH CHART DATA SHOULD BE USED AS A GUIDELINE ONLY.
ANIMALS WERE BRED AND MAINTAINED ON TEKLAD GLOBAL 2018S DIET.

25 years of stable control
data at [inotiv.com/toxicology](https://www.inotiv.com/toxicology)

ACUTE TO ONCOGENICITY STUDIES – 3, 6, 12, AND 24 MONTHS

- Survival rates
- Growth
- Food and water consumption
- Clinical observations
- Functional observation battery
- Ophthalmoscopy
- Clinical pathology
- P450 enzymes
- Gross lesions and organ weights
- Bone marrow differentiation
- Incidence and images of spontaneous neoplastic and non-neoplastic changes
- Reproductive and developmental data



Key advantages

REDUCED BODY SIZE

- Reduced compound use
- More efficient housing
- Reduced food consumption
- Diet restriction not required

INCREASED LONGEVITY COMPARED WITH THE CRL:CD(SD)

- Ensures study completion with confidence
- Fewer animals required to start the study, meeting the 3Rs

REDUCED TUMOR INCIDENCE

- Fewer background tumors

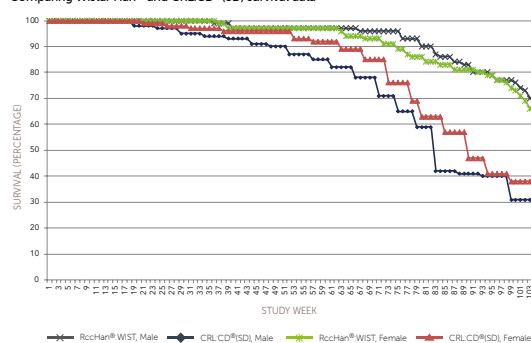


LATEST 103-WEEK DATA AVAILABLE

- Growth and survival
- Food consumption
- Clinical observations

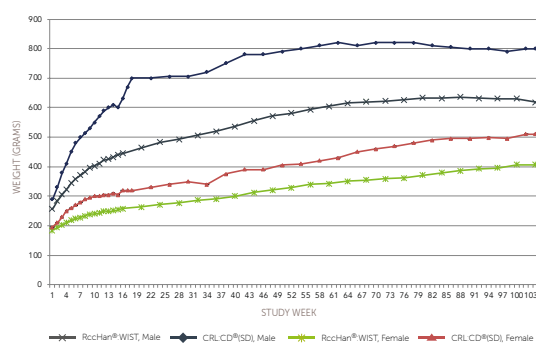
RccHan®:WIST 103-week survival curve

Comparing Wistar Han® and CRL:CD(SD) survival data



RccHan®:WIST 103-week growth curve

Growth curve for Wistar Han® and CRL:CD® rats



For all available data, go to
[inotiv.com/toxicology](https://www.inotiv.com/toxicology)



MODEL CODE
002

Sprague Dawley®

NOMENCLATURE: Hsd:Sprague Dawley® SD®

Albino. Originated by the Sprague-Dawley Company in 1925 through a series of crosses begun with a single-hooded male and six albino females of unknown origin. The original Sprague Dawley rat colony was obtained by Harlan in 1980 through the acquisition of Sprague-Dawley, Inc. Harlan became Envigo in 2015, then Envigo was acquired by Inotiv in 2021. Current Inotiv colonies are direct descendants of this original colony.

SD® is a registered trademark of Inotiv.

CHARACTERISTICS

- Most widely used outbred rat in animal research
- Litter average: 11.0
- Docile disposition
- Excellent reproductive performance and maternal characteristics

RESEARCH USE

- Toxicology
- Aging
- Teratology
- Oncology
- Nutrition
- Diet-induced Obesity
- General purpose

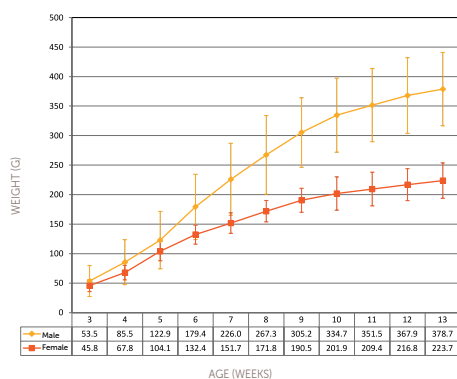
PRICE PER ANIMAL

WEIGHT (g)	MALE	FEMALE
35-49	€ 17,30	€ 17,30
50-74	€ 18,55	€ 18,85
75-99	€ 21,20	€ 21,85
100-124	€ 23,05	€ 24,35
125-149	€ 25,35	€ 27,25
150-174	€ 27,90	€ 29,70
175-199	€ 30,65	€ 33,15
200-224	€ 33,35	€ 36,80
225-249	€ 36,45	-
250-274	€ 39,20	-
275-299	€ 42,90	-
300-324	€ 46,55	-
325-349	€ 49,90	-
Over 10 weeks, add per week	€ 3,65	€ 3,30
Untimed pregnant female*	-	€ 210,70
Time mated female*	-	€ 247,10
Female with litter	-	€ 238,75
Proven breeder	€ 74,35	€ 75,35
Retired breeder/Surplus	€ 27,10	€ 28,65

Learn more about our surgical services.

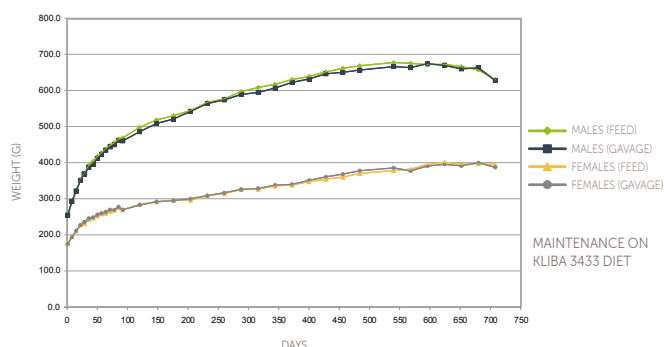
See page 84.

Hsd:Sprague Dawley® SD®



GROWTH CHART DATA SHOULD BE USED AS A GUIDELINE ONLY. ANIMALS WERE BRED AND MAINTAINED ON TEKLAD GLOBAL 2018S DIET.

Hsd:Sprague Dawley® (SD®) 104 week growth curve study C11963



GROWTH DATA TO BE USED AS A GUIDELINE ONLY AND IS SUBJECT TO DIFFERENCES IN MAINTENANCE OF RATS. GROWTH CHART INCLUDES MEAN REPRESENTATIVE POPULATION DISTRIBUTION.

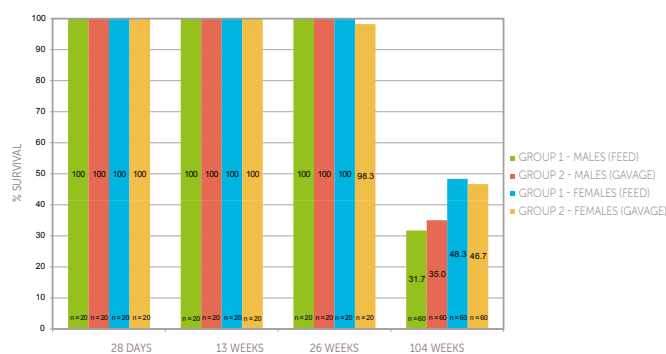
* For our pregnancy policy, refer to page 93.

104-WEEK DATA AVAILABLE GO TO [INOTIV.COM/SDTOX](https://www.inotiv.com/sdtox) TO FIND:

- Protocol Summary
- Growth Curve
- Survival Rates
- Complete Blood Count
- Organ Weights
- Serum Chemistry
- Neoplastic and Non-neoplastic Lesions

Aging available for SD rats

Hsd:Sprague Dawley®SD® Survival rate study c11963





MODEL CODE
119

Lister Hooded

NOMENCLATURE: HsdOla:LH

WEIGHT (g)	PRICE PER ANIMAL	
	MALE	FEMALE
35-49	€ 28,65	€ 30,75
50-74	€ 31,15	€ 33,25
75-99	€ 33,35	€ 36,30
100-124	€ 36,95	€ 40,55
125-149	€ 40,50	€ 45,20
150-174	€ 44,40	€ 50,05
175-199	€ 48,50	€ 55,00
200-224	€ 52,70	€ 60,40
225-249	€ 56,55	-
250-274	€ 60,65	-
275-299	€ 64,40	-
300-324	€ 69,40	-
325-349	€ 73,90	-
Untimed pregnant female*	-	€ 256,10
Time mated female*	-	€ 293,95
Female with litter	-	€ 261,85
Proven breeder	€ 84,50	€ 89,20
Retired breeder/Surplus	€ 32,25	€ 33,80

* For our pregnancy policy, refer to page 93.
Black-hooded. From ICI, Alderley Edge in 1932 to Medical Research Council, Mill Hill, UK. In 1969 to Olac (now Inotiv).

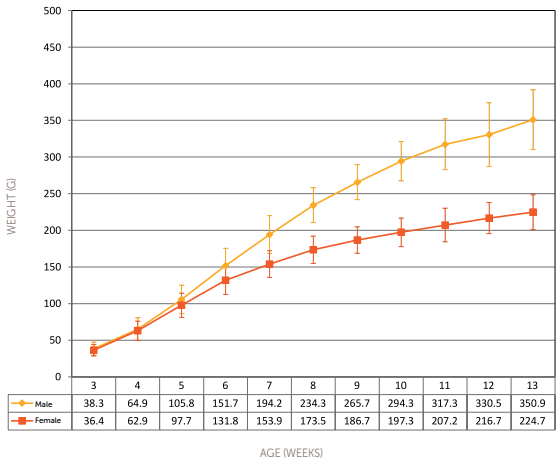
CHARACTERISTICS

- Litter Average: 10.0
- Disposition: Docile
- Slow growth rate

RESEARCH USE

- Behavioral Studies

HsdOla:LH



GROWTH CHART DATA SHOULD BE USED AS A GUIDELINE ONLY.
ANIMALS WERE BRED AND MAINTAINED ON TEKLAB GLOBAL 2018S DIET.

Outbred rats, Mutant rats



MODEL CODE
140

Long Evans

NOMENCLATURE: HsdBlu:LE

PRICE PER ANIMAL

WEIGHT (g)	MALE	FEMALE
35-49	€ 35,85	€ 36,75
50-74	€ 41,90	€ 45,75
75-99	€ 50,80	€ 53,55
100-124	€ 56,90	€ 59,60
125-149	€ 62,10	€ 65,05
150-174	€ 67,35	€ 75,20
175-199	€ 73,25	€ 80,35
200-224	€ 79,55	€ 88,50
225-249	€ 90,05	-
250-274	€ 97,15	-
275-299	€ 103,00	-
300-324	€ 108,95	-
325-349	€ 121,10	-
Untimed pregnant female*	-	€ 412,05
Time mated female*	-	€ 503,25
Female with litter	-	€ 542,55
Proven breeder	€ 192,30	€ 214,60
Retired breeder/Surplus	€ 127,35	€ 121,80

* For our pregnancy policy, refer to page 93.

Black-hooded. From the University of Rochester, Rochester, New York; to Blue Spruce Farms, Altamont, New York, in 1964; to Harlan through acquisition in 1988. Harlan became Envigo in 2015, then Envigo was acquired by Inotiv in 2021.

CHARACTERISTICS

- Individual housing of males recommended
- Good maternal characteristics

RESEARCH USE

- Diet-induced obesity
- Nutrition
- Behavior



MODEL CODES
005, 006

Athymic Nude

NOMENCLATURE: Hsd:RH-Foxn1^{nu} (code 005)

NOMENCLATURE: Hsd:RH-Foxn1^{nu}/Foxn1* (code 006)

PRICE PER ANIMAL

AGE (weeks)	rnu/rnu	rnu/+
3	€ 151,00	€ 112,05
4	€ 177,80	€ 154,30
5	€ 206,75	€ 199,30
6	€ 244,60	€ 243,10
7	€ 277,50	€ 283,30
8	€ 308,95	€ 326,85
9	€ 340,80	€ 366,70
Over 9 weeks, add per week	€ 29,25	€ 30,45
Untimed pregnant female*	-	€ 764,10
Female with litter	-	€ 997,45
Proven breeder	-	P.O.R.
Retired breeder/Surplus	-	P.O.R.

* For our pregnancy policy, refer to page 93.

Hooded (pigmented). Derived from animals obtained from the Rowett Research Institute, Aberdeen, Scotland.

CHARACTERISTICS

- The *nu* allele on chromosome 10 is an autosomal recessive mutation associated with hairlessness and thymic aplasia
- The thymus-dependent lymph node areas are depleted of lymphocytes (T-cells)
- Phenotypically hairless (sparse hair growth possible)
- Rudimentary thymic tissue
- Increased Natural Killer (NK) cell population
- Foxn1^{nu}/Foxn1* heterozygotes do not show partial expression of rnu phenotype

RESEARCH USE

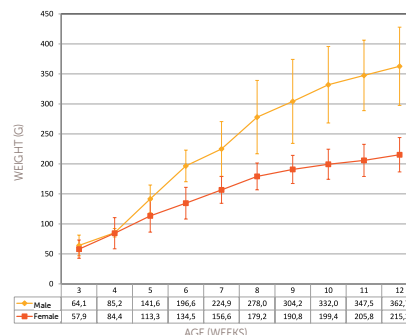
- Oncology (see page 22)
- Immunology
- Xenograft and allograft transplantation

Visit us at inotiv.com/oncology for our full portfolio of oncology products and services or ask for our oncology brochure.

Additional stocks of outbred rats

STOCK	AGE (weeks)	PRICE PER ANIMAL
Hsd:WI (code 001)	3	€ 38,00
Over 3 weeks, add per week		€ 5,70

Hsd:RH-Foxn1^{nu}



GROWTH CHART DATA SHOULD BE USED AS A GUIDELINE ONLY. ANIMALS WERE BRED AND MAINTAINED ON TEKLAD GLOBAL 2919 DIET.



MODEL CODE
372



Pink1 knockout rat - Park6

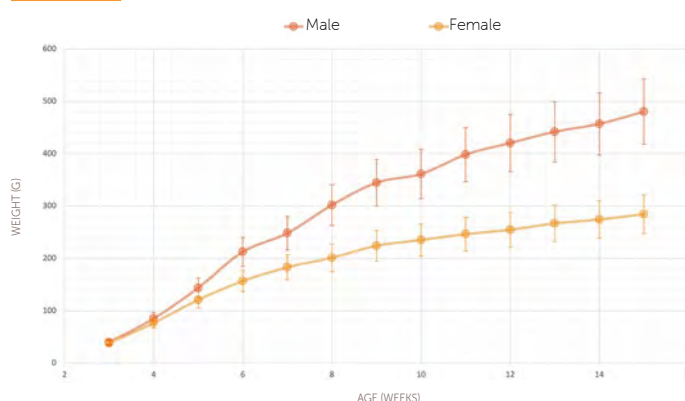
NOMENCLATURE: HsdSage: LE-*Pink1*^{em1Sage}

Developed in collaboration with The Michael J. Fox Foundation, this model contains a deletion of the *Pink1* (PTEN-induced putative kinase 1) gene, encoding for a serine/threonine protein kinase. Mutations in *Pink1* are implicated in early-onset Parkinson's disease. *Pink1* knockout rats show both motor impairments and dopaminergic cell loss, making this a useful model of Parkinson's disease.

Pink1 protein kinase localizes to the mitochondria and is thought to protect cells from stress-induced mitochondrial dysfunction. Mutations within this gene result in one form of autosomal recessive early-onset Parkinson's.

In humans, loss of function of *Park6* leads to a form of early-onset Parkinson's disease. This occurs due to the role *Park6* plays in protecting neurons from oxidative stress and cell death, making this an ideal model for the study of Parkinson's disease.

HsdSage: LE-*Pink1*^{em1Sage}



CHARACTERISTICS

- Homozygous knockout rats exhibit complete loss of target protein
- Approximately 30% of *Pink1* knockout rats display a hindlimb-dragging phenotype at 5 months of age
- *Pink1* knockout rats show increased hindlimb fatigue at 7 weeks of age
- *Pink1* knockout rats show increased number of hindlimb foot slips at 5 and 9 weeks of age as assessed by tapered balance beam
- Reports have suggested *Pink1* knockout rats show a ~50% reduction in dopaminergic neurons in the substantia nigra at 8 months of age
- Background strain: Long Evans Hooded

RESEARCH USE

- Parkinson's disease
- Stress-induced neurological dysfunction

* When packing males, all animals will need to be packed as cage mates only. Otherwise, males will be packed separately.



MODEL CODE
364



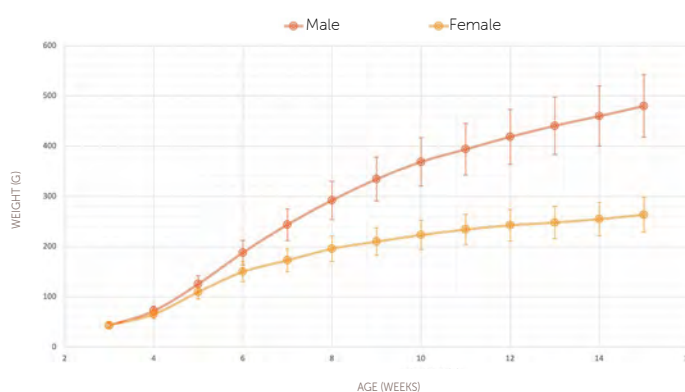
Mdr1a knockout rat

NOMENCLATURE: HsdSage: SD-Mdr1a^{em1Sage}

P-glycoprotein plays a critical role in efflux for both brain and liver. Homozygous null Mdr1a rats display increased exposure to CNS drugs in the brain, as well as increased bioavailability in the plasma for P-glycoprotein-specific substrates.

MDR1 encodes for P-glycoprotein and is a membrane-bound drug transporter expressed in the brain and intestine. It effectively blocks drugs from crossing the blood-brain barrier. P-glycoprotein can confer multiple drug resistance to tumor cells. Absence of P-glycoprotein creates a functional deficiency in the blood-brain barrier and results in elevated drug levels in many tissues, making this a useful model for efflux assay, efficacy, formulation, tissue distribution, studying neurotoxicology and chemotherapeutic agents.

HsdSage: SD-Mdr1a^{em1Sage}



CHARACTERISTICS

- Biallelic 20 bp deletion within *Abcb1* gene
- Increased oral bioavailability of P-glycoprotein-specific substrates
- Homozygous knockout rats display total loss of protein via Western blot
- Background strain: Sprague Dawley

RESEARCH USE

- DMPK assay
- PK-PD efflux assay
- Neurotoxicology
- Formulation drug-drug interactions
- Drug resistance
- Blood-brain barrier efflux
- Efficacy

* When packing males, all animals will need to be packed as cage mates only. Otherwise, males will be packed separately.



MODEL CODE
363

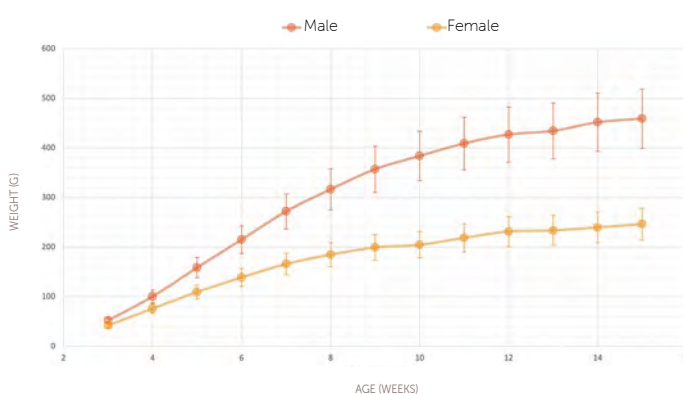
Mdr1a - Bcrp knockout rat

NOMENCLATURE: HsdSage: SD-*Mdr1a*^{em1Sage} *Abcg2*^{em1Sage}

P-glycoprotein and Bcrp both play a critical role in efflux for brain. Double homozygous null Mdr1a-Bcrp rats display increased exposure to CNS drugs in the brain, as well as increased bioavailability in the plasma for P-glycoprotein and Bcrp specific substrates.

MDR1 and BCRP are membrane-bound drug transporters expressed in the brain. Each effectively blocks specific drugs from crossing the blood-brain barrier. P-glycoprotein and Bcrp can confer multiple drug resistance to tumor cells. Absence of P-glycoprotein and Bcrp creates a functional deficiency in the blood-brain barrier and results in elevated drug levels in many tissues, making this a useful model for efflux assay, efficacy, formulation, tissue distribution, studying neurotoxicology and chemotherapeutic agents.

HsdSage: SD-*Mdr1a*^{em1Sage} *Abcg2*^{em1Sage}



CHARACTERISTICS

- Biallelic 20 bp deletion within *Abcb1* gene and 588 bp deletion within the *Abcg2* gene
- Increased oral bioavailability of P-glycoprotein and Bcrp specific substrates
- Homozygous knockout rats display total loss of both proteins via Western blot
- Background strain: Sprague-Dawley

RESEARCH USE

- DMPK Assay
- PK/PD Efflux Assay
- Neurotoxicology; Formulation
- Drug-drug interactions
- Drug resistance
- Blood-brain barrier efflux
- Efficacy

* When packing males, all animals will need to be packed as cage mates only. Otherwise, males will be packed separately.

Pre-developed genetically engineered rodent models

Advance your drug discovery research with predictive and translational models.

Our pre-developed models cover various therapeutics, such as neuroscience, ADMET, cardiovascular, respiratory, and oncology. Our breadth of pre-developed knockout and knockin models are available to provide the scientific community access to popular models for use in basic and preclinical research applications.

Our portfolio of pre-developed transgenic models includes over 80 rat and mouse models. The table below details a subset of our popular models available for the research community.

