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Research Models and Services

Rodent Health Monitoring Procedures

North America

Dear Colleagues,

Inotiv continues to advance its health testing procedures based on the latest information on microbial pathogenicity and testing technology. We are committed to providing the highest quality animals to the research community and our health testing program provides you with assurance of that commitment.

Microbiologically defined rodent commercial colonies are maintained within maximum security production barriers and flexible-film isolators. Colonies are monitored daily for clinical signs of disease, injury, or abnormal behavior by trained and highly skilled personnel who are supported by the veterinary medical staff. Testing profiles and frequencies are selected to effectively monitor the colonies for pathogenic and select opportunistic flora. Routinely tested and reported organisms are listed below; additional information is available upon request. In an attempt to only provide you with animals that meet your specific health requirements, customers are encouraged to provide Customer Service with a facility or institutional bioexclusion list.

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BIOEXCLUSION LEVELS:

Organisms are excluded from the colonies, and changes in health status are reported according to the bioexclusion levels defined below. Bioexclusion levels for each organism are indicated on the Organism list chart.

Level 1: Excluded from all animals. If a colony is confirmed positive, customers are notified and the colony is closed and repopulated with organism-free animals.

Level 2: Excluded from immunodeficient animals, but not immunocompetent animals. If a colony is confirmed positive, customers are notified. Immunodeficient animal colonies are closed and repopulated with organism-free animals. Immunocompetent colonies are maintained according to customer demand.

Level 3: Excluded based on customer demand. If a colony is confirmed positive, customers are notified and the colony is maintained according to customer demand.

COLONY	CAGES SAMPLED	NUMBER CAGES SAMPLED
Rat and Mouse Barrier	Sentinels[1]	1/species/room
	Colony animals	1/strain/room, 4 total minimum/ barrier
Cotton Rat Barrier	Rat and mouse sentinel[3]	1 of each/room
	Colony animals[3]	2/room
Hamster Barrier	Sentinel[1]	1/room
	Colony animals	5/room
Rodent Isolator	Sentinels[4]	2 immunocompetent & 2 immunodeficient/isolator

1. Young adult animals are housed on a bottom shelf, near the room exhaust, and receive dirty bedding from colony residents.
2. Semi-annual tests are performed on one (1) sentinel/species/room minimum, six (6) animals/barrier minimum
3. Cotton rats are not tested serologically; rat and mouse sentinels for this species are tested.
4. Immunodeficient strains are not tested serologically; instead immunocompetent heterozygotes or isolator reared sentinels are used.

REPORTING AND CUSTOMER NOTIFICATION OF HEALTH STATUS CHANGES:

Health reports list the most recent test results as well as 18-month historical results and are updated monthly. Routine findings are reported on our website and to individuals who have requested to be placed on our contact list. Customers are notified of changes in health status, once the results are confirmed, by phone or email.

DIAGNOSTIC LABORATORY:

Inotiv primarily utilizes our own diagnostic laboratory for routine health monitoring. Additional commercial diagnostic laboratories are used as necessary.

Inotiv employs the use of a hybrid-based routine health monitoring program. Twice annually (barrier colonies) or annually (isolator colonies), live animals are submitted for necropsy and comprehensive health screening. Various test methodologies are utilized as appropriate for the agent screened, including pathology, culture, PCR, ELISA, Bead, IFA, and microscopy (see following tables). Twice annually (barrier colonies, two months after the live animal submission) or annually (isolator colonies, on the second quarter following the live animal submission), a full complement of samples are collected in house and submitted. Samples include