NEUROSCIENCE

Alzheimer's Disease

ApoE KO rat

hApoE2 KI rat

hApoE3 KI rat

hApoE4 KI rat

App KO rat

BDNF KO rat

Autism

CHD8 KO rat

Cntnap2 KO rat

Fmr1 KO rat

Gabrb3 KO rat

MeCP2 KO rat

Met KO rat

mGluR5 KO rat

Nrxn1 KO rat

Nlgn3 KO rat

Rbfox1 KO rat

Pain

Faah KO rat

Oprm1 KO rat

p75^{NTR} KO rat

Trpv1 KO rat

Hereditary Neuropathy

SORD KO rat

Parkinson's Disease*

Lrrk1 KO rat

Lrrk2 KO rat

Lrrk1-Lrrk2 KO rat

Park2 (Parkin) KO rat

Park7 (DJ-1) KO rat

Pink1 (Park6) KO rat

Pink1/Parkin KO rat

Schizophrenia

BDNF KO rat

Cacna1c KO rat

Chrna7 KO rat

Disc1 KO rat

Pde4b KO rat

Cre Models

5Ht3a-Cre KI rat

CamKIIa-Cre KI rat

DAT-Cre KI rat

Parvalbumin-Cre KI rat

Sst-Cre KI rat

tdTomato KI rat

TH-Cre KI rat

Tph2-Cre KI rat

Vgat-Cre KI rat

VIP-Cre KI rat

ADMET

Transporters

Bcrp KO rat

BSEP KO rat

Mdr1a KO rat

Mdr1a-1b KO rat

Mdr1a-Bcrp KO rat

Mrp1 KO rat

Mrp2 KO rat

Oat1 KO rat

Oat3 KO rat

Oct1 KO rat

Oct2 KO rat

Xenobiotic

AHR KO rat

CAR KO rat

Ppara KO rat

PXR KO rat

PXR/CAR KO rat

PXR/CAR/AHR KO rat

ONCOLOGY

Cell Proliferation

p53 KO rat

Pten KO rat

Rag2-Il2rg (R2G2[®]) KO mouse

DNA Repair

Prkdc KO rat

Immunotherapy

B-NDG KO mouse

IMMUNOLOGY

Inflammation

Cox1 KO rat

Cox2 KO rat

Lgals1 (Gal1) KO rat

Prkdc KO rat

Rag1 KO rat (Fischer 344)

Rag1 KO rat (Sprague Dawley)

Rag2 KO rat (Fischer 344)

Rag2 KO rat (Sprague Dawley)

Rag2-Il2rg (R2G2[®]) KO mouse

Tbx21 (T-beta) KO rat

RESPIRATORY

Cystic Fibrosis

CFTR KO rat

INFECTIOUS DISEASE

COVID-19

hACE2 KI rat

hACE2 KI mouse

hTmprss2 KI mouse

hACE2/hTmprss2 KI mouse

CARDIOVASCULAR

Atherosclerosis

ApoE KO rat

hApoE2 KI rat

hApoE3 KI rat

hApoE4 KI rat

Ldlr KO rat

Leptin KO rat

*Our suite of Parkinson's disease research models have been developed in partnership with the Michael J. Fox Foundation. To help drive Parkinson's

For more information on our pre-developed transgenic models, please visit [inotiv.com](https://www.inotiv.com) or contact us at GEMSOders@inotiv.com

Aged rats



MODEL CODE
002

Aged rats

NOMENCLATURE: Hsd:Sprague Dawley® SD® (code 002)
(Sprague Dawley®)

AGE (months)	BASE PRICE	ADD PER MONTH
3-12	P.O.R.	P.O.R., starting 4th month
12-18	P.O.R.	P.O.R., starting 13th month
18+	P.O.R.	P.O.R., starting 19th month

Albino. Originated by the Sprague-Dawley Company, Madison, Wisconsin, in 1925 through a series of crosses begun with a single-hooded male and six albino females of unknown origin. Current Inotiv colonies are direct descendants of this original colony.

SD® is a registered trademark of Inotiv.

Cohorts of the listed male rat models are reserved monthly for aged-animal inventory. Pricing of aged animals from the aging inventory is available upon request. If the requested aged animals are not available from our aging inventory, or require three or more months of maintenance prior to shipment, Inotiv will age a reserved cohort of animals to accommodate client research requirements and account for anticipated loss from natural attrition.

Pricing for client-reserved aging cohorts will be developed based on the requirements of the project. Prior to initialization of an aging project, Inotiv will confirm client expectations, the project work scope, and animal pricing with a written agreement of understanding.

RESEARCH USE

- Memory
- Osteoarthritis
- Neoplasia
- Immune response
- Longevity
- Vision and hearing
- Motor skills
- Renal degeneration
- Age-associated pathology
- Metabolism
- Neurobiology
- Cardiovascular
- Reproductive senescence

COMMON AGE-ASSOCIATED CONDITIONS INCLUDE:

- Hair loss
- Loss of motor skills and sensory perception
- Presence of spontaneous tumors
- Reduced immunologic and physiologic function
- Loss of vision, e.g. retinal degeneration, development of cataracts

When planning for your aged animal requirements, please consider the need to reserve extra animals on your order to replace any losses due to natural causes.

Hamsters and cotton rats



MODEL CODE
089

*Golden Syrian Hamsters

NOMENCLATURE: HsdHan®:AURA

AGE (weeks)	PRICE PER ANIMAL
3	€ 63,65
4	€ 69,75
5	€ 79,95
6	€ 89,70
7	€ 101,55
8	€ 109,85
9	€ 121,70
Over 9 weeks, add per week	€ 32,90
Untimed pregnant female**	€ 309,95
Time mated female**	€ 309,95
Female with litter	€ 277,85
Proven breeder	€ 139,25

** For our pregnancy policy, refer to page 93.

Golden brown and white. Colony established in 1994 with stock originating from Zentralinstitut für Versuchstiere, Hannover, Germany. The source for the Hannover colony was the Sprague-Dawley Company in 1973.

Han® is a registered trademark of Inotiv.

* This specie is bred in US only. Importation is subject to a Fish and Wildlife Declaration Fee.

CHARACTERISTICS

- Litter average: 9.0
- Excellent reproductive performance

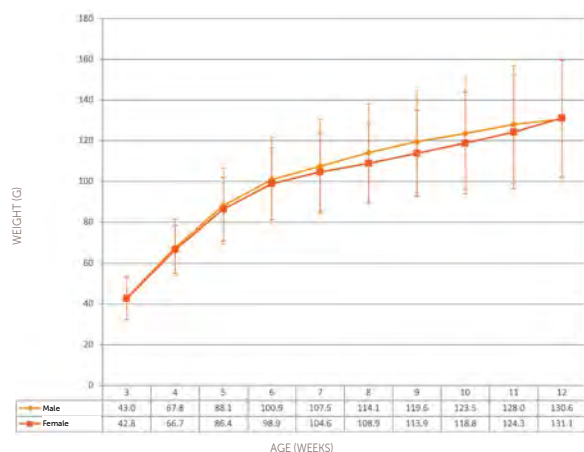
ADDITIONAL AVAILABLE DATA

- Hematology
- Clinical chemistry

RESEARCH USE

- Behavior
- Carcinogenesis
- Hibernation
- Hypercholesterolemia
- Infectious disease (Clostridium difficile, SARS-CoV-2)
- Metabolism
- Oncology
- Syrian Hamster Embryo (SHE) Cell Transformation Assay
- Toxicology

HsdHan®:AURA



GROWTH CHART DATA SHOULD BE USED AS A GUIDELINE ONLY. ANIMALS WERE BRED AND MAINTAINED ON TEKLAD GLOBAL 2018S DIET.



MODEL CODE
201

*Cotton Rat

NOMENCLATURE: Hsd:Cotton Rat

AGE (weeks)	PRICE PER ANIMAL
3	€ 468,00
4	€ 519,75
5	€ 565,70
6	€ 622,00
7	€ 660,75
8	€ 725,90
9	€ 755,70
Over 9 weeks, add per week	€ 42,95

Color combination varies: gray, brown, black. *Sigmodon hispidus* (Cotton Rat) is a New World rodent that was developed by the National Institutes of Health, Bethesda, Maryland, and Virion Systems, Inc. In 1996, Harlan obtained a breeding nucleus from Virion Systems, Inc. Harlan became Envigo in 2015, then Envigo was acquired by Inotiv in 2021.

* This specie is bred in US only. Importation is subject to a Fish and Wildlife Declaration Fee.

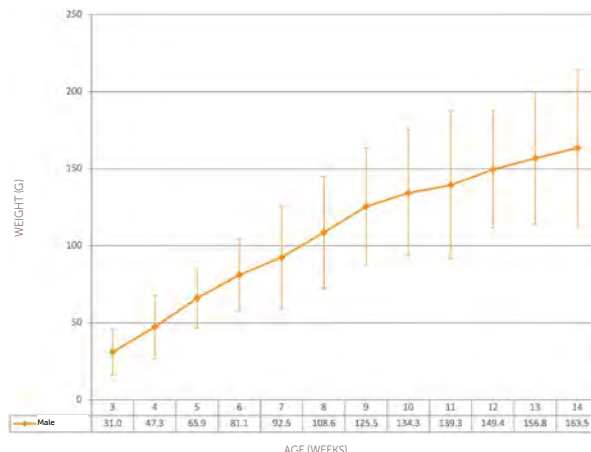
CHARACTERISTICS

- Litter average: 5.5
- Susceptible to a wide range of human infectious disease agents

RESEARCH USE

- Adenoviral vector-based gene therapy
- Infectious disease pathogenesis
 - Respiratory Syncytial Virus
 - Herpes Simplex
 - Parainfluenza Type 3
 - Polio
 - Measles
 - Monkeypox
- Infectious disease immune response
 - SARS-CoV-2

Hsd:Cotton Rat



GROWTH CHART DATA SHOULD BE USED AS A GUIDELINE ONLY. ANIMALS WERE BRED AND MAINTAINED ON TEKLAD GLOBAL 2018S DIET.



MODEL CODE
459

Dunkin Hartley

NOMENCLATURE: HsdDhl:DH

WEIGHT (g)

PRICE PER ANIMAL

175-199	€ 118,20
200-249	€ 125,30
250-299	€ 139,20
300 -349	€ 148,80
350-399	€ 160,95
400-449	€ 172,90
450-499	€ 185,20
500-549	€ 196,20
550-599	€ 208,95
Over 600, per 50 gr. extra	€ 16,45
Untimed pregnant female	€ 507,50
Time mated female	€ 556,80
Female with litter	€ 556,80
Proven breeder	€ 409,20
Retired breeder/Surplus	€ 98,55
UNO Microchip2	€ 10,50

Albino. Dunkin Hartley colony originally from Agriculture Research Centre at Compton in 1976. HsdDhl:DH colony was obtained from Hall in 2006 due to closing down of this facility.

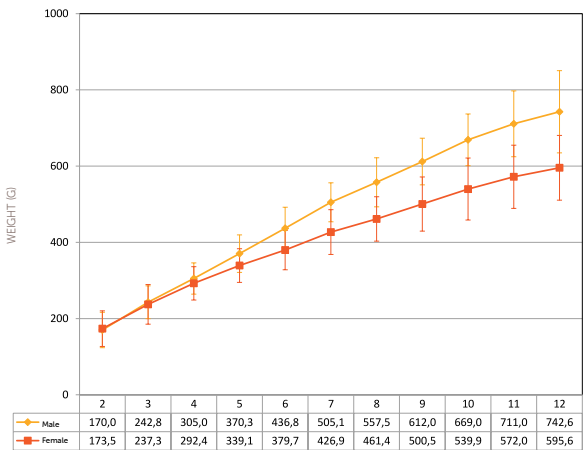
CHARACTERISTICS

- Individual identification via microchip on request

RESEARCH USE

- Compact animal with excellent breeding performance, used in multiple research disciplines

HsdDhl:DH



GROWTH CHART DATA SHOULD BE USED AS A GUIDELINE ONLY.
ANIMALS WERE BRED AND MAINTAINED ON TEKLAD GLOBAL 2940 DIET.



MODEL CODE
444

New Zealand White

NOMENCLATURE: HsdIf: NZW

AGE (weeks)

PRICE PER ANIMAL

Up to 8	€ 282,20
9-11	€ 299,25
12	€ 350,55
13	€ 410,40
14	€ 465,95
15	€ 525,80
16	€ 585,65
17	€ 649,75
18	€ 718,20
19	€ 790,85
20	€ 867,90
Over 20 weeks, add per week	€ 33,85
Untimed pregnant female	€ 1.193,00
Time mated female* (age 16-20 weeks)	€ 1.251,75
Time mated female* (over 20 weeks, add per week)	€ 33,85
Female with litter	€ 1.374,40
Proven breeder	€ 790,80
Retired breeder/Surplus	€ 289,60
LH Injection	€ 35,20

Albino. Derived from three commercial UK sources of New Zealand White rabbits. Through acquisition of Interfauna UK to Harlan in 1995. Harlan became Envigo in 2015, then Envigo was acquired by Inotiv in 2021.

* Extra charges apply in case a timed rabbit mating needs to be set up on a Holiday or Sunday. Please refer to page 93.

CHARACTERISTICS

- Litter Average: 8.5
- Production software for tracing individual rabbit lineage
- Individual identification via tattoo, or microchip on request

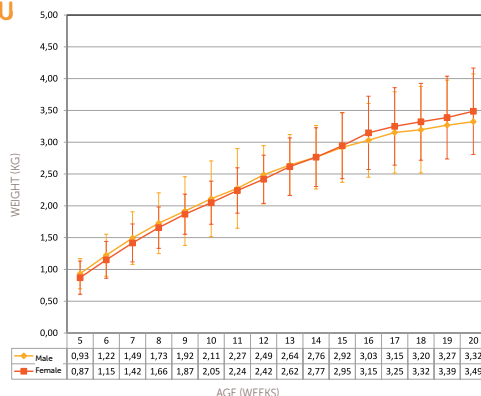
ADDITIONAL AVAILABLE DATA

- Hematology

RESEARCH USE

- Toxicology
- Teratology
- Dermatology
- Ophthalmology
- Biomedical Research
- Osteology
- Artherosclerosis
- Antibody Production
- Cardiovascular
- Renal

HsdIf: NZW



GROWTH CHART DATA SHOULD BE USED AS A GUIDELINE ONLY. ANIMALS WERE BRED AND MAINTAINED ON TEKLAD GLOBAL 2930 DIET.



MODEL CODE
221

New Zealand White

NOMENCLATURE: HsdHra: (NZW)

PRICE PER ANIMAL

P.O.R.

ADDITIONAL SERVICE OFFERINGS:

- Ocular screening solutions - Pre-shipment eye screening solutions identify optimal models for your ocular studies
- Social housing solutions - Social housing capabilities promote the compatibility and sociability of your rabbits (up to 2kg)
- We're able to offer single or double vascular catheterizations in our rabbit models to enable efficient and fast study start.
- Pre-implanted telemetry solutions - Partnered with Data Sciences International, Inc. (DSI), we're able to offer large models that are pre-implanted with telemetry devices to enable efficient and fast study start



MODEL CODE
222

Dutch Belted

NOMENCLATURE: HsdHra: DB

PRICE PER ANIMAL

P.O.R.

ADDITIONAL SERVICE OFFERINGS:

- Ocular screening solutions - Pre-shipment eye screening solutions identify optimal models for your ocular studies
- Social housing solutions - Social housing capabilities promote the compatibility and sociability of your rabbits (up to 2kg)
- We're able to offer single or double vascular catheterizations in our rabbit models to enable efficient and fast study start.

We do not recommend shipping rabbits under the age of 12 weeks. If you require a rabbit under 12 weeks of age, please contact customer service team for more details.

Enrichment: Environmental enrichment is made available for our rabbits.



MODEL CODES
226, 228

Cynomolgus macaques

NOMENCLATURE: *M. fascicularis*

PRICE PER ANIMAL

P.O.R.

CHARACTERISTICS

- Ability to source domestic bred animals of Asian origin.
- Sexually mature models available
- Global primate holding facilities in North America and Europe.



MODEL CODE
224

Rhesus macaques

NOMENCLATURE: *M. mulatta*

PRICE PER ANIMAL

P.O.R.

CHARACTERISTICS

- Model origin: Chinese or Indian (pending availability)

Quality breeding farms

We work with only high-quality breeding farm partners and our global veterinary group routinely conducts extensive audits of each farm to ensure supplier facilities are well maintained, the animals are well-cared for and healthy, and the export facilities are of high quality. Inotiv's veterinarians are often on site at farms to assist in the pre-export screening.

PRE-SHIPMENT AND TESTING SOLUTIONS

Our large inventory and comprehensive pre-shipment and testing solutions support a wide range of pre-testing specifications.

- **Documentation:**
We maintain electronic medical records on the health of each animal, including sexual maturity, behavioral assessments, and social housing history
- **Enrichment:**
Our training and socialization programs include cage-to-transfer box training, pole and collar training, social housing and environmental enrichment providing NHPs better prepared to meet your needs
- **Screening:**
We offer a wide range of available pre-shipment screening, including, EKG, ocular, pathogen, and viral, to meet your study specifications, enhance your study success rate and potentially reduce the number of models to meet your 3Rs goals

ADDITIONAL SERVICE OFFERINGS:

- Uniquely positioned to provide industry leading ground transportation services.
- Ocular screening solutions – Pre-shipment eye screening solutions identify optimal models for your ocular studies
- Social housing solutions – Social housing capabilities promote the compatibility and sociability of your rabbits
- Pre-implanted telemetry solutions – Partnered with Data Sciences International, Inc. (DSI), we are able to offer nonhuman primates that are pre-implanted with telemetry devices to enable efficient and fast study start
- Surgery services - Offer pre-implanted Vascular Access Ports for quick dosing of fluids, medications, and test compounds as well as blood withdrawal
- Buy and board - readily available NHP models and top-level care for your NHP models to give you peace of mind while you focus on other phases of your study.
- Microbiology laboratory – on-site microbiology laboratory produces results faster than if samples were sent to a reference lab – recovering pathogens more readily by reducing the potential for loss or degradation
- Pole and collar acclimation solutions – The proven pole and collar acclimation solution can remove critical days from your animal receipt to study initiation window

Packing guidelines

The following are guidelines for you to use to determine the number of containers required to ship your orders. For reasons of animal welfare, special considerations are given for deviations in weather conditions during the year. Therefore packing densities are divided into a winter period (October - May) and summer period (June - September). Adjustments may apply based on transit times and order specifications. The shipping containers include:

- Viewing window
- IATA handling instructions
- ClearH2O® gel hydration source

ClearH2O® gel is recognized by the research industry as an innovative hydration source. Our veterinary staff recommends ClearH2O® gel to ensure proper hydration of your research models in transit.

MICE

WEIGHT (G)	SMALL	LARGE
10-17	26 (20)	50 (40)
17-25	20 (16)	45 (36)
25-30	16 (12)	40 (32)
30+	14 (10)	30 (24)
Pregnant	10 (10)	25 (20)
Aging	please contact us	

For certain stocks and strains, packaging density of male mice can be reduced due to risk of fighting. See page 94 "shipping male mice."

Retired breeders will be sent separately in a box with a divider.

RATS

WEIGHT (G)	SMALL	LARGE
< 50	12 (9)	30 (24)
50-75	10 (8)	25 (20)
75-100	8 (6)	20 (16)
100-125	7 (5)	16 (12)
125-150	7 (5)	16 (12)
150-175	6 (4)	14 (10)
175-200	6 (4)	14 (10)
200-225	5 (4)	12 (8)
225-250	4 (3)	10 (7)
250-275	3 (2)	8 (6)
275-300	3 (2)	8 (6)
300-325	3 (2)	8 (6)
> 325	2 (1)	6 (4)
Pregnant	2 (1)	6 (4)
Aging	please contact us	

HAMSTERS

WEIGHT (G)	US DOUBLE WIRE CONTAINER
25-60	16
61-74	14
> 74	12

GUINEA PIGS

WEIGHT (G)	NUMBER PER BOX
< 200	6
200-275	5
275-350	5
350-450	4
450-500	3
> 500	2

MUTANT MICE

WEIGHT (G)	DOUBLE INSULATED
10-25	15 (12)
Male nude	10 (10)

This box is for immunodeficient nude and SCID type of mice, as well as for any isolator reared and maintained mice

MUTANT RATS

WEIGHT (G)	DOUBLE INSULATED
< 50	8
50-100	6
100-150	4
150-200	3
> 200	2

RABBITS

WEIGHT (KG)	LARGE
All weights	1

ISOLATOR REARED MICE

AGE (WK)	ITC
4-10	20

All Inotiv isolator reared mice (for example, immune deficient animals) can be sent in Transfer Isolator Chambers (ITC's). These ITC's give the animals extra protection and you can connect the ITC directly on your isolator. With the majority of the isolator reared stocks and strains it is not possible to order by weight.

The animals are shipped in IATA approved filtered boxes. The filtered boxes are supplied with agar and/or diet to assure that the animals arrive in excellent condition. All of our animals are shipped in climatized vehicles according to a weekly route.

In case customers request a non-standard type of box, this might be subject to surcharges.

Innovation and consistency

Diet should *reduce*, rather than introduce, variation. Teklad Global Diets® are the world's leading laboratory animal diets.

It's not enough to meet basic nutritional criteria. Diets should *reduce*, rather than introduce, variation. Innovatively designed for biomedical research, Teklad Global Diets® are an integrated range of natural ingredient diets for specific life stages.

TEKLAD GLOBAL DIETS® - YOUR FORMULA FOR SUCCESS

- Diets for multiple laboratory animal species
- Fixed formulation
- High-quality ingredients from approved regional suppliers
- Life stage and application appropriate
- Industry-recognized certified quality systems
- Global supply chain

By combining fixed formulation with rigorous ingredient control, the variation in nutrient and non-nutrient levels is minimized, meaning consistent results for you.

By combining **fixed formulation** with rigorous **ingredient control**, the variation in nutrient and non-nutrient levels is minimized, meaning **consistent results** for you.





Quality processes drive consistency

Fixed formula diets contain the **same** ingredients, in the exact **same** quantities, in **every** batch of diet.

- Diet is a critical variable in any study
- Our fixed formulation philosophy and quality practices translate to consistent research results for you
- Other manufacturers may use variable formula diets in which both ingredients and inclusion rates are changed to an extent unknown to the investigator

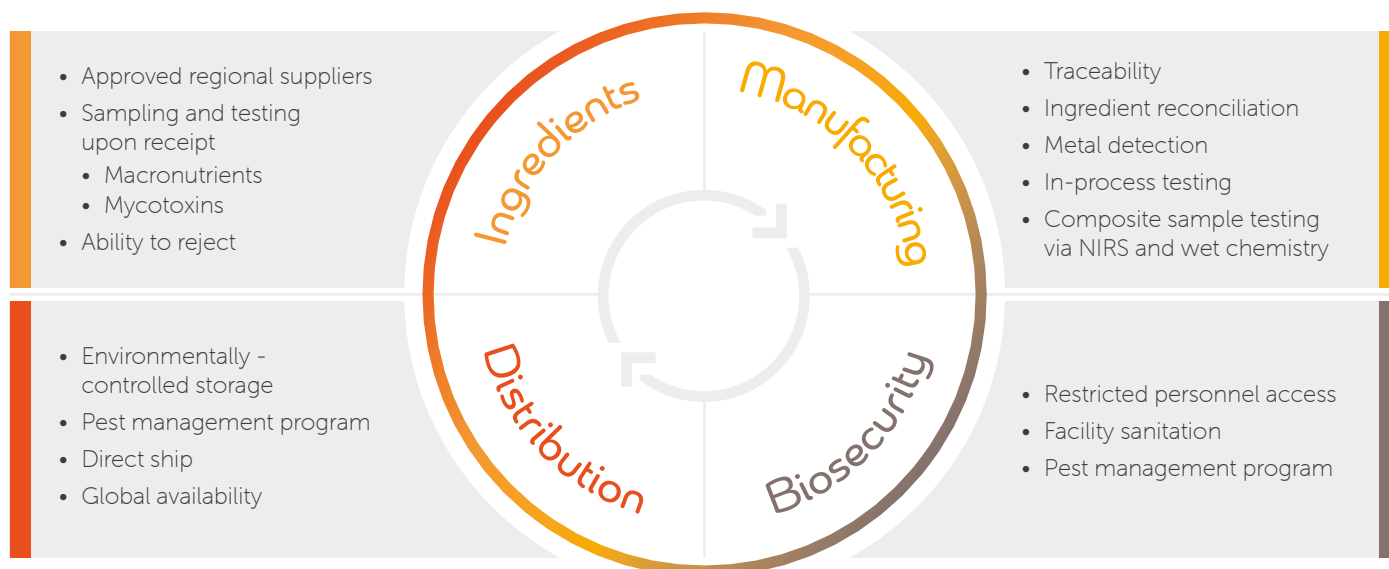
TEKLAD DIETS: A FIXED FORMULATION APPROACH

Method	Ingredients from approved suppliers are tested prior to acceptance and use.
Rationale	Both nutrients and non-nutrients can have important effects.
Result	Minimize nutrient variation and manage non-nutrient variation while maintaining formula integrity.



Bulk ingredients are sampled across the depth and length of the load and tested for macronutrients and mycotoxins

Teklad Diet sites in Madison, WI, received recertification to the ISO9001:2015 standard





Teklad Global Rodent Diets

A RELATED FAMILY OF DIETS FOR SPECIFIC LIFE STAGES AND RESEARCH PURPOSES

TEKLAD GLOBAL RODENT DIETS					
Diet	2014	2016	2018	2019	2020X
Primary ingredients (Order of inclusion)	Wheat midds Wheat Corn Corn gluten meal Soy oil	Wheat Corn Wheat midds Corn gluten meal Soy oil	Wheat Corn Wheat midds Soybean meal Corn gluten meal Soy oil	Wheat Corn Corn gluten meal Wheat midds Soy oil	Wheat Corn Corn gluten meal Wheat midds Soy oil
CALCULATED NUTRIENT PROFILE (AS FORMULATED)					
Protein %	14.3	16.4	18.4	19.2	19.4
Fat %	3.7	3.7	6.0	9.0	6.5
Metabolizable energy	2.9 kcal/g 12.1 kJ/g	3.0 kcal/g 12.6 kJ/g	3.1 kcal/g 13.0 kJ/g	3.3 kcal/g 13.8 kJ/g	3.1 kcal/g 13.0 kJ/g
Isoflavone content*	<20 mg/kg	<20 mg/kg	225-340 mg/kg	<20 mg/kg	<20 mg/kg
USE & FEATURES					
Life stage	Long-term maintenance	Growth, maintenance	Breeding, growth	Breeding, higher energy	Breeding, growth
Purpose and benefits	• Prolonged maintenance • Aging • Toxicology • Oncology	• Growth • Maintenance • Toxicology • Oncology	• Breeding • Growth • Maintenance • General purpose	• Breeding • Genetically - engineered mice • Poorly performing strains • Oncology	• Breeding • General purpose • Estrogen-sensitive breeding studies • Reproductive toxicology • Oncology

* Expected range of genistein + daidzein (aglycone) based on quarterly measurement of diet

TEKLAD GLOBAL RODENT DIETS - DESIGNED TO REDUCE EXPERIMENTAL VARIABILITY

- Modern formulations
- Levels of protein, energy, vitamins and minerals more closely align with nutritional requirements
- Reduce or eliminate soybean meal, and exclude alfalfa meal, the major sources of phytoestrogens in rodent diets
- Vegetarian diets eliminate nitrosamines as a research variable
- Available globally to promote protocol consistency

VARIATIONS IN PRODUCT CODE NOMENCLATURE

- '9' in the second digit - the diet has been irradiated
- 'S' - the autoclavable version, supplemented with vitamins to account for presumed losses
- 'X' - extruded form; exception is 2019 which is extruded
- 'C' - certified; a representative sample is tested for a panel of contaminants
- 'M' - meal form
- 'MI' - product produced at Mucedola, Italy

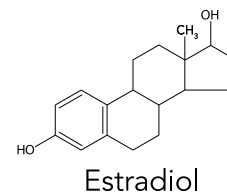
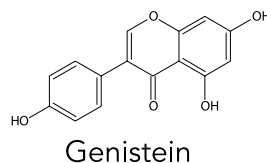
Not all product combinations are produced regularly or stocked locally.



Ingredient selection

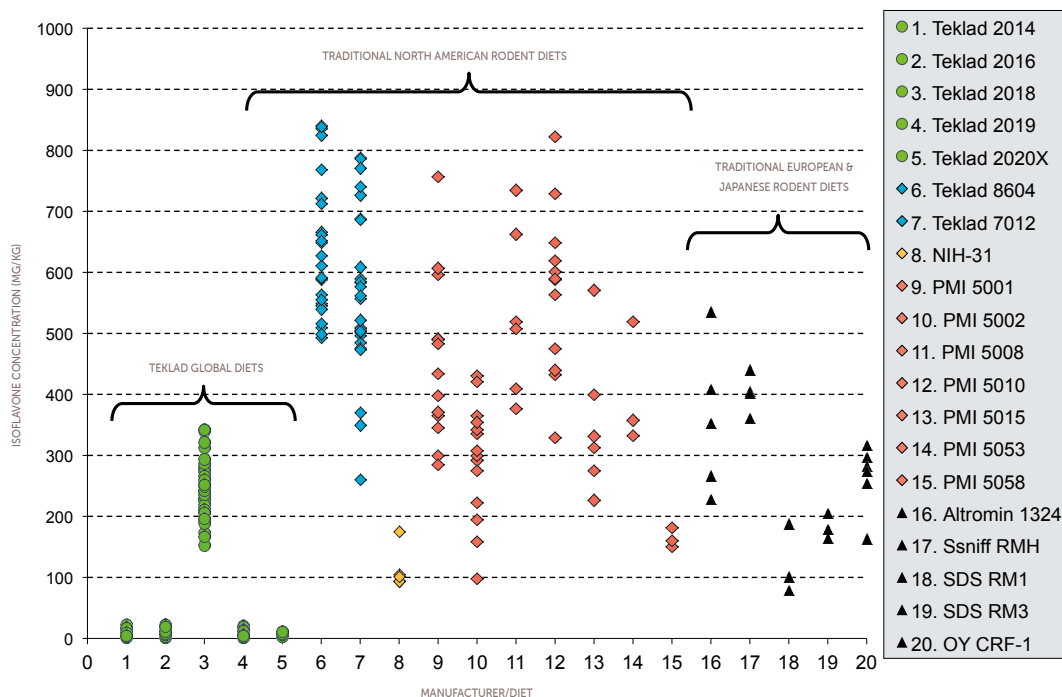
THE KEY TO REDUCING RATHER THAN INTRODUCING VARIATION

INGREDIENT	COMPONENT	SIGNIFICANCE
Soybean meal	Isoflavones: Genistein, Daidzein	Selective Estrogen Receptor Modulator
Alfalfa meal	Coumestrol	Selective Estrogen Receptor Modulator
	Chlorophyll	Interferes with fluorescent imaging
Fish meal Meat meal	Nitrosamines	Potential carcinogen



VARIATION IN ISOFLAVONE LEVELS (GENISTEIN + DAIDZEIN) BETWEEN DIETS AND WITHIN BATCHES OF THE SAME DIET

Plot shows isoflavone levels for traditional diets from North America (blue, yellow, red), Europe and Japan (black) and Teklad Global Rodent Diets (green). Data is compiled from published literature and commercial laboratory analysis. Each symbol is one value; symbols within a column denote multiple values for that diet.



For experimental endpoints sensitive to isoflavones, batch-to-batch variation can lead to inconsistency, confounding your interpretation of results.



KEY PRINCIPLES

- Isoflavone range in rodent diets that contain soybean meal is 100-700 mg/kg
- Estrogen receptors (ER) are widely distributed in tissues
- Isoflavones have considerable access to ER by virtue of high serum levels

References: inotiv.com/phytoestrogen-references

CHALLENGE: ISOFLAVONES IMPACT RESEARCH

- No simple absolute threshold for the physiological effects of phytoestrogens
- Difficult to predict magnitude and direction of response
- Their action reduces effectiveness of animal model
- Preclinical research in rodent models fed diets containing soybean meal may not translate to human populations due to differences in consumption levels and metabolism

ADDITIONAL RESOURCES:

- Dietary phytoestrogens, a source of research variation, Volume 1
- Phytoestrogens limit translation of preclinical results to clinical outcomes - Volume 2"

WAYS IN WHICH ISOFLAVONES IMPACT RESEARCH

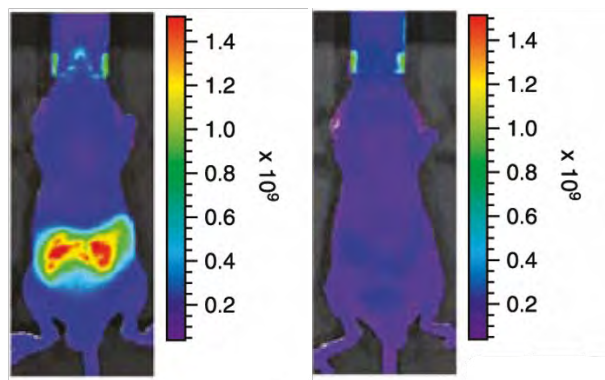
RESEARCH AREA	EFFECTS DESCRIBED IN THE LITERATURE
Oncology	Modulate tumor growth, latency, multiplicity, metastasis; diminish action of drugs such as tamoxifen and letrozole.
Reproductive	Increase uterine weight; accelerate vaginal opening; affect response to exogenous estrogens/xenobiotics.
Endocrine	Differences in body composition (weight, adiposity), glucose and insulin homeostasis, bone density, and blood pressure.
Neuroscience	Performance differences on tests measuring anxiety behaviors and response to pain stimuli.
Immunology	Modulate immune organ development; display anti-inflammatory and antioxidant actions.

Solution: Inotiv's minimal isoflavone Teklad diets lead to reliable, repeatable research results.



Teklad Global Rodent Diets

FOR FLUORESCENT IMAGING



- Exclusion of alfalfa meal practically eliminates chlorophyll, the source of autofluorescence in the gut region
- Teklad Global Rodent Diets significantly reduce background autofluorescence and are suitable for many imaging applications

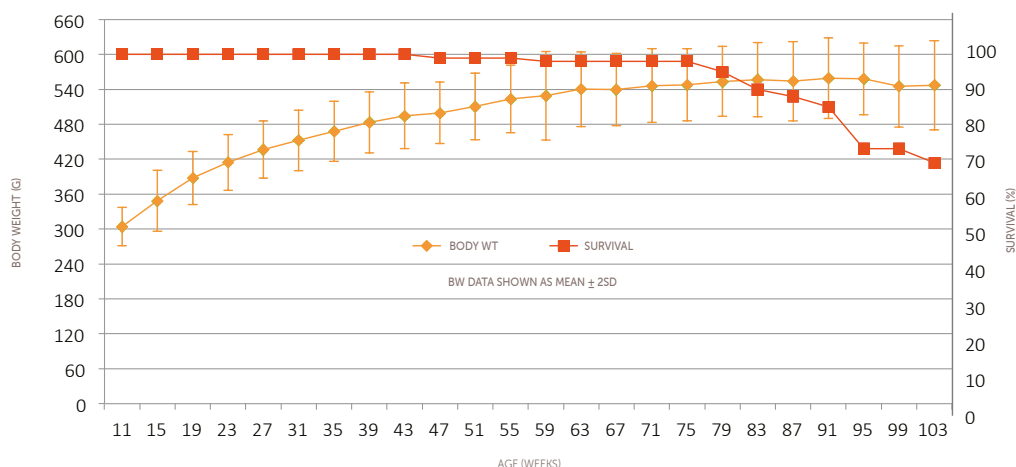


Teklad Global Rodent Diets

DESIGNED TO IMPROVE ANIMAL WELFARE

- Other commonly used diets supply protein well in excess of requirements and can contribute to early mortality
- There are benefits to lower protein, lower energy standard diets for toxicology and safety studies

GROWTH AND SURVIVAL CURVES



Model

- Hsd:Sprague Dawley® SD® males (n=200)

Diet

- Teklad 2014 (14% protein) starting at 8 weeks of age

Results

- Body weight plateaus at ~550 grams without diet restriction; compare to CD® IGS rat which are 100-200 grams heavier when fed more typical standard diets.
- Survival at 2 years ~68%; compare to typical 2 year survival in CD® IGS rat of ~35-40%.



Teklad Global Diets® at a glance

SPECIES	RODENT					CANINE		
Product	2014	2016	2018	2019X	2020X	2021	2025	2027
Irradiated (29xx)	2914	2916	2918	2919X	2920X			
Certified (C)	2014C	2016C	2018C			2021C	2025C	2017C
Autoclavable (S)			2018S 2018SX	2018SX	2020SX			
Extruded (X)			2018SX	Standard	Standard	Standard	Standard	Standard
KEY FEATURES								
	14% Protein 4% Fat	16% Protein 4% Fat	18% Protein 6% Fat Moderate Phytoestrogen	19% Protein 9% Fat	19% Protein 6% Fat	21% Protein 6% Fat	25% Protein 9% Fat	27% Protein 16% Fat
	- Vegetarian (no nitrosamines) - Minimal phytoestrogen (2014, 2016, 2019X, 2020X) - Suitable for imaging studies (no alfalfa meal) - Extruded versions dramatically reduce clumping and hardening after autoclaving and reduce waste					- High-quality poultry by-products - Smooth transition between diets - Options for all life stages - All options certified		
PURPOSE AND BENEFITS								
	- Prolonged Maintenance - Aging - Toxicology - Oncology	- Growth - Maintenance - Toxicology - Oncology	- Breeding - Growth - Maintenance - General Purpose	- Breeding - Genetically engineered mice - Poorly performing strains - Oncology	- Breeding - General purpose - Estrogen-sensitive breeding studies - Reproductive Toxicology - Oncology	Maintenance	- Gestation - Lactation - Growth - Maintenance	- Gestation - Lactation - Growth
CALCULATED AVERAGE NUTRIENT PROFILE (AS FORMULATED)								
Protein %	14.3	16.4	18.4	19.2	19.4	21.0	26.3	28.6
Fat %	3.7	3.7	6.0	9.0	6.5	6.7	10.5	16.8
Crude Fiber %	4.1	3.3	3.5	2.6	2.7	4.0	3.0	2.7
NDF %	18.0	15.2	14.7	12.1	12.3	13.7	11.5	9.5
Energy Density								
Kcal/g	2.9	3.0	3.1	3.3	3.1	3.2	3.5	3.8
KJ/g	12.1	12.6	13.0	13.8	13.0	13.4	14.6	15.9
FIXED-FORMULA - ACHIEVING HIGH CONSISTENCY OF NUTRIENTS COUPLED WITH THE SAME INGREDIENT INCLUSIONS IN EVERY BATCH								
	✓	✓	✓	✓	✓	✓	✓	✓

¹ Neutral detergent fiber (NDF) is an estimate of insoluble fiber, including cellulose, hemicellulose, & lignin. Crude fiber methodology underestimates total fiber.

Product	Irradiated	Autoclavable
- Not all products are stocked locally, but are available upon request with extended lead time and additional fees. - All diets can be available in meal form (M); some may require extended lead time and additional fees.	- The irradiated version is identical to the standard version, with the exception of packaging. - The "9" in the second position of the product code denotes the product has been irradiated.	The autoclavable version (S) differs in the level of vitamin supplementation, which is increased to account for presumed losses due to autoclaving.



Teklad Global Diets® at a glance

Species	Rabbit		Guinea Pig		Primate			Feline	Ferret
Product	2030	2031	2040	2041	2050, 2050A	2055	2056	2060	2072
Irradiated (29xx)	2930	2931	2940	2941					
Certified (C)	2030C	2031C	2040C	2041C	2050C	2055C	2056NC	2060C	2072C
Autoclavable (S)									
Extruded (X)					Standard	Standard	Standard	Standard	Standard
Key Features									
	14% Protein 3% Fat • Vegetarian	14% Protein 2% Fat • Vegetarian • Higher Fiber	18% Protein 3% Fat • Moderate Phytoestrogen	17% Protein 4% Fat • Higher Fiber	20% Protein 4% Fat • Higher Fiber	25% Protein 5% Fat	23% Protein 6% Fat • Vegetarian • Minimal Phytoestrogen	32% Protein 12% Fat • Includes a urinary acidifer	36% Protein 18% Fat • Highly Digestible • Low ash poultry by-products
		Global Guinea Pig diets are fortified with stabilized vitamin C			Global Primate diets are fortified with stabilized vitamin C				
Purpose and Benefits									
	• Gestation • Lactation • Growth	• Maintenance • Long-Term Studies	• Gestation • Lactation • Growth	• Maintenance	• Gestation • Lactation • Growth • Maintenance	• Gestation • Lactation • Growth • Maintenance	• Gestation • Lactation • Growth • Excludes Wheat Gluten • May improve stool consistency • Maintenance	• Gestation • Lactation • Growth • Maintenance	• Gestation • Lactation • Growth • Maintenance
Calculated Average Nutrient Profile									
Protein %	17.2	14.5	19.2	17.6	20.0	25.6	23.9	34.0	39.0
Fat %	3.0	2.5	3.0	4.5	5.4	5.9	6.6	13.2	20.0
Crude Fiber %	13.7	22.8	12.2	15.8	8.8	3.5	3.1	1.8	1.2
NDF %	29.2	39.4	25.2	32.0	18.4	9.2	11.6	6.7	4.4
Energy Density									
Kcal/g	2.4	2.0	2.5	2.4	2.8	3.2	3.2	3.5	3.8
KJ/g	10.0	8.4	10.5	10.0	11.7	13.4	13.4	14.6	15.9
Fixed Formula - Achieving high consistency of nutrients coupled with the same ingredient inclusions in every batch									
	✓	✓	✓	✓	✓	✓	✓	✓	✓

Extruded

- For rodent diets, the combination of the extruded form (X) and appropriate fortification allows for superior autoclaving quality (decreased hardness and clumping) where problems are experienced with the autoclavable pellet form. Waste and fines are also dramatically reduced.

Certified

- There are no differences in the formula, ingredients, manufacturing standards, and quality control processes between non-certified and certified diets.
- A representative sample is tested for a panel of contaminants. This panel varies by region (US vs. Europe) reflecting differences in regulatory standards; contact local representatives for more information.
- If not stocked as certified (C), GLP certification can be made available by request, but a minimum order size or charge may be required.





Custom research diets, medicated diets

Teklad

CUSTOM RESEARCH DIETS

Custom diets are developed for a specific purpose and benefit from your input and our expertise. With more than 20,000 formulas in our database attained over 40 years, Inotiv nutritionists have vast experience to draw upon. We are committed to developing and maintaining long-term client relationships.

USE CUSTOM RESEARCH DIETS TO:

Control nutrients

- Vitamin or mineral adjusted
- Protein or amino acid adjusted
- Lipid or fatty acid adjusted
- Fiber adjusted

Induce disease

- Atherogenic (cholesterol, fat, cholate)
- Diet-induced obesity (40-60% fat kcal)
- High carbohydrate (fructose, sucrose)
- NaCl adjusted
- MASLD and MASH
- Cuprizone demyelination

Dose animals

- Control of gene expression - doxycycline or tamoxifen containing diets
- Addition of client-supplied ingredients/compounds

Teklad custom diets are shipped throughout the world. Check with your local client service regarding requirements.

MEDICATED DIETS

As some compounds are best administered orally, several medicated diets are available from stock. Use as directed by a veterinarian.

T.2018.12F2 2018 Rodent Diet with 150 ppm
Fenbendazole

Other medicated diets are available in small-scale or large-scale production. Contact us for more details.

ENRICHMENT PRODUCTS

We offer several unique environmental enrichment items, featuring our 1922 Irradiated Enrich Mix for non-human primates. Cotton-based iso-PADS™, Diamond Twist and iso-BLOX™ enrichment and nesting materials for rodents combine enrichment with superior product sanitation and safety (no long strands or fibers).

Based on the nature of the products, some cannot be exported overseas without proper import licenses in the specific country of destination.



Ask a nutritionist!

Chat with one of our nutritionists online to discuss lab animal diet options, get technical support and product codes.

[inotiv.com/laboratory-animal-diets](https://www.inotiv.com/laboratory-animal-diets)
askanutritionist@inotiv.com

Bedding



Your animals are in continuous contact with bedding, yet its importance is often overlooked.

Inotiv offers a full line of Teklad bedding, including corn cob, wood and paper products, with these advantages:

- Most have been thoroughly tested in our animal barriers
- Several are produced in a bedding plant, uniquely dedicated to production for the research community
- Many certified options are available
- Most beddings are also available in irradiated format

BEDDING – PAPER

- 7070C Certified Diamond Dry Bedding
- 7084 Pelleted Paper Bedding
- 7089C Certified Diamond Soft Bedding
- 7099 TEK-Fresh™ Bedding and 7099W White TEK-Fresh™ Bedding
- 7094 Ultrasoft Bedding
- 7177C Diamond Sort Twist - NEW Enriched Bedding

BEDDING – WOOD ⚠️

- 7090A Sani-Chips® Bedding - Aspen
- 7090M Sani-Chips® Bedding - Maple
- 7090C Certified Sani-Chips® Bedding
- 7093 Shredded Aspen Bedding

BEDDING – CORNCOB

- 7092 1/8" Corncob Bedding
- 7097 1/4" Corncob Bedding
- 7087C Certified Soft Cob Enrichment Bedding
- 7076 Corncob Twist - NEW Enriched Bedding

CUSTOM CUT LINERS

- Diamond-TEK white dimpled cage board
- Diamond Pad white multi-ply tissue liners with poly backing



WARNING: This product can expose you to wood dust, a chemical which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

Custom research diet animal maintenance

Cohorts of HsdBlu:LE rats, Hsd:Sprague Dawley® SD® rats, C57BL/6NHsd mice, and other stocks and strains of Inotiv rodents, can be maintained on custom research diets within our maximum security production barriers.

The rodents are fed diets specified by the client for defined periods of time prior to shipment. Animals are shipped to the client using Inotiv environmentally controlled vehicles. Custom research diet animal maintenance for client-owned animals is also available.

BENEFITS OF INOTIV CUSTOM DIET ANIMAL MAINTENANCE

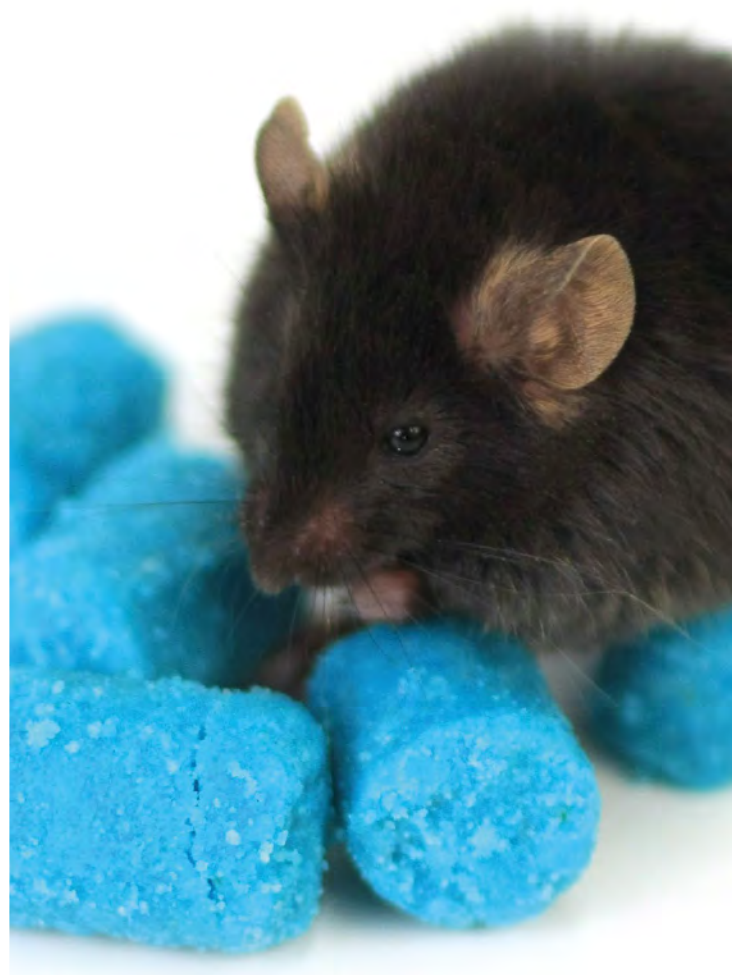
- Inotiv Teklad nutritionists, in collaboration with requesting investigators, customize the research diets to adjust nutrients and achieve experimental objectives.
- Animals are maintained on client customized diets within Inotiv maximum security production barriers until shipment.
- Health and genetic integrity of the models are protected.
- Reallocation of labor and other institutional resources.
- Development of in-house diet maintenance protocols is eliminated.
- The same diet can be fed after delivery to the client.

RESEARCH USE

- Obesity
- Diabetes mellitus
- Hypertension
- Hypercholesterolemia
- Osteoporosis
- Physiology
- Nutrition
- Pharmacology

DIET-INDUCED OBESITY (DIO) RODENT MODELS

- Randomly selected rats and mice are fed Inotiv Teklad irradiated custom research diets until approximately 14 weeks of age or as specified.
- Animals are provided ad libitum diet and automated water and weighed per client's protocol.
- Data for C57BL/6NHsd male mice, initiated on diet at three, six and nine weeks of age, available upon request.



Genetically engineered Models by CRISPR

RAT AND MOUSE MODELS TO YOUR SPECIFICATION IN AS FEW AS 4 MONTHS

Looking for an animal model to fit your specific research needs?

First, we reimagined the possibilities of genetic engineering in rats. Now we offer introduced the world's fastest custom *in vivo* model generation service, powered by CRISPR-Cas9 genome editing technology. Go from idea to rat or mouse model in under half the time of traditional ES-cell based methods.

HOW IT WORKS

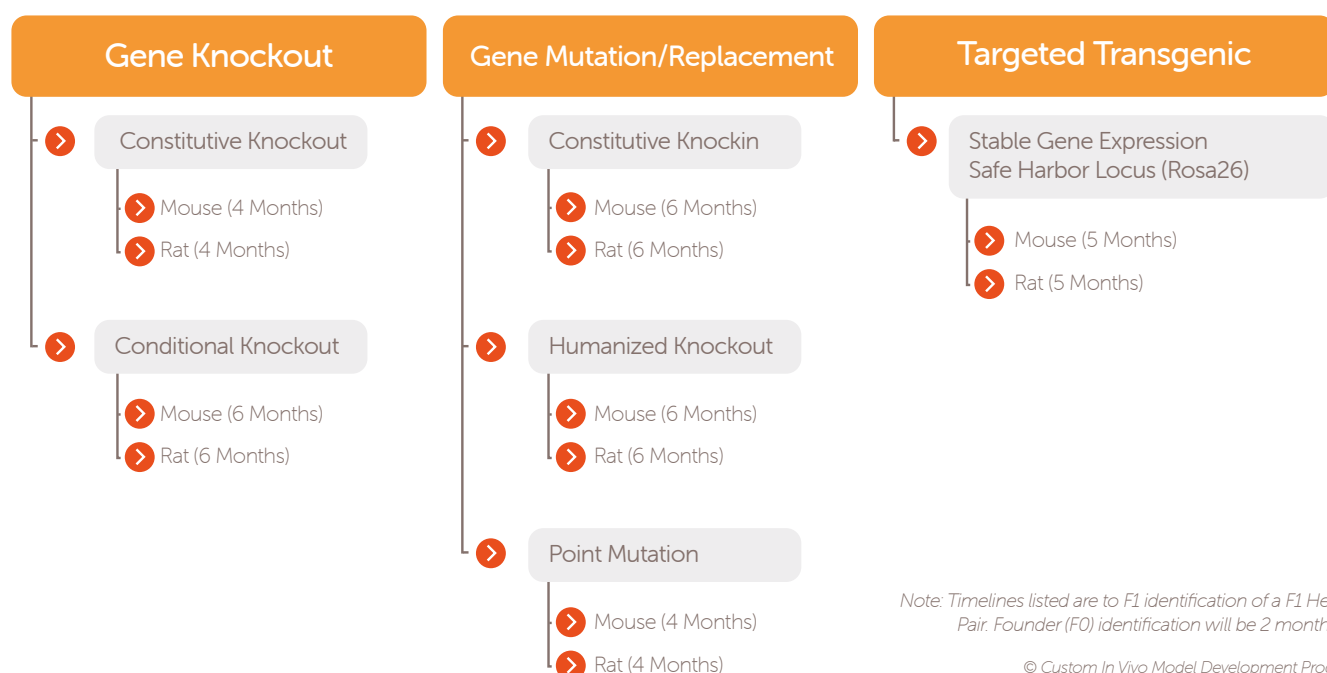
Looking for a knockout rat or mouse not included in our standard model portfolio?

Your Inotiv *in vivo* model development specialist will work with you to design a custom model to your exact specifications, using our CRISPR/Cas9 (licensed by The Broad Institute and ERS Genomics) or Zinc Finger Nuclease technologies licensed by MilliporeSigma, in as few as 4 months.

Using our Custom Model Builder, simply select your species, strain, gene of interest and desired mutation, and we will generate a model specific to your downstream research applications.

ADVANTAGES OF OUR ANIMAL MODEL CREATION

- Exclusive options—mice and rats, any strain
- Longest nuclease based expertise in the industry
- F1 breeding pair delivered in as few as 4 months
- Guaranteed germline transmission
- Reagent design, construction and validation
- Comprehensive project management
- Detailed, formal project reports



Contract breeding services

With decades of experience in the breeding world, Inotiv is a trusted partner in delivering high-quality, end-to-end breeding programs that support scientific progress.

Our expertise has been shaped through long-standing collaboration with researchers, enabling us to provide precise, dependable, and tailored support at every stage. Today, we apply that deep technical knowledge and operational discipline to help research organizations worldwide maintain high standards, meet timelines, and achieve their study goals - on time and on budget.

We approach each project with a scientist's perspective and a clear understanding of the importance of data integrity, timelines, and responsible breeding practices. We recognize that high standards of animal welfare are essential - not only for ethical reasons, but also for generating reliable, reproducible results. These considerations are built into every breeding strategy we design. This is why researchers trust Inotiv not just as a provider, but as a partner in delivering successful outcomes.



Contract breeding cohort supply

Ensure planned, regular supply batches of models bred, pre-conditioned and delivered to your facilities. Add-on from our integrated service spectrum to improve welfare and research efficiency.



Quarantine

Prevent the risk of introducing pathogens to your facility by utilizing Inotiv's isolators to quarantine, test, revitalize or rederive the models you need from other facilities with an unknown health status.



Health status verification

Verify and maintain the health of your colonies with our in-house full spectrum health monitoring program. All of our standard and contract bred models are guaranteed to be specific pathogen free.



Surgical Services

Access to highly skilled surgical teams combined with expert solutions and a first-in-class surgical model tracking system.



Cryopreservation

Reduce the risk of losing a valuable cohort through genetic or pathogen contamination or catastrophe, and eliminate needless breeding through cryopreservation.



Genotyping, preconditioning, and aging

Leverage Inotiv's expertise in breeding to deliver pre-determined cohorts of known-sex, confirmed phenotype or genotype models at the right age to suit your specific research needs.



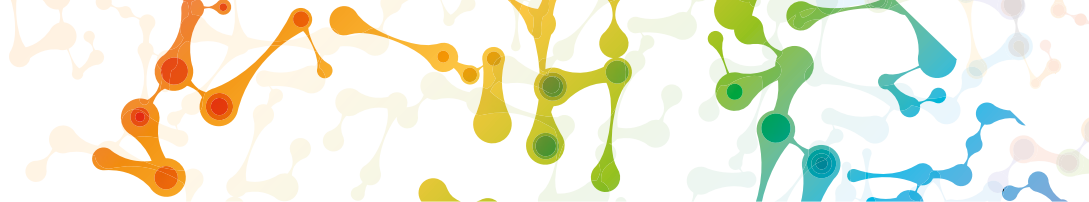
Rederivation and revitalization

Bring cohorts back to their ideal state in the shortest time possible or completely refresh colonies from cryopreserved material.



Custom model generation

Partner with our experienced scientists to design and genetically engineer a rodent model to meet your specific needs using CRISPR and ZFN technologies.



REDERIVATIONS AND SPEED REDERIVATIONS - RAT AND MOUSE

Inotiv uses embryo transfer to generate small cohorts of clean animals suitable for re-establishing valuable lines. Speed rederivation options are also available and can be tailored to meet individual project needs. Once rederivation is complete, you have the option to sustain your line at Inotiv for continued colony maintenance and breeding.

Rederivations

SERVICE	REQUIREMENTS	PROJECT OUTCOME
Rederivation with health screening	• 5 donor males (6-27 wk) • 10 donor females (3-4 wk) or • 15 wild-type donor females (3-4 wk) • Genotype and background of donors	• Small cohort with a specified health status • Shipping and container fees are additional • Alternatively, maintain and breed colony through Contract Breeding Services
Speed rederivation with shipment of pregnant recipient females	• 5 donor males (6-27 wk) • 10 donor females (3-4 wk) or • 15 wild-type donor females (3-4 wk) • Genotype and background of donors	• Minimum of 2-3 pregnant recipient females at 7-14 days post embryo transfer • Health screening, shipping and container fees are additional

CRYOPRESERVATION - RAT AND MOUSE

Inotiv offers embryo and sperm cryopreservation services as a reliable way to preserve the genetic integrity of valuable strains. This approach helps safeguard against colony loss and, by limiting continuous breeding, supports the principles of the 3Rs. Sperm cryopreservation requires fewer donor animals, making it more efficient in some cases, but it preserves only a haploid genome and may not be suitable for all models - particularly those on a mixed genetic background.

Cryopreservation - Embryo or Sperm

SERVICE	REQUIREMENTS	PROJECT OUTCOME
Embryo cryopreservation using homozygous, heterozygous or wild type females - Mouse and Rat	• 6-8 donor males (6-27 wk) • 35 wild-type donor females (3-4 wk) • Genotype and background of donors • Copy of the latest health report	• Approximately 200-300 embryos • <i>In vitro</i> QC • Free storage for the first year
Mouse Sperm cryopreservation	• 2-4 donor males (6-27 wk) • Genotype and background of donors • Copy of the latest health report	• Approximately 20-22 straws • <i>In vitro</i> fertilization QC (2 cell embryo stage) • Free storage for the first year
Site Storage Fees		• Site storage, first year is free • Up to 500 embryos in total • Up to 50 straws of sperm in total
Live Birth Quality Control for Mouse or Rat Cryopreserved Embryos	• 40 embryos, minimum	• <i>In vivo</i> QC to generate live offspring • Viable embryos transferred into recipient animals to generate live offspring • Confirmation of embryo viability
Live Birth Quality Control for Mouse Cryopreserved Sperm	• 2-3 straws of sperm	• <i>In vitro</i> QC to generate live offspring • Viable embryos transferred into recipient animals to generate live offspring • Confirmation of sperm viability

The above tables are guidelines to achieve the projected outcome. Your project manager will work with you to customize a plan that best suits your needs.

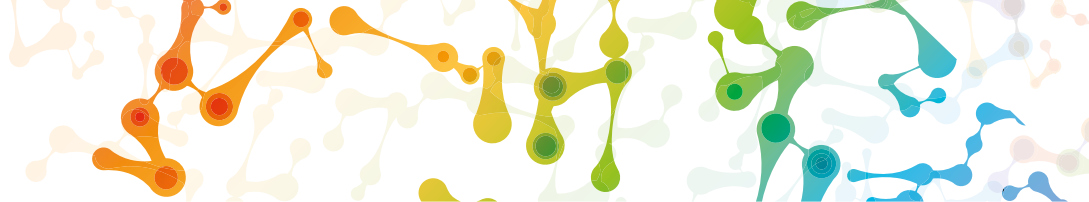
REVITALIZATION OF EMBRYO OR SPERM - RAT AND MOUSE

Revitalization is a procedure used to establish a small cohort of specific pathogen free animals from cryopreserved material (embryos or sperm). Inotiv offers several revitalization options:

Revitalization - Cryopreserved Embryo or Sperm

SERVICE	REQUIREMENTS	PROJECT OUTCOME
Revitalization of embryos with health screening – Mouse and Rat	• 100 cryopreserved embryos • Freezing and thawing protocol • QC report	• Small cohort with a specified health status • Includes rederivation services, recipient and offspring housing and health monitoring
Revitalization of sperm with health screening – Mouse only	• 3-5 straws of cryopreserved sperm • Freezing and thawing protocol • QC report	• Small cohort with a specified health status • Includes rederivation services, recipient and offspring housing and health monitoring

The above tables are guidelines to achieve the projected outcome. Your project manager will work with you to customize a plan that best suits your needs. Once completed, you have the option of maintaining your line at Inotiv for continued colony maintenance and breeding.



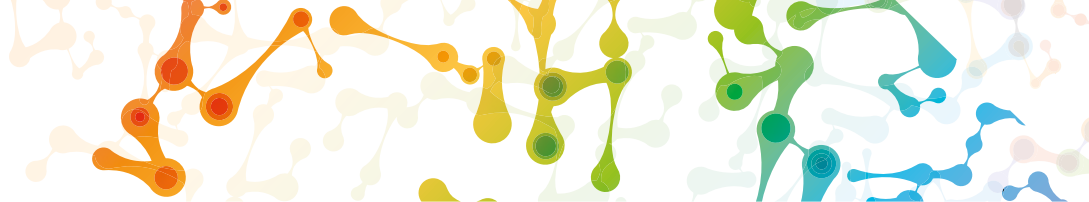
CRYO/REDERIVATION COMBO - RAT AND MOUSE

In some situations, it can be efficient to combine rederivation or revitalization with simultaneous cryopreservation of embryos or sperm. This approach supports the generation of specific pathogen-free animals while preserving the line for future use - all in a single, streamlined process. Inotiv offers flexible, cost-effective options to support this combined strategy. Once complete, you also have the option to maintain your line at Inotiv for continued colony management and breeding.

Cryo/Rederivation combo

SERVICE	REQUIREMENTS	PROJECT OUTCOME
Mouse Embryo	• Wildtype or customer females • Donor males and/or females (strategy dependent) • Genotype and background of donors • Copy of the latest health report	• Rederivation or revitalization to generate a small cohort of offspring at a specified health status. • Cryopreservation of 150 embryos • Includes • Donor animal housing • Recipient and offspring housing • Health monitoring • <i>In vitro</i> culture QC • Dual storage site, free for the first year • Recipient and offspring housing is available until 6 weeks of age
Rat Embryo	• Wildtype or customer females • Donor males and/or females (strategy dependent) • Genotype and background of donors • Copy of the latest health report	• Rederivation or revitalization to generate a small cohort of offspring at a specified health status. • Cryopreservation of 100 embryos • Includes • Donor animal housing • Recipient and offspring housing • Health monitoring • <i>In vitro</i> culture QC • Dual storage site, free for the first year • Recipient and offspring housing is available until 6 weeks of age
Mouse Sperm	• Wildtype or customer females • Donor males and/or females (strategy dependent) • Genotype and background of donors • Copy of the latest health report	• Rederivation or revitalization to generate a small cohort of offspring at a specified health status. • Cryopreservation of 10-12 straws of sperm • Includes • Donor animal housing • Recipient and offspring housing • Health monitoring • <i>In vitro</i> culture QC • Dual storage site, free for the first year • Recipient and offspring housing is available until 6 weeks of age

The above tables are guidelines to achieve the projected outcome. Your project manager will work with you to customize a plan that best suits your needs.



CONTRACT BREEDING ISOLATOR SERVICES - RAT AND MOUSE

For situations in which it is not practical for you to breed and maintain your colonies within your own facility, Inotiv provides 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. This service allows you to conserve facility space, reduce operational burden, and stay focused on your research.

Contract Breeding Services

SERVICE	DESCRIPTION
Isolator breeding for mice	Routine Husbandry + breeding / reporting / HM / Fixed fee per isolator, additional fees per cage per week
Isolator breeding for rats	Routine Husbandry + breeding / reporting / HM / Fixed fee per isolator, additional fees per cage per week
Implantable Transponder ID Chip - Animal Identification	ISO Transponder Chip for animal identification - per individual chip
IVC or Open top caging	Routine husbandry + breeding / reporting / HM / fee per cage per week

Housing is subject to availability. Rederivation may be required depending on caging and location.

BENEFITS TO OUTSOURCING YOUR BREEDING PROJECT

- Fully integrated service solutions
- Cohort planning support to reduce waste and avoid overproduction
- Active project management with responsive, personalized communication
- Tailored breeding strategies and flexible housing options
- Genetic integrity and health assurance through robust monitoring programs and controlled breeding strategies
- 24/7 online access to colony data via LabTracks™
- Extensive breeding expertise across a wide range of species and model types
- Easy access to Inotiv animals for cross-breeding or rederivation
- Access to a global network of breeding sites in North America, the UK, and mainland Europe
- Integrated pipeline from colony management to preclinical testing including surgical services, model development and characterisation.

For more information on our services and to request a quote on your next project, please contact us in North America at servicesPMG.US@inotiv.com or in Europe at servicesPMG.EU@inotiv.com.



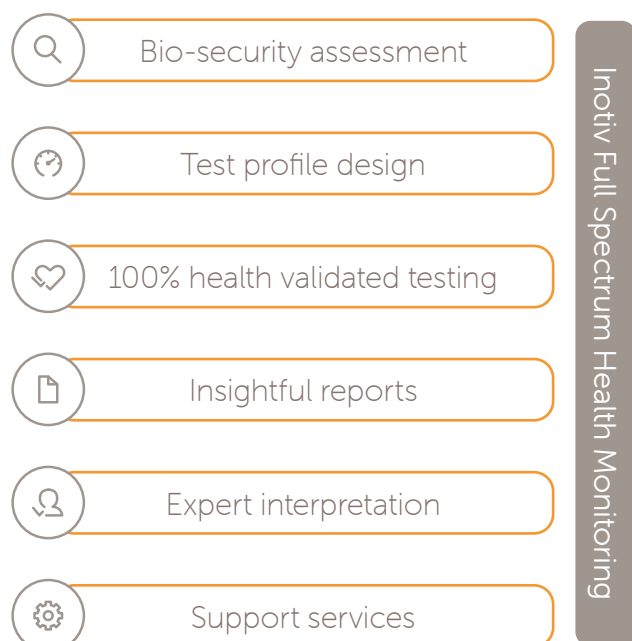
Inotiv utilizes LabTracks™ software system, by Locus Technology, Inc., which provides a fully integrated on-line colony management system that supports daily inventory data, cryopreserved materials, animal husbandry and information on cage capacity for each project via a secured web portal. Our customers have secured access to only their project information at their own convenience, 24/7.

Full spectrum health monitoring

DESIGN. TEST. REPORT. INTERPRET.

The maintenance of healthy animal populations is vital to research integrity. Today's facility managers have to manage an increasingly complex research environment, balancing these pressures with the significant consequences of an outbreak mid-way through a research project.

Full Spectrum health monitoring supports facility managers in maintaining healthy research colonies. At its core is the ability to submit a wide range of NSP (non-sacrificial panel) samples as well as animals for testing on the best technology for target pathogens. This capability is underpinned with access to our experienced staff who are able to help identify vulnerabilities and build bio-secure processes, design test profiles that meet your research needs, provide insightful test reports, and be on hand to respond to bio-security issues should they occur.

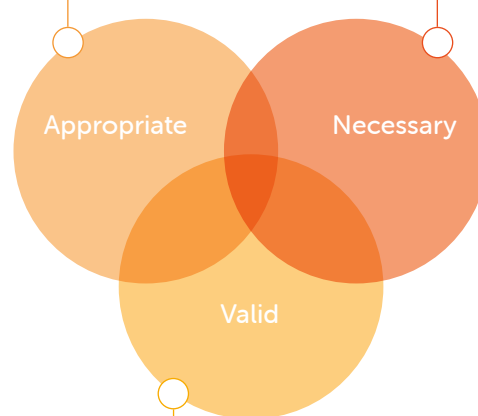


APPROPRIATE. NECESSARY. VALID.

Full Spectrum health monitoring utilizes test methods that have been 100% health validated for each target pathogen. We can do this because we are not tethered to a particular technology, enabling us to provide our customers with test profiles that are **appropriate**, **necessary** and **valid**.

Appropriate: As breeders and researchers, we understand what health monitoring protocols are appropriate to your specific research needs.

Necessary: With so many new pathogens available for test, we know what is – and is not – necessary to be included in test protocols.



Valid: Because Inotiv is not tethered to a particular technology, our health monitoring solution uses the best test methodology for each pathogen. And we only use 100% health validated techniques, ensuring you have meaningful results.

We select the best technology for each target pathogen and, where necessary, utilise secondary test methods to verify results. Inotiv maintains a variety of test technology methods in-house at facilities in the UK and mainland Europe, including PCR and rtPCR, ELISA, IFA, Vitek2, and MFIA.

See www.inotiv.com/fullspectrum for more information.

INOTIV DIAGNOSTIC LABORATORIES

Inotiv maintains its own diagnostic laboratory for customer health monitoring submissions in the UK, mainland Europe and Asia. Additional commercial diagnostic laboratories are utilised as necessary, in particular to confirm positive, borderline results.

Although we have pricing available for fixed profiles (such as those recommended by FELASA), Inotiv seeks to understand overall customer needs and price accordingly. Research objectives, model specifics and the nature of customer facilities and processes are all variables that Inotiv seeks to understand in order to advise the most appropriate testing profiles and practices. Depending on the sample type, pooling can offer attractive discounts.

Contact us

UK: Customer Services

RMS-UK-Technical-services@inotiv.com

EU Continent: Health Monitoring Lab

healthmonitorlab@inotiv.com

VIRUS TESTING

Serological evaluations are performed on immunocompetent animals (sentinels) or samples from immunocompetent animals from within a colony. For most mouse agents, the primary test is typically MFIA (Bead), supported by ELISA / IFA where a need exists for secondary testing. Wherever possible, Inotiv promotes the appropriate use of modern NSP testing techniques. For virus testing, this typically includes serum and dried blood spot technology (DBS), but rtPCR can also be used when shipping faecal or environmental samples from IVC exhaust filters or surfaces.

Each test methodology offers additional customer benefits. Repeated use of serological testing, which uses specific antibodies to detect target agents, builds infectious trend information over time. Conversely, rtPCR testing provides and instantaneous viral picture of your colony.

POOLING

We do not recommend pooling DBS and serology samples due to the potential non-specific / idiopathic interactions between samples, causing false negative / positive reporting. Environmental samples, as well as faecal samples for rtPCR, can be tested up to a maximum of ten (10) into one, single sample.

A panel of available tests for viruses by species is listed below.

VIRUSES	TEST METHOD (RTPCR ONLY FOR MOUSE/RAT)	MOUSE	RAT	HAMSTER	GUINEA PIG	RABBIT	SAMPLE TYPE (CAN BE SPECIE SPECIFIC)
Ectromelia Virus ⁽¹⁾	MFIA / ELISA / rtPCR	✓					LA / S / DBS / F / E
Guinea Pig Adenovirus ⁽⁴⁾	ELISA / rtPCR				✓		LA / S / DBS / F / E / OS
Guinea Pig Cytomegalovirus ⁽⁴⁾	ELISA / rtPCR				✓		LA / S / DBS / F / E
Guinea Pig Parainfluenza Virus ⁽⁴⁾	ELISA				✓		LA / S / DBS
Hamster Polyoma Virus ⁽³⁾	ELISA			✓			LA / S / DBS
Hanta Virus ^(2,6)	MFIA / ELISA / rtPCR	✓	✓				LA / S / DBS / F / E
Kilham Rat Virus ⁽²⁾	ELISA / rtPCR		✓				LA / S / DBS / F / E
Lactate Dehydrogenase-Elevating Virus	ELISA / rtPCR	✓					LA / S / DBS / F / E
Lymphocytic Choriomeningitis Virus ^(1,3)	MFIA / ELISA / rtPCR	✓	✓	✓			LA / S / DBS / F / E
Minute Virus of Mice ⁽¹⁾	MFIA / ELISA / rtPCR	✓					LA / S / DBS / F / E
Mouse Adenovirus type 1 (FL) ^(1,2)	MFIA / ELISA / rtPCR	✓	✓				LA / S / DBS / F / E
Mouse Adenovirus type 2 (K87) ^(1,2)	MFIA / ELISA / rtPCR	✓	✓				LA / S / DBS / F / E
Mouse Cytomegalo Virus	MFIA / ELISA / rtPCR	✓					LA / S / DBS / F / E
Mouse Hepatitis Virus ⁽¹⁾	MFIA / ELISA / rtPCR	✓					LA / S / DBS / F / E
Mouse Noro Virus ⁽¹⁾	MFIA / ELISA / rtPCR	✓					LA / S / DBS / F / E
Mouse K-Virus	ELISA / rtPCR	✓					LA / S / DBS / F / E
Mouse Kidney Parvovirus	ELISA / rtPCR	✓					F / E
Mouse Parvo Virus (MPV-NS1) ⁽¹⁾	MFIA / ELISA / rtPCR	✓					LA / S / DBS / F / E
Mouse Polyoma Virus	ELISA / rtPCR	✓					LA / S / DBS / F / E
Mouse Rotavirus (EDIM) ⁽¹⁾	MFIA / ELISA / rtPCR	✓					LA / S / DBS / F / E
Mouse Thymic Virus	IFA / rtPCR	✓					LA / S / DBS / F / E
Pneumonia Virus of Mice ^(1,2)	MFIA / ELISA / rtPCR	✓	✓	✓			LA / S / DBS / F / E / OS
Rabbit Adeno Virus	ELISA / rtPCR					✓	LA / S / DBS / F / E
Rabbit Corona Virus	ELISA					✓	LA / S / DBS
Rabbit Haemorrhagic Disease Virus ⁽⁵⁾	ELISA / rtPCR					✓	LA / S / DBS / F / E
Rabbit Pox Virus (Myxomatosis)	ELISA / rtPCR					✓	LA / S / DBS / F / E
Rabbit Rotavirus ⁽⁵⁾	ELISA / rtPCR					✓	LA / S / DBS / F / E
Rabbit calicivirus	rtPCR					✓	F / E
Rat Minute Virus ⁽²⁾	ELISA / rtPCR		✓				LA / S / DBS / F / E
Rat Parvo Virus (type 1 and 2) ⁽²⁾	ELISA / rtPCR		✓				LA / S / DBS / F / E
Rat Polyomavirus ⁽²⁾	ELISA / rtPCR		✓				DBS / F / E / OS
Rat Theilo Virus ⁽²⁾	ELISA / rtPCR		✓				LA / S / DBS / F / E
Reovirus Type 3 ^(1,2)	MFIA / ELISA / rtPCR	✓	✓				LA / S / DBS / F / E
Sendai Virus ^(1,2,3,4)	MFIA / ELISA / rtPCR	✓	✓	✓	✓		LA / S / DBS / F / E
Sialodacryoadenitis / Rat Coronavirus ⁽²⁾	ELISA / rtPCR		✓				LA / S / DBS / F / E / OS
Simian Virus ⁽⁵⁾	rtPCR						F / E / OS
Theiler's Murine Encephalomyelitis Virus ⁽¹⁾	MFIA / ELISA / rtPCR	✓					LA / S / DBS / F / E
Toolan H1 ⁽²⁾	ELISA / rtPCR		✓				LA / S / DBS / F / E

- (1) Mouse agents recommended by FELASA 2014 (quarterly and/or annual)
 (2) Rat agents recommended by FELASA 2014 (quarterly and/or annual)
 (3) Hamster agents recommended by FELASA 2014 (quarterly and/or annual)
 (4) Guinea pig agents recommended by FELASA 2014 (quarterly and/or annual)
 (5) Rabbit agents recommended by FELASA 2014 (quarterly and/or annual)
 (6) Includes Hantaan, Seoul and Sin Nombre strains

Sample type:

DBS: Dry Blood Spot
 F: Faecal
 FS: Fur Swab
 E: Environmental material (filter, swabs, other)
 LA: Live Animal
 OS: Oral Swab
 S: Serum

BACTERIOLOGY

Cultured bacteria testing is used to detect pathogens unsuitable for serological techniques. Cultures are generated using samples (swabs or faeces) from specific sites on the animal. These can be taken from live animals at our laboratory or shipped as samples (oral, faecal) collected from animals at customer facilities utilising Inotiv's sampling kits for easy collection.

POOLING

Bacterial testing permits the pooling of samples. We recommend up to two (2) samples be pooled for oral or fur swabs. Environmental samples, as well as faecal samples for rtPCR, can be tested up to a maximum of ten (10) into one, single sample.

A panel of microbiological agents by species for bacteriology is listed below. Clearly highlighted are those recommended by FELASA 2014. Several rtPCR panels are available to quickly check for some prevalent agents.

BACTERIOLOGY	TEST METHOD (RT-PCR ONLY FOR MOUSE/RAT)	MOUSE	RAT	HAMSTER	G. PIG	RABBIT	SAMPLE TYPE (CAN BE SPECIE SPECIFIC)
<i>Bordetella bronchiseptica</i> ^(4,5)	Culture / rtPCR	✓	✓	✓	✓	✓	LA / F / E / OS
<i>Bordetella hinzii/pseudohinzii</i>	rtPCR	✓	✓	✓	✓	✓	E / OS
CAR bacillus ^(2,5)	ELISA / rtPCR	✓	✓		✓	✓	LA / S / DBS / F / E / OS
<i>Chlamydia caviae</i>	IFA				✓		LA / S / DBS
<i>Citrobacter rodentium</i> ⁽¹⁾	Culture / rtPCR	✓	✓				LA / F / E
<i>Clostridium piliforme</i> ^(1,2,3,4,5)	MFIA / ELISA / rtPCR	✓	✓	✓	✓	✓	LA / S / DBS / F / E
<i>Clostridium difficile</i> (toxin A+B)	rtPCR	✓	✓	✓	✓	✓	F / E
<i>Corynebacterium kutscheri</i> ^(1,3,4)	Culture / rtPCR	✓	✓	✓	✓		LA / F / E / OS
<i>Corynebacterium bovis</i> (HAC)	rtPCR	✓	✓				LA / F / E / FS
Dermatophytes	Culture / rtPCR	✓	✓		✓	✓	LA / E / FS
<i>Helicobacter</i> spp. ^(1,2,3) (<i>Bilis</i> , <i>Gammani</i> , <i>Hepaticus</i> , <i>Mastomyrinus</i> , <i>Rodentium</i> , <i>Typhlonius</i>)	rtPCR	✓	✓	✓			LA / F / E
<i>Klebsiella pneumoniae</i>	Culture / rtPCR	✓	✓	✓	✓		LA / F / E
<i>Klebsiella oxytoca</i>	Culture / rtPCR	✓	✓	✓			LA / F / E
<i>Lawsonia intracellularis</i>	rtPCR			✓			LA / F / E
<i>M. pulmonis</i> ^(1,2)	MFIA / ELISA / rtPCR	✓	✓				LA / S / DBS / F / E / OS
<i>Mycoplasma</i> spp. ^(1,2)	rtPCR	✓	✓				LA / S / DBS / F / E / OS
<i>Pasteurella multocida</i> ⁽⁵⁾	Culture / rtPCR			✓		✓	LA / OS
<i>Rodentibacter heylii</i> ^(1,2,3)	Culture / rtPCR	✓	✓	✓	✓		LA / F / E / OS
<i>Rodentibacter pneumotropicus</i> ^(1,2,3)	Culture / rtPCR	✓	✓	✓	✓		LA / F / E / OS
<i>Pneumocystis carinii</i> ⁽²⁾	IFA / rtPCR		✓				LA / S / DBS / F / E / OS
<i>Pneumocystis murina</i>	rtPCR	✓					LA / F / E / OS
<i>Pseudomonas aeruginosa</i>	Culture / rtPCR	✓	✓	✓	✓		LA / F / E
<i>Proteus</i> spp	Culture / rtPCR	✓	✓				LA / F / E
<i>Proteus mirabilis</i>	Culture / rtPCR	✓	✓				LA / F / E
<i>Proteus vulgaris</i>	Culture / rtPCR	✓	✓				LA / F / E
<i>Salmonella</i> spp. ^(1,2,3,4,5)	Culture / rtPCR	✓	✓	✓	✓	✓	LA / F / E
<i>Staphylococcus aureus</i>	Culture / rtPCR	✓	✓	✓	✓	✓	LA / F / E / OS / FS
<i>Staphylococcus xylosum</i>	Culture / rtPCR	✓	✓				LA / F / E / FS
<i>Streptobacillus moniliformis</i> ^(1,2,4)	rtPCR	✓	✓		✓		LA / F / E / OS
<i>Streptococci Beta-haemolytic</i> (Group A) ^(1,2,4)	Culture / rtPCR	✓	✓	✓	✓	✓	LA / F / E / OS
<i>Streptococci Beta-haemolytic</i> (Group B) ^(1,2,4)	Culture / rtPCR	✓	✓	✓	✓	✓	LA / F / E / OS
<i>Streptococci Beta-haemolytic</i> (Group C) ^(1,2,4)	Culture / rtPCR	✓	✓	✓	✓	✓	LA / F / E / OS
<i>Streptococci Beta-haemolytic</i> (Group G) ^(1,2,4)	Culture / rtPCR	✓	✓	✓	✓	✓	LA / F / E / OS
<i>Streptococcus pneumoniae</i> ^(1,2,4)	Culture / rtPCR	✓	✓		✓		LA / F / E / OS
<i>Treponoma paraluisanculi</i>	HA1					✓	LA / S / DBS
<i>Yersinia pseudotuberculosis</i>	Culture / rtPCR				✓		LA / F / E

- (1) Mouse agents recommended by FELASA 2014 (quarterly and/or annual)
- (2) Rat agents recommended by FELASA 2014 (quarterly and/or annual)
- (3) Hamster agents recommended by FELASA 2014 (quarterly and/or annual)
- (4) Guinea pig agents recommended by FELASA 2014 (quarterly and/or annual)
- (5) Rabbit agents recommended by FELASA 2014 (quarterly and/or annual)

Sample type:

DBS: Dry Blood Spot
 F: Fecal
 FS: Fur Swab
 E: Environmental material
 (filter, swabs, other)

LA: Live Animal
 OS: Oral Swab
 S: Serum

PARASITOLOGY

Parasitology is performed by direct microscopic examination, serology and rtPCR. The area around the ears, neck and inguinal region are evaluated for mites and lice, and the small intestinal and cecal contents are evaluated for pathogenic and non-pathogenic helminths and protozoa.

Serology is used to screen *E. cuniculi*. NSP test samples can be shipped to our laboratories to include swabs, faeces for use in rtPCR techniques. A special pinworm profile is available for rapid rtPCR testing.

PARASITOLOGY	TEST METHOD (RT-PCR ONLY FOR MOUSE/RAT)	MOUSE	RAT	HAMSTER ³	G. PIG ³	RABBIT ³	SAMPLE TYPE (CAN BE SPECIE SPECIFIC)
Ectoparasites (Mites) ^(1,2)							
<i>Myocoptes musculus</i>	Microscope / rtPCR	✓	✓				LA / E / FS
<i>Myobia musculi</i> / <i>Radfordia</i>	Microscope / rtPCR	✓	✓				LA / F / E / FS
<i>Demodex</i>	rtPCR	✓	✓				F / E / FS
Endoparasites ^(1,2)							
<i>Aspicularis tetraptera</i>	Microscope / rtPCR	✓	✓				LA / F / E
<i>Chilomastix spp</i>	Microscope / rtPCR	✓	✓				LA / F / E
<i>Cryptosporidium spp</i>	rtPCR	✓	✓				F / E
<i>Eimeria spp</i>	Microscope / rtPCR	✓	✓				LA / F / E
<i>Entamoeba Histolytica</i>	rtPCR	✓	✓				F / E
<i>Entamoeba muris</i>	Microscope / rtPCR	✓	✓				LA / F / E
<i>Entamoeba spp</i>	rtPCR						F / E
<i>Giardia muris</i>	Microscope / rtPCR	✓	✓				LA / F / E
<i>Giardia spp</i>	Microscope / rtPCR	✓	✓				F / E
<i>Passalurus ambiguus</i>	rtPCR	✓	✓				F / E
<i>Syphacia obvelata</i>	Microscope / rtPCR	✓	✓				LA / F / E
<i>Syphacia muris</i>	Microscope / rtPCR	✓	✓				LA / F / E
<i>Spironucleus muris</i>	Microscope / rtPCR	✓	✓				LA / F / E
<i>Tritrichomonas muris</i>	Microscope / rtPCR	✓	✓				LA / F / E
<i>Trichomonas spp</i>	Microscope / rtPCR	✓	✓				LA / F / E
<i>Encephalitozoon cuniculi</i>	ELISA / rtPCR	✓	✓				LA / S / DBS / F / E

- (1) Mouse agents recommended by FELASA 2014 (quarterly and/or annual)
- (2) Rat agents recommended by FELASA 2014 (quarterly and/or annual)
- (3) Please refer to the specie specific agents recommended by FELASA 2014 (quarterly and/or annual)*

Sample type:

DBS: Dry Blood Spot
 F: Fecal
 FS: Fur Swab
 E: Environmental material (filter, swabs, other)

LA: Live Animal
 OS: Oral Swab
 S: Serum

PATHOLOGY

Tissues and organs are taken if abnormalities are observed during routine necropsy. These can be submitted for histopathology upon request at an additional charge.

NSP SAMPLING KITS

Inotiv has created an NSP sampling kit to improve the reliability and simplify the collection and submission of samples. Included in the box are sample collection, storage and transportation media, user-friendly sampling submission forms (profiles, species, strain etc.), sampling and packing instructions and pre-printed shipping instructions. These materials are being provided free of charge in conjunction with purchase of tests. Inotiv offers on-site sample training which may be subject to additional charges

ANIMAL TRANSPORTATION

Inotiv is equipped to provide animal shipping solutions for customers upon request. This includes the provision of live sentinel animals at SOPF status (bred and maintained in isolator), filtered shipping boxes including agar gel, pick up service of live animals in climate controlled vehicles, and user-friendly submission forms (profiles, species, strain etc.)

POOLING

It is possible to pool samples when testing for parasites. We recommend no more than five (5) fur swab samples, but can accept pools up to 10. Environmental samples, as well as fecal samples for rt-PCR, can be tested up to a maximum of ten (10) into one single sample, and no more than ten (10) faecal and environmental samples for use in rtPCR testing.

TESTING OF BIOLOGICAL MATERIALS

Biological materials such as tumours, hybridomas, cell lines and blood products can be contaminated when they are sourced from contaminated animals. Introduction of these materials into the animal unit is therefore subject to risk. Inotiv offers procedures and testing methods for animal sourced materials. Please contact our technical specialists for additional information.

REPORTING

Inotiv uses the Laboratory Information Management System (LIMS) to track, collate and report on Health Monitoring tests. Each submission receives a unique reference number, which then covers all samples within that submission.

Inotiv's FELASA compliant report is normally provided within 7 working days. Single serology or rtPCR testing results can be provided within 72 hours after receipt at our laboratory. Where conflicting or unexpected positive results are found, customers are informed immediately and appropriate action / follow up testing agreed.

For static areas we can include historical data from the last 18 months into the final report.

CELL LINE AND BIOLOGICS TESTING FOR RODENT PATHOGENS

Mouse profiles

	NSP CELLS I (22 AGENTS)	NSP CELLS II (18 AGENTS)	NSP CELLS III (15 AGENTS)	NSP CELLS IV (8 AGENTS)
Minute Virus of Mice (MVM)	X	X	X	X
Mouse Hepatitis Virus (MHV)	X	X	X	X
Mouse Parvovirus (MPV-1, MPV-2)	X	X	X	X
Mycoplasma pulmonis	X	X	X	X
Mycoplasma spp	X	X	X	X
Pneumonia Virus of Mice (PVM)	X	X	X	X
Sendai virus	X	X	X	X
Theiler's Murine Encephalomyelitis Virus (TMEV)	X	X	X	X
Ectromelia virus	X	X	X	
Lactate Dehydrogenase-Elevating virus (LDEV)	X	X	X	
Lymphocytic Choriomeningitis Virus (LCMV)	X	X	X	
Mouse Polyomavirus	X	X	X	
Mouse Norovirus (MNV)	X	X	X	
Mouse Rotavirus (EDIM)	X	X	X	
Respiratory enteric virus (Reovirus type 3)	X	X	X	
Mouse Adenovirus (FL)	X	X		
Mouse Adenovirus (K87)	X	X		
Mouse Cytomegalo virus (MCMV)	X	X		
Mouse K virus	X	X		
Hantaan virus (includes Seoul and Sin Nombre strains)	X			

Rat profiles

	NSP CELLS V (17 AGENTS)	NSP CELLS VI (10 AGENTS)
Kilham Rat Virus (KRV)	X	X
Lymphocytic Choriomeningitis virus (LCMV)	X	X
Mycoplasma pulmonis	X	X
Mycoplasma spp	X	X
Pneumonia Virus of Mice (PVM)	X	X
Rat Minute virus (RMV)	X	X
Rat Parvovirus (RPV, type 1 and 2)	X	X
Sendai Virus	X	X
Sialodacryoadenitis / Corona virus (SDAV)	X	X
Toolan H1 Parvovirus	X	X
Hantaan Virus (includes Seoul and Sin Nombre strains)	X	
Mouse Adenovirus (FL)	X	
Mouse Adenovirus (K87)	X	
Rat Theilo Virus (RTV)	X	
Respiratory enteric virus (Reovirus type 3)	X	

- For biological or cell culture samples, send one cryovial for each sample containing a minimum of 1×10^6 - 1×10^7 cells/vial. Cells can be in the form of a pellet or suspended in growth media or phosphate-buffered saline.
- For liquid samples, send one cryovial of each sample containing 0,5 ml of sample/vial.
- Smaller volumes of sample may also be evaluated if limited amounts of the sample are available. Please contact us prior to shipping.
- Material should be collected aseptically to prevent inadvertent contamination of samples.
- Samples should be frozen and shipped overnight with sufficient dry ice to ensure the samples remain frozen during transit and upon arrival.
- Please inquire for additional testing options and agents.

Additional profiles for mouse, rats and other species are available on request. Contact healthmonitorlab@inotiv.com or your local account manager/ Customer Service Department.

CANINE DIAGNOSTIC TESTING SERVICES

Inotiv offers a series of diagnostic testing services in accordance with FELASA recommendation for the health monitoring of canines.

All processing and reporting are conducted with the same processes, integrity and quality assurance as our other testing services. A panel of available tests by species type is listed below. Limited non-sacrificial panel (NSP) sampling kits are available for serology and feces collection. Please contact us for more information.

Testing services are available for individual agents or panel tests and include bacteriology, virology and parasitology. Per FELASA guidelines, the number and type of agents to be monitored will vary from country to country and region to region. Infectious diseases that do not need to be monitored are those declared to be absent within a region and diseases in which the animals are vaccinated.

Sampling frequency is recommended every 3 months beginning at weanling age, testing the agents listed below. Exceptions are also noted below.

Viral agents to be monitored on request or when associated with lesions or clinical disease.†

VIRUSES	TEST METHOD	SAMPLE TYPE
Canine adenovirus type 1 (HCC)	ELISA	S/DBS
Canine distemper virus (CDV)	ELISA	S/DBS
Canine parainfluenza virus (CPIV)	ELISA	S/DBS
Canine parvovirus (CPV)	ELISA	S/DBS
Intestinal coronavirus	ELISA	S/DBS
Rotavirus	ELISA	S/DBS

Recommended list of bacterial agents to be monitored.

BACTERIA	TEST METHOD	SAMPLE TYPE
<i>Bordetella bronchiseptica</i>	Culture/rtPCR	F/E
<i>Borrelia</i> spp.	Antigenic	DBS
<i>Brucella canis</i>	Culture	F/E
<i>Leptospira</i> spp.	MAT	S
<i>Salmonella</i> spp.	Culture/rtPCR	F/E
<i>Streptococci beta-hemolytic, serogroup G</i>	Culture/rtPCR	F/E

Bacterial and fungal agents to be monitored on request or when associated with lesions or clinical disease.†

BACTERIA	TEST METHOD	SAMPLE TYPE
<i>Campylobacter</i> spp.	Culture	F/E
<i>Ehrlichia</i> spp.	Antigenic	S/DBS
<i>Escherichia coli</i>	Culture	F/E
<i>Microsporum</i> spp.	Culture	F/E
<i>Pasteurellaceae</i> spp.	Culture	F/E
<i>Staphylococcus</i> spp.	Culture	F/E
<i>Trichophyton</i> spp.	Culture	F/E
<i>Yersinia enterocolita</i>	Culture	F/E

† Please consult your local authority along with vaccination and deworming documents to determine which agents are to be monitored for your colony.

Recommended list of parasites to be monitored.

PARASITES*	TEST METHOD	SAMPLE TYPE
All arthropods	Microscopy	F
All helminths	Microscopy	F
Coccidia	Microscopy/rtPCR	F/E
<i>Giardia</i> spp.	Antigenic	F
<i>Mycoplasma haemocanis</i> (formerly <i>Haemobartonella canis</i>)	Microscopy	Blood Smear

Parasites to be monitored on request or when associated with disease.†

PARASITES*	TEST METHOD	SAMPLE TYPE
<i>Angiostrongylus vasorum</i>	Antigenic	S/DBS
<i>Babesia</i> spp.	Antigenic	S/DBS
<i>Dipetalonema reconditum</i>	Antigenic	S/DBS
<i>Dirofilaria immitis</i>	Antigenic	S/DBS
<i>Filaroides</i> spp.	Antigenic	S/DBS
<i>Leishmania</i> spp.	Serology	S
<i>Pneumonyssus caninum</i>	Necropsy	Tissue

† Please consult your local authority along with vaccination and deworming documents to determine which agents are to be monitored for your colony.

* Ectoparasites - Attention should be given to ectoparasites such as fleas, lice, ticks and mites, including after using an ectoparasiticide.

SAMPLE TYPE AND COLLECTION:

Serology (S) sample collection - Minimum volume required 300ul-500ul undiluted serum sample in Eppendorf tube or serum tube. Refrigerate or freeze prior to shipping. Ship either with dry ice or ice packs to maintain temperature throughout shipping. Ship for next day delivery.

Dry blood spot (DBS) - collection - Spot 4 drops directly on the circle printed on the card. Please use 1 card per animal. After air-drying, the card is placed in a sample bag together with the desiccant and submitted to our lab. No refrigeration or sample preparation is needed.

Fecal (F) - Please collect approximately 5g of fresh fecal material and place in stool containers. Fecal samples can be kept at 4C and shipped with cool packs.

Environmental (E) collection - Sampling of environment is available with submission of filters, swabs or other.

Blood Smear - Please contact us for collection and shipping protocol.

Tissue - Please contact us for collection and shipping protocol.

Please contact us regarding our other testing capabilities at healthmonitorlab@inotiv.com or visit us at inotiv.com/full-spectrum-health-monitoring

NONHUMAN PRIMATE

Inotiv offers a series of diagnostic testing services in accordance with FELASA recommendations for the health monitoring of nonhuman primates. Testing services are available for individual agents or panel tests and include bacteriology, virology and parasitology.

All processing and reporting are conducted with the same processes, integrity and quality assurance as our other testing services. A panel of available tests by species type is listed below.

Limited NSP sampling kits are available for serology and feces collection. Please contact us for more information.

Inotiv nonhuman primate testing panels and agents

VIRUSES	TEST METHOD	MACAQUE	BABOONS	NEW WORLD	SAMPLE TYPE
B Virus+	rtPCR/IFA	R,A			S/DBS/B
Coronavirus (COVID-19)	rtPCR				S/DBS/B
Filovirus (Ebola)+	ELISA	R			S/DBS
Measles +	ELISA	R,A			S/DBS
Mumps*	ELISA				S/DBS
Rabies+	ELISA	R	R	R	S/DBS
Simian anti-poliomyelitis I-II-III*	ELISA				S/DBS
Simian Dengue*	ELISA				S/DBS
Simian immunodeficiency virus (SIV)+	rtPCR/IFA	R	R		S/DBS/B
Simian retrovirus (SRV)+	rtPCR/IFA	R	R		S/DBS/B
Simian rubella*	ELISA				S/DBS
Simian T-lymphotropic virus (STLV)+	rtPCR/IFA	R	R		S/DBS
Simian toxoplasma*	ELISA				S/DBS
Varicella zoster*	ELISA				S/DBS
Yellow fever*	ELISA				S/DBS
BACTERIA					
<i>Mycobacterium</i> **	Culture/rtPCR	**	**	**	**
<i>Salmonella</i> spp+	Culture/rtPCR	R,A	R,A	R,A	F/E
<i>Shigella</i> spp+	Culture	R,A	R,A	R,A	F/E
<i>Yersinia</i> spp+	rtPCR	R,A	R,A		F/E
PARASITES					
<i>Entamoeba histolytica</i> +	Microscopy/rtPCR	R,A	R,A	R,A	F/E
<i>Giardia</i> spp.+	Microscopy/rtPCR	R,A	R,A	R,A	F/E
<i>Helminths</i> +	Microscopy	R,A	R,A	R,A	F/E

+ Simian agents recommended by FELASA 2019 for macaques, baboons and new world primates including frequency - [R] = upon arrival, [A] = annually

* Testing available upon request. Please notify the lab 15 days prior to shipment of samples.

** *Mycobacterium tuberculosis* skin testing is performed at NHP facility. Contact us for more information regarding additional testing.

SAMPLE TYPE AND COLLECTION:

Serology (S) - Minimum volume required 100ul-300ul undiluted serum sample in Eppendorf tube or serum tube. Refrigerate or freeze prior to shipping. Ship either with dry ice or ice packs to maintain temperature throughout shipping. Ship for next day delivery.

Dry blood spot (DBS) - Spot 4 drops directly on the circle printed on the card. Please use 1 card per animal. After air-drying, the card is placed in a sample bag together with the desiccant and submitted to our lab. No refrigeration or sample preparation is needed.

Fecal (F) - Please collect approximately 5g of fresh fecal material collected in stool containers. Fecal samples can be kept at 4°C and shipped with cool packs.

Environmental (E) - Sampling of environment is available with submission of filters, swabs, or other.

Blood (B) - 0.5ml whole blood, in EDTA frozen and shipped with dry ice.

Please contact us regarding these or any of our other testing capabilities at healthmonitorlab@inotiv.com or visit us at [inotiv.com](https://www.inotiv.com)

ZEBRAFISH DIAGNOSTIC TESTING SERVICE

Inotiv offers multiple diagnostic health monitoring panels for zebrafish colonies, water and environmental samples. Testing services are available for individual agents or as a full panel. All processing and reporting are conducted with the same

processes, integrity and quality assurance as our other testing services. Limited sampling kits are available for environmental and water testing. Please contact us for more information.

Zebrafish Testing Panels*

AGENT	MYCOBACTERIUM PANEL*	ZEBRAFISH PANEL I*	ZEBRAFISH PANEL II*	ZEBRAFISH MICROBIOLOGY PANEL*
<i>Mycobacterium spp.</i>	X	X	X	
<i>Mycobacterium abscessus</i>	X	X	X	
<i>Mycobacterium chelonae</i>	X	X	X	
<i>Mycobacterium fortuitum</i>	X	X	X	
<i>Mycobacterium gordonae</i>	X	X	X	
<i>Mycobacterium haemophilum</i>	X	X	X	
<i>Mycobacterium marinum</i>	X	X	X	
<i>Mycobacterium peregrinum</i>	X	X	X	
<i>Mycobacterium saopaulense</i>	X	X	X	
BACTERIA, FUNGI AND PARASITES				
<i>Aeromonas hydrophila</i>			X	X
<i>Edwardsiella ictaluri</i>		X	X	X
<i>Flavobacterium columnare</i>			X	X
<i>Ichthyophthirius multifiliis</i>			X	
<i>Piscinoodinium pillulare</i>			X	
<i>Pleistophora hyphessobryconis</i>			X	
<i>Plesiomonas shigelloides</i>				X
<i>Pseudocapillaria tomentosa</i>			X	
<i>Pseudoloma neurophilia</i>		X	X	
<i>Pseudomonas aeruginosa</i>		X	X	X
<i>Pseudomonas fluorescens</i>				X
<i>Saprolegnia spp.</i>			X	
VIRUSES				
Infectious spleen and kidney necrosis virus (ISKNV)			X	
Infectious pancreatic necrosis virus (IPNV)			X	
Zebrafish picornavirus (ZfPV-1)			X	

* qPCR testing will be performed on the following sample types: frozen fish or embryos, environmental sample, water, InterZebTEC (patent pending).

+ Microbiology testing methods will be performed on water samples.

SAMPLE TYPE, COLLECTION AND SHIPMENT:

Zebrafish or Zebrafish embryos (FF) - A maximum of 5 fish can be pooled into one tube and tested as one sample. Pooling fish of different health statuses or across different systems is not recommended. Single fish can be placed into a 2ml labelled tube for a single test, up to 5 fish into a 50ml tube for pooled samples. Please freeze fish and/or embryos prior to shipping. Ship with dry ice or ice packs to maintain temperature throughout shipping.

Environmental samples (ES) - For all environmental sampling types, we recommend the use of a polystyrene transport boxes containing cold packs or dry ice as noted below. Most samples should not be frozen; live feed is the exception.

Environmental samples could include one or more of the following:

- a) **Detritus:** Rub a dry flocced swab on the biofilm or sediment to collect detritus. Once collected, cut the head of the swab into a 2ml labelled tube and submit. Refrigerate and ship with ice packs.

- b) **Fish feces:** Collect fish feces into a 2ml labelled tube and submit. Pooled feces from different fish collected in the same tube can be tested as a single sample. Pooling feces of fish with different health statuses or across different systems is not recommended.

- c) **Live feed (e.g., Artemia):** Collect at least 1ml of live feed cultures in appropriate sized tube and ship frozen with dry ice or ice packs to maintain temperature throughout shipping.

Water (W):

Using a sterile 50ml syringe (without needle) collect ~50ml of water and transfer into a labelled falcon tube closed tightly to avoid leaks. Ship water samples with ice packs.

InterZebTEC (patent pending) (IZ):

If using this system, expose the InterZebTEC for 5-7 weeks. At the end of the exposure time transfer the system of filters into a 50 ml labelled tube and ship with ice packs. This system is designed to reliably collect biological samples, including debris and biofilm. InterZebTEC can be shipped at room temperature.

We recommend next day delivery for all sample types. Contact us for more information on storage prior to shipping.

Xenopus Testing Panels*

AGENT	SAMPLE TYPE	XENOPUS PANEL I	XENOPUS PANEL II
<i>Batrachochytrium dendrobatidis</i>	ventral skin	X	X
<i>Mycobacterium chelonae</i>	E, swab os lesion, kidney, liver	X	X
<i>Mycobacterium marinum</i>	E, swab os lesion, kidney, liver	X	X
<i>Pseudocapillarioides xenopi</i>	dorsal skin swab	X	X
<i>Ranavirus spp.</i>	E, SS, OS, T	X	X
<i>Aeromonas hydrophila</i>	F, SS, T, E		X
<i>Cryptosporidium spp.</i>	F		X
<i>Pseudomonas aeruginosa</i>	F, swab of lesion		X
<i>Salmonella spp.</i>	F		X
<i>Saprolegnia spp.</i>	F, SS, T, E		X
MICROBIOLOGY PANEL			
<i>Aeromonas dhakensis</i>	F, SS, E	X	
<i>Aeromonas hydrophila</i>	F, SS, E	X	
<i>Elizabethkingia meningoseptica</i>	F, SS, E	X	
<i>Pseudomonas aeruginosa</i>	F, SS, E	X	
<i>Salmonella enterica</i>	F, E	X	
<i>Saprolegnia spp.</i>	F, SS, E	X	

* qPCR testing will be performed on the following sample types: frozen fish or embryos, environmental sample, water, InterZebTEC (patent pending).

+ Microbiology testing methods will be performed on water samples.

SAMPLE TYPE, COLLECTION AND SHIPMENT:

TISSUE SAMPLE (TS) OR TADPOLES (td)- All tissues should be submitted as a separate and single sample. Single tissues or tadpoles can be placed into a 2ml labelled tube. Please freeze prior to shipping. Ship with dry ice or ice packs to maintain temperature throughout shipping.

Environmental samples (ES) - For all environmental sampling types, we recommend the use of a polystyrene transport boxes containing cold packs or dry ice as noted below. Most samples should not be frozen; live feed is the exception.

Environmental samples could include one or more of the following:

- a) **Detritus:** Rub a dry flocked swab on the biofilm or sediment to collect detritus. Once collected, cut the head of the swab into a 2ml labelled tube and submit. Refrigerate and ship with ice packs.

- b) **Animal feces:** Collect frog feces into a 2ml labelled tube and submit. Pooled feces from different frogs collected in the same tube can be tested as a single sample. Pooling feces of frogs with different health statuses or across different systems is not recommended.

Water (W): Using a sterile 50ml syringe (without needle) collect ~50ml of water and transfer into a labelled falcon tube closed tightly to avoid leaks. Ship water samples with ice packs.

Skin and Olar swab (SS OR OS): Rub a dry flocked swab on the skin, oral cavity, gills (tadpoles) or lesioned areas and organs and submit in a culture tube including transport medium such as Amies Medium without charcoal, and shipped with cold packs.

We recommend next day delivery for all sample types.
Contact us for more information on storage prior to shipping.

Please contact us regarding these or any of our other testing capabilities at healthmonitorlab@inotiv.com or visit us at inotiv.com



Inotiv Sentinel Free Filter Testing (SiFT™) Program

Inotiv's SiFT program is a cutting-edge, sentinel-free, soiled bedding health monitoring solution meticulously designed to elevate your biosecurity and research animal welfare. This innovative program optimizes the detection of rodent pathogens, thereby providing a comprehensive health surveillance strategy that strongly supports the 3R principles (Replacement, Reduction, and Refinement). Our versatile SiFT sampling filter kit significantly reduces the need for traditional sentinel animals and is compatible with any cage type, offering unparalleled flexibility and efficiency in your facility.

KEY BENEFITS:

- **3R Alignment:** Reduces animal use and refines testing for improved animal welfare.
- **Enhanced Detection:** Utilizes advanced techniques for sensitive and specific pathogen identification.
- **Operational Efficiency:** Streamlines health surveillance, potentially lowering costs and labor.
- **Reliable Data:** Provides consistent and accurate health assessments.
- **Reduced Stress:** Minimizes animal handling and associated stress.

Contact us via
healthmonitorlab@inotiv.com
for more information on how
to establish a SiFT sampling
program at your facility. Inotiv
offers free test kits upon request.





Discovery and Safety Assessment Portfolio

EXPECT MORE FROM YOUR DISCOVERY AND DEVELOPMENT CRO

Gain the insights you deserve to get the answers you need

Getting high-quality data and timely answers to critical questions is essential for reaching your goals. At Inotiv, we specialize in accelerating drug discovery and development. We offer a comprehensive suite of integrated services all tailored to your specific needs. Partner with us and benefit from our extensive regulatory experience, world-class scientists, and a history of providing responsive, impactful service to drive your product forward.

IN VITRO AND IN VIVO SERVICES

Discovery

- Pharmacology and toxicology assessment
- Drug metabolism and pharmacokinetics
- Pharmacology/pharmacodynamic model co-development
- Toxicogenomics
- Computational toxicology
- Drug target and pathway analysis via proteomics

Regulatory-enabling safety assessment

- Acute through chronic GLP toxicology with toxicokinetics
- Safety pharmacology
- Genetic toxicology
- Carcinogenicity studies including transgenic mice
- Developmental and reproductive toxicology including juvenile animal studies
- Program management for overall program oversight and seamless communication

DMPK

- *In vitro* metabolism and PK screening
- Metabolite ID, soft spot analysis
- *In vitro* drug-drug interactions (CYP and transporters)
- PK/TK analysis

HISTOLOGY AND PATHOLOGY

- Standalone or fully integrated with *in vivo* services
- Discovery through regulated toxicologic pathology
- Primary evaluations and peer reviews
- Board-certified pathologists (ACVP)
- Pharmacologic, clinical, medical device, and digital pathology
- Immunohistochemistry and immunofluorescence, *in situ* hybridization, quantitative microscopy, image analysis, stereology, histomorphometry, and specialty stains

SURGICAL SUPPORT AND MEDICAL DEVICE SOLUTIONS

- GLP and non-GLP *in vivo* testing
- Broad portfolio of techniques
- Trained veterinary surgeons
- Multiple surgical suites
- State-of-the-art imaging

BIOANALYSIS

- Phase-appropriate discovery method validation
- Regulatory enabling (GLP, GCP) method development, validation, and transfer
- Clinical/nonclinical studies supporting safety and efficacy
- Nonclinical and clinical fluids and tissues
- Dose formulation analysis

Small molecule

- AB SCIEX™ LC-MS/MS platform (small molecule, peptides, oligonucleotides)
- High-resolution mass spectrometry (HRMS)
- Liquid handling and assay automation

Biotherapeutics

- Peptide/protein therapeutics, monoclonal antibodies, cell, and gene therapies, and ADCs (PK and immunogenicity)
- Molecular biology (DNA/RNA/proteins)
- Cytokine panels (inflammatory markers)
- Flow cytometry (immunophenotyping)
- Pharmacokinetic (PK), toxicokinetic, and immunogenicity (ADA and Nab) assessments
- Ligand binding assay (ELISA, ELISpot, MSD, BioPlex™, and Luminex®)
- Biomarkers for single and multiplex assay

Contact us for more details
at DDinfo@inotiv.com

Inotiv genetic testing services

The Inotiv genetic services operations in North America provide global DNA and RNA analysis services. Inotiv has partnered with Transnetyx to offer a range of quality genetic testing services.

FEATURES

DNA/Mutation Analyses – investigate the structure of the genetic variation in your model with the following services:

- Genotyping
- Zygosity Testing
- SNP profiling for Speed Congenics and background identification

RNA/Expression Analyses – investigate the expression of the gene or genes of interest in your model with the following services:

- Quantitative PCR (qPCR)

ADVANTAGES

- Offers customized testing for maximum flexibility and value
- Supports your project with technical and bioinformatics specialists
- Provides experimental design consultation
- Delivers quick turnaround times
- Archives data securely for up to five years

Contact your Inotiv representative
or visit [inotiv.com](https://www.inotiv.com)

Biospecimen products and services

Inotiv's Biospecimen Services provides a comprehensive range of consistent, high-quality biospecimen products to supplement your research. As the provider of the broadest range of standard research models to the pharmaceutical and biotechnology industries, government, academia and other life science organizations, Inotiv is able to provide access to both fresh and frozen products from a wide range of Inotiv bred laboratory animals and farm animals.

As part of Inotiv's commitment as a responsible breeder to follow the principles of the 3Rs, surplus animals from our commercially bred stock are used to produce stock biological products. Standard diets, genetic integrity assurance and consistent bio-security and health care programs minimize lot to lot variation.

For stock product specifications visit our website inotiv.com.

Biospecimen (Prices on request)

DESCRIPTION/SPECIES	MOUSE	RAT	G.PIG	RABBIT	CHICKEN	TURKEY	DOG
Serum	✓	✓	✓	✓	✓	✓	✓
Strain specific serum (outbred)	✓	✓					
Strain specific serum (other)	✓	✓					
Serum from isolator reared rodents	✓	✓					
Plasma	✓	✓	✓	✓	✓	✓	✓
Strain specific plasma (outbred)	✓	✓					
Strain specific plasma (other)	✓	✓					
Plasma from isolator reared rodents	✓	✓					
Complement	✓	✓	✓	✓			
Blood (Cells) in Alsever	✓	✓	✓	✓	✓	✓	✓
Whole Blood (outbred / inbred)	✓	✓	✓	✓	✓	✓	✓
Whole Blood from isolator reared rodents	✓	✓					
Tissues - Organs - Glands (TOG's)			Prices on request. Contact biologicals.eu@inotiv.com				

- Pricing is based on availability of surplus animals and excludes packaging (dry ice) and (courier) delivery.
- Standard anticoagulants used are EDTA and Lithium Heparin. Others available upon request.

Surcharges apply to:

- Individual samples
- Specific packing requirements (vial sizes)
- Gender specific samples
- Samples at specific animal age



**Require a custom product bespoke
to your specifications?**

Contact biologicals.eu@inotiv.com
to discuss your requirements and
receive a quote.

Please note: For the collection of biological products at our UK facility, a scientific justification must be submitted upon placement of an order.

For assistance please contact your customer service representative or biologicals.eu@inotiv.com who will be happy to provide the relevant form.

Import and export transport services

Inotiv has been providing a comprehensive import and export service for the shipment of animals, embryos or other products to the research industry in the EU and worldwide for over 30 years on behalf of Academia, Pharmaceutical and Contract Research companies.

As a company, we aim to provide a full service tailored to suit your individual needs. With offices in the UK, Europe, and America, we are able to offer support from our Inotiv colleagues, as well as using approved agents worldwide.

We provide a door-to-door service to our clients, liaising with all parties over the purchase (if applicable), supply, and direct shipment of animals being imported or exported from your facility or any third party to the Inotiv facilities in Leicestershire UK, or located locally, where we provide project maintenance in our contract breeding department, embryo transfer, rederivation and cryopreservation services.

Inotiv has relationships with many Institutions and are able to liaise with suppliers on your behalf. If appropriate our service can include the purchase and supply of all your animal requirements, thus ensuring one final invoice to yourselves.

The Inotiv Import Service in UK is applicable to either importation under the Rabies (Importation of dogs, cats, and other mammals) Order 1974 (as amended) or Article 4 of the EEC Council Directive 92/65, dependent upon whether the supplier is registered to export under the UK Directive.

Our service includes:

- Assistance with all necessary arrangements regarding collection of the animals, embryos or other products from the supplier and shipping to the UK/EU. This includes completion of all documentation required to accompany the animals (e.g. Shippers Certification, Airwaybill, Invoice, Veterinary certificate and address labels).
- Supply of IATA approved export shipping containers complete with woodchips, diet mash or gel packs and shipping labels.
- Obtaining DEFRA Import license, if appropriate.
- Arranging customs clearance at the arrival airport and delivery to the receiving facility in an appropriate approved, temperature controlled vehicle.
- Costs additional to the Import Service which may be charged by the supplier include:
 - Animal costs
 - Shipping Container charge
 - Export documentation/Vet Fees
 - Air Freight

Inotiv is able to organize the export of animals from facilities in the EU worldwide. Certain countries may need additional documentation e.g. Import Permits, Health Certificates, TRACES certification, Certificate of Origin etc. Advice on their requirement will be given, if appropriate.

This service includes:

- Liaison with the recipient on your behalf on shipment of your animals, embryos and other products, including invoicing all costs incurred to the recipient, if appropriate and/or payment of Airline handling charges and air freight on your behalf.
- Supply of IATA approved export shipping containers complete with woodchips, diet mash or gel packs, and shipping labels
- Completion of all documentation required to accompany the animals e.g. (DEFRA) Export Health Certificate, Shippers Certification, Airwaybill, Invoice and address labels.
- Arranging for Veterinary Inspection within your facility, prior to shipment, if required.
- Forwarding of all necessary documentation and flight details to the recipient.
- Collection of your animals in a dedicated, temperature controlled vehicle and delivery to the departure airport.
- Customs clearance at arrival airport, transport in a temperature controlled vehicle to the recipient's facility.
- Confirmation back to shipper of safe arrival of animals.

TRANSFER SERVICE

Inotiv also offers a road transport service to move animals, embryos and other products between establishments within the EU in our fleet of approved temperature controlled vehicles. We can also provide a range of IATA approved shipping containers complete with woodchips and mash/gel packs.

IMPORT OR EXPORT OF EMBRYOS/CELLS WORLDWIDE

- Hire of Embryo Transfer chamber (dry shipper) fully charged with liquid nitrogen and ship worldwide
- For import of embryos/cells we will organize for the fully charged empty Embryo Transfer Chamber to be delivered to the shipper, for immediate collection of embryos/cells and return to the recipient.
- For export of embryos/cells we will organize for the fully charged empty Embryo Transfer Chamber to be delivered to the recipient for immediate collection and shipment to recipient and then arrange for return of the empty chamber.

For additional information or a formal quotation, please contact your local account manager or Customer service center.

Surgical services

Inotiv's state-of-the-art surgical facilities are dedicated to providing the highest quality surgical models to our customers from our advanced surgery center and our barrier-dedicated surgical facilities. We are committed to enhancing and enriching your research, through quality, collaboration, development, and animal welfare.

Under close veterinary supervision, our AAALAC accredited facilities offer multiple rodent surgical models from experienced and highly-trained, certified surgical technicians.

Inotiv offers many standard surgical models and has the flexibility to collaborate with customers to create custom surgical models.

Contact us to discuss your surgical model needs.



Surgical services

Quality

- Consistent quality across all surgical facilities
- Continuous training, evaluation and certification for all surgical personnel
- Client feedback is documented and reviewed by a team consisting of Quality, Veterinary Sciences, and Surgical Management

Development

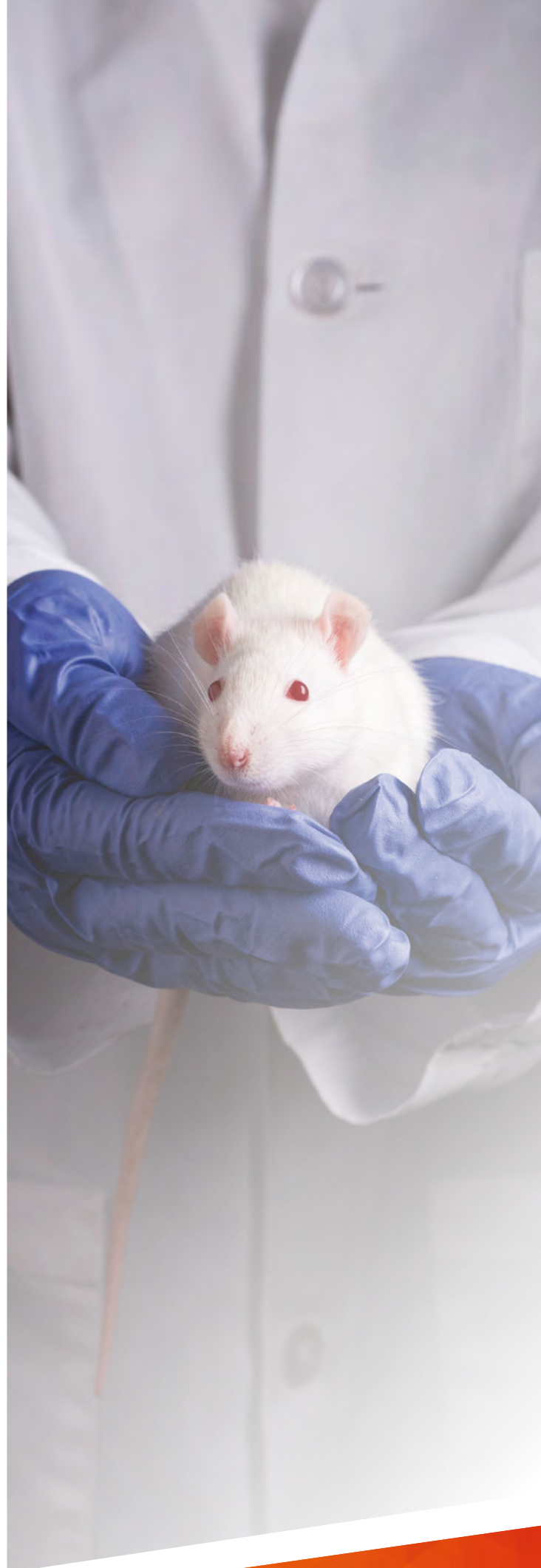
- Working with researchers to develop new surgical models and improve current models
- Commitment to continuing education opportunities for Inotiv surgical staff
- Continuous investment in Inotiv surgical facilities

Collaboration

- Developing partnerships with clients to enhance their research outcomes
- Partnering with industry professionals to bring new products and services to the research community
- Global best practice sharing between all Inotiv surgical personnel

Animal welfare

- Dedicated to the humane and ethical care of research animals
- All surgical modifications are reviewed and approved by the Inotiv Animal Welfare Officer
- Inotiv veterinarians provide oversight and technical and professional support to all surgical personnel
- Utilizing Inotiv's experience and expertise adds consistency to your cohorts and may decrease animal usage





RODENT CATHETERIZATIONS

Inotiv uses a rounded-tip catheter made of medical-grade polyurethane for all standard vascular catheterizations. Our standard catheter exteriorization option is a fixed exteriorization of 2.5 cm of exposed catheter exiting between the animal's shoulder blades. We currently offer several additional exteriorization options to access catheterized vessels for infusion and/or sample withdrawal. Furthermore, we will meticulously collaborate with our clients to develop a catheter model that fulfills their particular research needs.

Catheter patency is verified by our surgical staff intra-operatively and again prior to the animals being placed in the shipping containers.

Our recommended flushing regimen can be found on the "Post-Operative Care Sheet for Catheterizations" (sent with each order and available at [inotiv.com](https://www.inotiv.com)).

When our recommended flushing regimen is followed, vascular catheterized models are guaranteed patent up to the first five (5) days from arrival at your facility.

- For vascular catheterized rat models, patency of the rounded-tip catheter must be confirmed by the client within four (4) days following arrival at their facility
- For vascular catheterized mouse models, patency should be confirmed on the day of arrival to client's facility
- Non-vascular catheterized models are guaranteed patent upon the day of arrival

Rat catheterizations

		Up to 5 animals (per animal)	6 or more animals (per animal)
VASCULAR CATHETERIZATIONS			
Carotid Artery	CAC	€ 170,60	€ 165,70
Femoral Artery*	FAC	€ 271,90	€ 190,40
Femoral Vein	FVC	€ 257,10	€ 163,20
Jugular Vein	JVC	€ 210,20	€ 133,60
Portal Vein	PVC	€ 359,70	€ 259,60
NON-VASCULAR CATHETERIZATIONS			
Bile Duct - Closed Loop	BDCCL	€ 401,30	€ 284,90
Intestinal-Duodenal	IDC	€ 327,40	€ 236,20
Intestinal-Jejunal	IJC	€ 401,70	€ 290,40
Gastric	IGC	€ 297,90	€ 207,50
Intra-Colonic	ICC	€ 364,60	€ 270,70
Ileum*	ILC	€ 279,30	€ 274,30
Intra-Cecum Catheterization	ICC	€ 301,60	€ 223,70
Intra-Thecal - For dose administration		€ 331,30	€ 269,40

* On certain animal models only

Pricing includes button with protection cap. For other options a surcharge may apply due to single housing.

Mouse catheterizations

		Up to 5 animals (per animal)	6 or more animals (per animal)
VASCULAR CATHETERIZATIONS			
Carotid Artery*	CAC	€ 242,30	€ 233,50
Jugular Vein	JVC	€ 183,00	€ 175,50

Surgical enrichment program

- All singly-housed surgically-modified rodents receive enrichment postoperatively and during transit
- All surgically-modified rodents are acclimated to ClearH₂O gel prior to shipment

Catheterizations may be exteriorized using Instech's Pinport™, Instech Vascular Access Buttons™ and Harnesses™. Additional charges apply.

Multiple procedures - single animal

Multiple surgical procedures, including catheterizations, can be performed on a single animal. If you require an unlisted combination, including triples, pricing is provided upon request.

		Up to 5 animals (per animal)	6 or more animals (per animal)
DOUBLE VASCULAR CATHETERIZATIONS (RAT)			
Jugular Vein/Carotid Artery	JVC/CAC	€ 385,50	€ 268,30
Double Jugular Vein	JVC/JVC	€ 330,00	€ 237,30
Femoral Artery/Femoral Vein*	FVC/FAC	€ 426,30	€ 318,80
Jugular Vein/Femoral Vein	JVC/FVC	€ 364,60	€ 267,00
Jugular Vein/Femoral Artery	JVC/FAC	€ 399,20	€ 290,40

Inotiv also performs client-specific surgical procedures. Please contact Veterinary Sciences, Research and Support, at VSRSEU@inotiv.com to discuss your specific needs. In most cases, a surgical procedure development fee is assessed and includes the provision of surgically-modified animals for evaluation.

For inquiries on our large model surgical services, please contact us at RMSsurgical@inotiv.com



Catheterizations options*

In addition to the standard catheterization procedure, Inotiv offers these options:

PRICE PER ITEM	
RAT HARNESSSES	
Harness, single port Part #VAHR1H/22	€ 85,30
Harness, dual port Part# VAHR1H/22-1P	€ 125,90
Other harnesses available upon request	
CULEX CATHETERS	
CAC	P.O.R.
FVC, short	P.O.R.
FAC	P.O.R.
JVC, short	P.O.R.
BDCCL	P.O.R.
PVC	P.O.R.
Culex Catheter SS Plug, 19g	P.O.R.
Culex BDCCL U-Tube Connector	P.O.R.
CATHETER BUTTONS	
Vascular Access Button	€ 70,40
Insteck Double Button	€ 96,70
Insteck Triple Button	€ 119,89
Other buttons and accessories available upon request	
CATHETER PORTS	
Vascular Access Port, JVC	P.O.R.
Vascular Access Port, FVC	P.O.R.
Cannulock Ports	P.O.R.
MISCELLANEOUS	
Additional Catheter Tubing (per 30 cm)	P.O.R.
Blunt Needles	P.O.R.
Huber Needles	P.O.R.
Rat Jacket w/Pouch	P.O.R.
Cannula Plugs	P.O.R.
Catheter Couplers	P.O.R.
Hep/Gly Soln, sterile, 500 IU/mL, 10 mL bottle	P.O.R.
Pinports (set of 5)	P.O.R.

* Supplier partners include: Access™ Technologies, SAI Infusion Technologies, Inc., Insteck Laboratories, Inc., Bioanalytical Systems, Inc. (BASi), Data Sciences International (DSI™), and Lomir Biomedical, Inc.

Soft tissue surgical procedures

		Up to 5 animals (per animal)	6 or more animals (per animal)
REPRODUCTIVE			
Castration - rat	CAST	€ 67,90	€ 37,10
Castration - mouse	CAST	€ 71,80	€ 40,90
Ovariectomy - rat	OVX	P.O.R.	P.O.R.
Ovariectomy - mouse	OVX	P.O.R.	P.O.R.
Vasectomy - rat	VAS	€ 90,30	€ 51,90
Vasectomy - mouse	VAS	€ 92,80	€ 51,90
ENDOCRINE			
Adrenalectomy-Bilateral - mouse		€ 54,50	€ 43,40
ADDITIONAL			
Nephrectomy-Unilateral - rat	NEPHREX	€ 121,80	€ 68,70
Nephrectomy-Unilateral - mouse	NEPHREX	€ 128,20	€ 73,90
5/6 Nephrectomy - rat		€ 292,00	€ 268,60
5/6 Nephrectomy - mouse		€ 315,40	€ 292,00
CARDIOVASCULAR			
Myocardial infarction - rat		P.O.R.	P.O.R.
Myocardial infarction - mouse		P.O.R.	P.O.R.
Transverse aortic constriction - mouse		P.O.R.	P.O.R.

Immunodeficient models

Surgical modification of immunodeficient rodents is also available.

		Up to 5 animals (per animal)	6 or more animals (per animal)
REPRODUCTIVE			
Castration - rat	CAST-Rat	P.O.R.	P.O.R.
Castration - mouse	CAST-Mice	P.O.R.	P.O.R.
Ovariectomy - rat		P.O.R.	P.O.R.
Ovariectomy - mouse	OVX-Mice	P.O.R.	P.O.R.
Vasectomy - rat		P.O.R.	P.O.R.
Vasectomy - mouse		P.O.R.	P.O.R.

Additional charges

	Each
Custom surgeries not listed	Pricing available upon request

Cancellations must be received within five business days prior to the scheduled date of surgery. The date of surgery is indicated on the order confirmation. Surgical orders cancelled after the required 5 days notice will be subject to the cost of surgery and any unrecoverable cost such as, but not limited to, preconditioning, treatment and maintenance of the animal model.

Additional information

Animals used for our surgical procedures, originate from Inotiv's rodent barriers. Animals from these barriers meet the FELASA Recommendations 2014 (Mähler et al); a separate health surveillance programme is carried out in our surgical units on a monthly basis. Recent Health Reports from the Inotiv surgical units can be obtained from our website (inotiv.com).

In order to fully monitor the successful recovery of animals from surgery, we allow approximately 5 days before shipping. An animal diary with the history of the peri-operative care and instructions for care taking of the animals (e.g. flushing the cannula's, special water substitutions etc) after delivery is included.

Surgical procedure prices are in addition to the cost of animals, shipping, and taxes. Sham operations are priced at 75 percent of the prices shown. No additional charges are assessed based upon the use of gas or injectable anesthesia.

Myocardial infarction model

In the mid 1990s, research concluded the rat model has many pathophysiological and clinical similarities as the human heart. Progression to heart failure is similar to human progression. Inotiv now offers a myocardial infarction rat model.

USES

- Identify molecular signaling mechanisms
- Evaluate therapeutic treatments
- Investigate disease combinations

CURRENT RESEARCH

Combination of models

- Diabetes and MI
- Obesity and MI
- MI and aging/sex (young, middle age and old)

INOTIV MI SURGICAL PERFORMANCE

Measurable success

- Less than 40% ejection fraction (EF) Ejection fraction (EF) is a measurement of the percentage of pumped blood leaving the heart
- Ensuring consistent study results with minimal deviation
- Able to run on treadmill
- Low ejection fraction deviations between animals
- Minimal adhesion
- No infection or lung damage
- Muscle damage

Rat myocardial infarction

- Severe blanching
- Thin anterior wall
- EF = 31%

BEATING EXPECTATIONS



The Inotiv difference

Consultative approach
High quality surgical models
Knowledgeable technical support
Responsive customer support

Custom antibody production

At Inotiv Bioproducts, we believe that when it comes to making antibodies, experience matters.

For more than 40 years, we have consistently provided the research community high-quality custom antibody production services. From the more traditional *in vivo* approach, to the leading-edge *in vitro* production method, to hybridoma development, Inotiv Bioproducts can tailor a program to meet your specific needs. Our technical staff will work with you to determine the best production approach for your research.

We understand the research process and how unexpected variability can negatively impact the quality and timeliness of results. Through our proven Quality Management System, our cGMP/OLAW-compliant and USDA-licensed facility, and our team of highly-qualified and experienced professionals, we provide antibody products and services that you can depend on to support and enhance your research. By providing consistent high-quality products and services in a timely manner, Inotiv Bioproducts helps you focus on your research, rather than on unwanted distractions.

IN VIVO PRODUCTION

For an economical approach, Inotiv Bioproducts offers monoclonal antibody production in our cGMP-compliant and AAALAC accredited facility. Our ready access to large numbers of high-quality, genetically-defined adventitious virus-free mice ensures a rapid turn-around time at a competitive price. We can also help maximize your yield time through our innovative Optimization Program.



Inotiv Bioproducts is a global market leader with **more than 40 years of experience** in developing, scaling up and purifying antibodies.

CELL LINE AND PROCESSING SERVICES

We have expanded our cell line and processing capabilities to offer a wider selection of services, thus helping you to complete your research more efficiently.

- Bioburden
- Mycoplasma cleanup
- Endotoxin
- Viability
- Sterility
- Cell weaning
- Subcloning
- Cell recovery
- Cell banking
- Cell line isotyping
- Cell line stability
- IgG testing

Our technical staff has extensive experience in microbiology, virology, cell biology, pathology, and lab animal medicine. This translates into reliability in knowing that your projects will be dealt with in a professional and timely manner.

THE BPS ADVANTAGE:

- ISO 9001-2015 and AAALAC accredited, cGMP-compliant facility
- OLAW Assurance
- USDA registered
- Expertise > 40 years
- Rapid turnaround time
- Scientific expertise
- Superior quality management system
- Vendor qualification expertise

IN VIVO (ASCITES) PRODUCTION

For an economical approach, Inotiv Bioproducts offers monoclonal antibody production as ascites in our AAALAC registered cGMP compliant facility. Our ready access to large numbers of high quality, genetically defined adventitious virus-free mice and rats ensures a rapid turnaround time at a competitive price. We can also help maximize your yield time through our innovative Optimization Program.

SERVICE	DESCRIPTION	CELL LINE	PRODUCTION TYPE	CAPACITY	ADVANTAGES
Optimization Program	• Different doses tested • Small to large run sizes	Hybridomas, NSO and SP2/0	BALB/c, Nude, SCID, and other species	Small to large scale (10mg-100g)	• Determine optimal cell dose • Allows maximal yield • Verifies specifications • Saves time
Research <i>in vivo</i> Production (non-cGMP)	• When cGMP is not needed • Unique service • Same phases as cGMP	Hybridomas, NSO and SP2/0	BALB/c, Nude, SCID, and other species	Small to large scale (10mg-100g)	• No MAP Testing requirement • Quicker turn-around time • Custom protocols • Reduced cost
cGMP Production	• Diagnostic/Therapeutic Use • Extensive Quality Program • Fully tested	Hybridomas, NSO and SP2/0	BALB/c, Nude, SCID, and other species	Small to large scale (10mg-100g)	• AAALAC accredited, cGMP compliant • Optimized production • Large animal inventory • Complete documentation

IN VITRO MONOCLONAL ANTIBODY PRODUCTION

Inotiv Bioproducts has the expertise to produce your monoclonal or secreted protein *in vitro*. We have the capacity to produce 10mg-300g of research or cGMP antibody, or other secreted proteins, in our innovative tissue culture bag and hollow fiber production units. We offer a variety of media options such as RPMI, DMEM, IMDM, serum free, protein free, or other custom media formulations.

SERVICE	DESCRIPTION	CELL LINE	PRODUCTION TYPE	CAPACITY	ADVANTAGES
Small Scale Production	- Cost effective for smaller research runs - Good for early feasibility, clonal selection, and media optimization	Hybridomas (CHO's, 293's, PerC.6 and secreted proteins)	Tissue, Culture Bag Hollow Fiber Bioreactor Spinner Flasks	Up to 1 gram per project	- Reduced cost - Yield ~20-150mg per 1 L bag - Quick turn-around - Excellent oxygen transport
Large Scale Production	- Flexible and easy scale up - Larger scale research and cGMP runs	Hybridomas (CHO's, 293's, PerC.6 and secreted proteins)	Hollow Fiber Bioreactor Wave Bag Rocker	10mg-300g per project	- Max environmental control - Reproducible manufacturing process - Reduces extraneous proteins - Highly concentrated product

HYBRIDOMA DEVELOPMENT

Our hybridoma development program is a flexible, interactive, and cost-effective multi-phased service. We will work closely with you to design a program that will meet your requirements. Our custom development options include providing up to three, five, or 10 clones, or as many as you require. As our customer, you retain all rights to any clones that are produced. Once the clones are developed, we can scale them up via *in vivo* or tissue culture supernatant.

SERVICE	REQUIREMENTS	PROJECT OUTCOMES
Stage I: Immunization	- Immunize mice with antigen - Boost/Test by ELISA or alternate method - Additional boost(s) if needed - Pre-fusion boost	- Move mice with best titers as fusion candidates - Immunizing multiple mice increases success
Stage II: Fusion/Screen and Select	- Fusion with myeloma cell line - Grow cells in HAT medium - Initial screen/selection	- Screen all initial plates - Expand positive wells and test by ELISA - Set up to 30 positives for cloning - Keep frozen back-up for future testing
Stage III: Cloning/Frozen Stock	- First cloning - Final cloning - Selection for non-HT requirement - Frozen stock and small antibody scale-up	- Clone by limiting dilution method - Test clones by ELISA - Several cloning cycles - Final clones expanded and small amount of antibody produced

POLYCLONAL ANTIBODY PRODUCTION

Our comprehensive polyclonal antibody production service is offered in a variety of species. These include rabbits, goats, chickens, guinea pigs, rats, and mice. We can make your polyclonal using a wide range of antigens, bacteria, viruses, fungi, fusion proteins, synthetic peptides, plasmids, DNA, and other proteins. Peptide synthesis, carrier and labeling conjugations, and purification can easily be added to your productions. Standard protocols are available for each species, or we can follow your specific protocol. All our procedures are fully documented, allowing complete traceability.

SERVICE	ANTIGEN	PRODUCTION TYPE	PRODUCTION CAPACITY	AREA OF USE	ADVANTAGES
Polyclonal	Proteins, Peptides, variety of antigens	Rabbits, Goats, Chickens, Mice, Rats, Guinea Pigs, Sheep and Horses	Small to Large Scale (all size runs available)	Diagnostics, Research	Variety of Species USDA Licensed Standard/Custom Protocols

ANTIBODY PURIFICATION

Inotiv Bioproducts can purify from mg to gram quantities of your monoclonal or polyclonal antibodies utilizing a wide array of protein purification methods, for research or cGMP diagnostic use. We can also purify any raw antibodies that have been produced in your lab or from another supplier. Our scientific staff will work with you to discuss the best options available to meet your needs. Our goal is to develop a procedure which provides the best balance between yield, purity and cost.

SERVICE	PRODUCTION TYPE	METHOD	PRODUCTION CAPACITY	AREA OF USE	ADVANTAGES
Antibody Purification IEF, SEC, MW Testing Fab and F(ab') ₂ Fragmentation FITC, Biotin, Alk Phos, and HRP Conjugation	Monoclonals Polyclonals Secreted Proteins IgM IgY	Protein A and G, Antigen affinity, Hydrophobic interaction, Size exclusion, Ammonium sulphate, Ion exchange	Small to large scale (20mg - 20g scale available)	Diagnostics, cGMP Diagnostic Research	- Variety of Methods - Low endotoxin for <i>in vivo</i> use cGMP compliant for diagnostic use - Purify customer's in-house antibody - Standard/Custom Protocols

IMMUNOGENICITY IMMUNIZATION

Inotiv Bioproducts provides a unique Immunogenicity Immunization service in a variety of species, such as rats, mice, guinea pigs, and rabbits. We provide serum samples from a wide range of antigens, bacteria, viruses, lipids, nucleic acids and other proteins. Non-immunogenic haptens require conjugation with an epitope such as a protein or polysaccharide before they can illicit an immunologic response. Standard protocols are available for each species, or we can follow your specific protocol. All our procedures and production records are fully documented, allowing complete traceability.



SERVICE	ANTIGEN	PRODUCTION TYPE	PRODUCTION CAPACITY	AREA OF USE	ADVANTAGES
Immunogenicity Immunization	Proteins, viruses, variety of antigens	Rabbits, Mice Rats, Guinea Pigs	Small to large scale (all size runs available)	Vaccine, Research Discovery	Variety of Species USDA Licensed Standard/Custom Protocols

MAP/RAP/HAP TESTING

- If your production must be free of *Mycoplasma* or adventitious viral contamination, we recommend our MAP, RAP, and HAP testing programs
- These programs can screen your cell line against the adventitious viruses associated with your cell line's origin. Testing is available by both PCR and serology

WHOLE EMBRYO CULTURE SERUM/EGF, 2.5S AND 7.0S NERVE GROWTH FACTOR

- Inotiv Bioproducts offers a custom-collected serum for use in Whole Embryo Culture (WEC) of seven- to nine-day-old rat and mouse embryos, as well as the best and most competitively priced mouse-derived NGF and EGF. Custom orders are available upon request

RODENT SERA AND TISSUES

- We have ready access to rodent tissues and sera from high-quality, genetically-defined, adventitious virus-free mice and rats
- Rabbit and nonhuman primate tissues and sera available as well
- Quotes from specific strains are available upon request

Your custom antibody production partner

Whether your needs call for *in vivo* or *in vitro* production, we can supply a reliable stream of antibody to meet your research development and production needs. Our staff can perform an evaluation/optimization run to scale up, utilizing the proper regulatory documentation. We can also purify and further process your antibody to meet your desired specifications.

Visit our website,
inotiv.com/custom-antibody-production,
for our full program, or contact us at
800.972.4362 or by e-mail at [Bioproducts.na@inotiv.com](mailto:na@inotiv.com) to place an order.

Ordering information

ORDERS

You can place your order by phone or e-mail: make sure it includes a purchase order number and contact person.

Orders and deliveries are subject to the Inotiv T&C available here: **General Terms and Conditions of Sale (inotiv.com)**

Our customers are kindly requested to place their orders and inquiries at:

ENVIGO RMS BV
Kreuzelweg, 53 NL-5961-NM HORST
T +31.478.578.300
W inotiv.com
Registration nr: TVWA/09/11452

Sales department contact information:

COUNTRY	EMAIL	TEL
Netherlands	rms.benelux@inotiv.com	t +31.478.578.320
Belgium / Lux	rms.benelux@inotiv.com	t +31.478.588.995
Scandinavia	rms.nordic@inotiv.com	t +31.478.588.995
Baltic States	rms.nordic@inotiv.com	t +31.478.578.324
Hungary / Czech Rep.	rms.benelux@inotiv.com	t +31.478.588.995
Rest Eastern EU	rms.nordic@inotiv.com	t +31.478.578.322
Croatia	rms.it@inotiv.com	t +39.0432.727.793
Slovenia	rms.it@inotiv.com	t +39.0432.727.793

Our Sales Department can be reached by phone on Monday till Friday from 08.00 - 17.00 hours.

We request that our clients place orders with the correct delivery and invoice address. Also, the correct stock or strain, age, weight and sex of the animals must be pointed out clearly on all order forms. We give our preference to standing orders to ensure that we have the appropriate animals available. If you require information on the specific date of birth, please advice prior to shipping date since after weaning animals are maintained by either weight or age groups by week.

All orders for animals which originate from our US, UK and Israeli facilities must be placed by Wednesday noon to ensure that animals are delivered the following week. Orders from our facilities on mainland EU, must reach us no later than Thursday noon. Enquiries / Reservations given by the Customer Services Representative will only remain open for a period of 3 working days from the time of the official offer. Therefore if no instruction is received from the customer, their reservation will be released automatically.

WEIGHT SPECIFICATIONS

In the event that an order for animals includes a weight specification, Inotiv will assume that such specification pertains to the packaging weight. The client must take this into account when placing an order. It is known that animals may experience weight changes during transport. Depending on the age, sex and developmental status of the animal and duration of the transport itself, animals might lose or gain weight during transport. In almost all cases, animals will return to their weight at shipping within 24 - 48 hours after arrival. This statement has to be used as a guidance only, as the rate of weight recovery may be strain-specific and is also influenced by external factors, e.g. maintenance on arrival in a new facility, diet composition and/or position of individuals in a new animal hierarchy. Contact our local office for animals required with a narrow defined weight range.

PREGNANT ANIMAL POLICY

Inotiv uses well-established techniques to successfully produce timed mated rats, mice, hamsters, guinea pigs, and rabbits. Inotiv uses an impedance meter for determining the stage of estrus in rats.* Timed mated rats and mice are determined by observation of a vaginal plug. Plug date for rodents is considered to be day zero (0) of gestation.

* For timed mated animals fulfilled from Inotiv Affiliates in Europe, in general, animals are mated overnight from 16.00 until 08.00 hours. In case of timed-mating during the day, a surcharge of 50% is added to the pregnant animal price. In case a timed-mating (or preparation) set up on a holiday and / or a Sunday, Inotiv will charge € 147,15 per order. For rabbits the fee is € 13,75 per rabbits with a minimum charge of € 159,50 per order.

Due to the natural variation in the length of gestation, the exact day of parturition cannot be guaranteed. In addition, Inotiv cannot guarantee the minimum number or sex of offspring per litter.

Inotiv may ship animals which are in late gestation if requested by customer**, as they may deliver their litter while in transit. Requests for credit or replacement of animals shipped in late gestation per customer request may be declined in Inotiv's sole discretion.

** For models fulfilled from Inotiv Affiliates in Europe, the last stage of gestation for mice is over 17 days and for rats is over 18 days, each at shipping. To comply with UK guidelines, Inotiv cannot ship rodents more than 17 days of pregnancy at packing when fulfilled from the UK. Pregnant animals shipped in the UK are transported in accordance with the (Animal Scientific Procedures) Act 1986 and EC 1/2005 Protection of animals during transport.

Inotiv does not guarantee that late term animals will not deliver in transit. If animals deliver while in transit, Inotiv may charge the full order price.

If problems regarding gestational age or pregnancy are encountered, customers should immediately contact Inotiv's customer service department and provide detailed information regarding the animals involved. Requests for credit and/or replacement animals may generally be declined by Inotiv, in its discretion, if appropriate documentation is not supplied to Inotiv.

EXPECTED PREGNANCY RATE

STOCK OR STRAIN	Timed mated <13 days gestation (at shipping)	Timed mated ≥13 days gestation and over (at shipping)	Untimed pregnant ≥13 days gestation (at shipping)
Outbred Rats/Mice	+	90%	90% ++
Inbred Rats/Mice	+	90%	90% ++

+ Plug guarantee only; no guaranteed pregnancy. Plug date = Day 0.

++ Untimed pregnant rodents will be selected from our breeding colonies on the basis of palpation or visual confirmation. A variation of three to four days gestation can be expected. Inotiv is not responsible for actual gestation and/or exact day of littering for untimed pregnant rodents.

To avoid charges, cancellations for timed mated rats, mice, guinea pigs, and hamsters must be received one week prior to mating date, however, cancelled orders for timed mated rabbits will be charged at full price regardless of the amount of notice supplied.

For orders from Inotiv's Affiliates in Europe, when ordering females with litter, customer should take into account that Inotiv can't ship litters which are less than 3 days of age at packing. When animals are sourced from the UK, the minimum age of the litter must be at least 7 days at packing. If customer's research project requires such litters, Inotiv recommends ordering timed mated pregnant rats and mice which can litter at customer's facility.

SHIPPING MALE MICE

One of the problems often encountered with group-housed male mice is excessive aggression which can lead to negative affects both on the well-being of the animals and on the validity of experimental results. In order to minimize the risk of male aggressiveness, Inotiv is housing male mice as cage mates from weaning onwards and will not mix these with unfamiliar mice upon shipping. Nevertheless mice can show aggressive behavior upon arrival and housing at the customers facility due to differences in husbandry and hierarchy. It is therefore advisable to not mix male mice from different delivery boxes and to house them in small groups (three to five animals per cage) as this will reduce the incidents of stressful situations.

PACKAGING

The packaging is not included in the animal price. Box sizes do include the lid. Our prices for the most used export boxes are:

Filterbox large - mice, rats: 63 * 45 * 18 cm	€ 28,15
Filterbox small - mice, rats: 43 * 30 * 18 cm	€ 22,20
Filterbox guinea pigs : 56 * 36 * 23 cm	€ 27,30
Filterbox rabbits: 61 * 36 * 26 cm	€ 27,30
Filterbox mutant (double insulated) - mice, rats: 56 * 36 * 23 cm	€ 44,10
Filterbox US - rodents : 63 * 43 * 20 cm	€ 53,15

Animals are supplied in filtered boxes which include gel and/or diet. This ensures that healthy animals are delivered to your facility.

EXTRA CHARGES

For some special demands based on the order specifications at packing, the following additional surcharges may apply:

Weight range 3 gr. (only for mice)	add 10%
Weight range 5 gr. (only for rats)	add 15%
Weight range 10 gr. (only for rats)	add 10%
Weight range 25 gr. (only for guinea pigs)	add 10%
Weight range 250 gr. (only for rabbits)	add 10%
Age range 3 days (only for mice and rats)	add 10%
Guaranteed (non) littermates (inventoried rodents only)	add 10%
Extra specifications for time mated rodents	add 50%
Single gender litters with mother	add 25%
Animal identification	add € 10,05

DELIVERY COST

Per region fixed delivery costs are calculated. If you want information on these calculated transport costs, please contact us. If animals are shipped directly by air, freight charges will be pre-paid by Inotiv and charged on your invoice. For a dedicated delivery a separate delivery cost will be calculated.

CANCELLATIONS

For ethical as well as economic reasons, Inotiv reserves the right to charge for late cancellations or changes to confirmed order and/or delivery arrangements. We will apply the following charges (animal value only) which are based on the age of the animals (rodents and guinea pigs) at time of cancellation.

Cancellation up to 14 days or more before the scheduled delivery:	80%
Cancellation less than 14 days before the scheduled delivery:	100%

Inotiv can accept cancellations for standard inventoried mice and rats under the following conditions:

- Inbred when ≤ 8 weeks of age
- Outbred, hybrid and mutant when ≤ 6 weeks of age

In case of rabbit cancellations, a 100% cancellation charge will apply to confirmed orders for rabbits which are cancelled less than 10 weeks prior to the planned delivery date. If a confirmed order for rabbits over 18 weeks of age is cancelled at anytime then an automatic 100% cancellation charge will apply to the order. In both cases the cancellation fee (animal value only) will be based on the age of the animals at time of cancellation.

NON-CUSTOM DIET & BEDDING.

Non-Custom Diet & Bedding orders may only be cancelled, without charge to customer, if customer's notice of cancellation is received by Inotiv prior to Inotiv's preparation of the non-custom diet & bedding for shipment. Customer may be charged 100% of the order price if a cancellation request is received thereafter.

WARRANTY

Growth chart data provided in this Product Guide should be used as a guideline only. Data can be subject to differences in environmental circumstances, such as housing conditions, type of diet, etc.

PRICES AND TERMS

All prices are ex-works and are valid till 30/09/2026.
Prices are quoted in Euro and are subject to change without notice. Terms are net 30 days. Unless otherwise requested, shipping charges will be prepaid and added to your invoice.

Any questions/concerns with information contained in the invoice must be communicated to Inotiv Customer Service within fifteen (15) calendar days of the above invoice date. After fifteen (15) days, all charges are deemed final and if re-invoicing is required, the original invoice date remains in effect for application of terms. In case re-invoicing is requested by the customer due to reasons out of our control, Inotiv reserves the right to add an administrative fee of €75,00 to the new invoice.

Furthermore surcharges may apply to special invoicing requests and extra documentation (such as e.g. weight lists etc.)

CONDITIONS

Because of the nature of our products, returns cannot be accepted. Inotiv will, at its election, replace or refund the purchase price of animals which do not conform to the customer's written specificities. In the event of a complaint of any kind, customers must provide the purchase order number and invoice number. Inotiv must be notified of any shortages within seven days (7) of receipt of the order.

LICENCES

The customer shall be responsible for obtaining all necessary licenses and approvals for use or import of any item purchased from Inotiv and for all necessary exchange control consents required in order to pay for goods.

Inotiv

Who we are

Inotiv provides the broadest range of research models and related services to the pharmaceutical and biotechnology industries, government, academia, and other life science organizations.

Our business is founded on a dedication to exceptional client service and the experience and expertise of our people. With locations worldwide, we are committed to helping clients realize the full potential of their research and products to bring life-changing therapies to people around the world.

IN PARTNERSHIP WITH OUR CLIENTS

Our clients conduct research and develop products that have the potential to improve lives. But achieving this potential is becoming increasingly difficult. We believe that for our clients to achieve their goals, they need to trust and be absolutely confident in the company they choose to help them with their research, products and services. You can be confident that at Inotiv we are dedicated to understanding your challenges, appreciating your perspectives and helping you achieve your goals.

EXCELLENT CLIENT EXPERIENCES

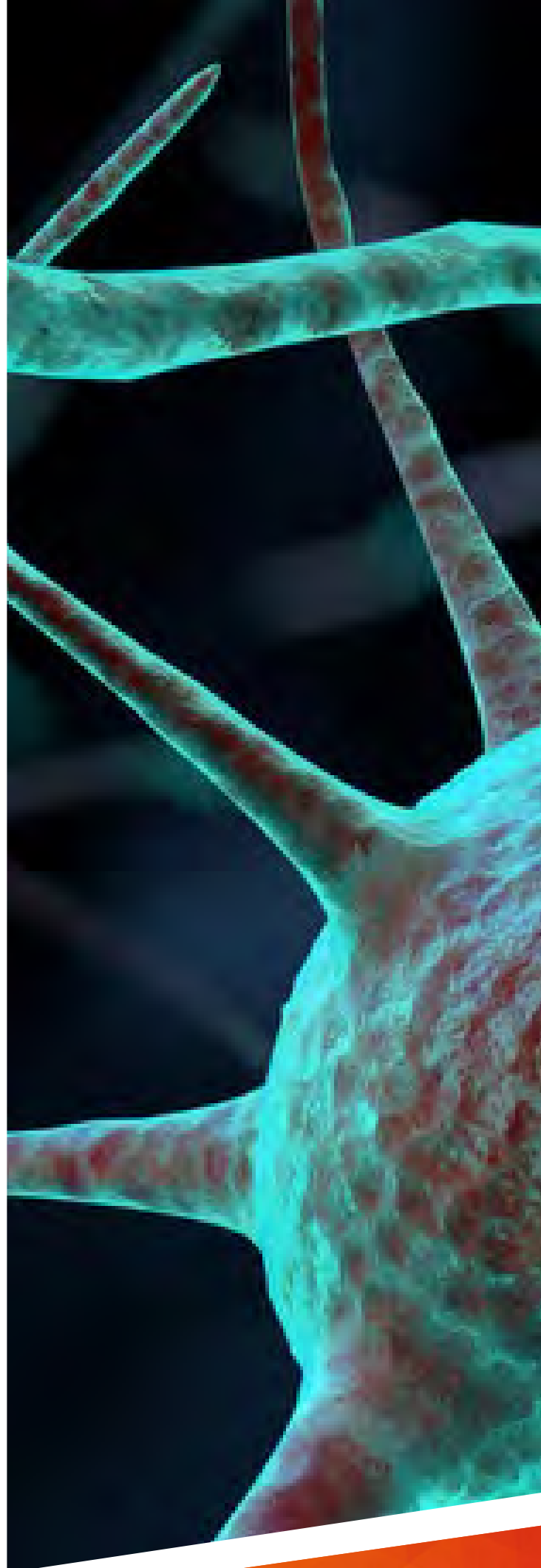
We are proud of our client-centric culture which makes us responsive to every client, no matter their size, as we continually optimize their product delivery and research programs to help ensure consistently clear results.

FOSTERING AND DEVELOPING SCIENTIFIC EXCELLENCE

Our ability to combine scientific excellence with empathetic working relationships is what differentiates us. We seek to understand our clients' goals and challenges, appreciate our clients' perspectives, and work together for a better future.

Beyond our responsibility to clients, at Inotiv we are responsible to people, animals and the communities in which we live. We are dedicated to assuring people that the products they use have been tested properly for safety and efficacy. We are committed to the highest levels of animal welfare. And, we provide services that help develop new products to improve health as well as protect food supplies and the environment. At Inotiv, we exist to help our clients secure the potential of their research and products that enhance and enrich life.

Read more at [inotiv.com](https://www.inotiv.com)





Visit us at [inotiv.com](https://www.inotiv.com)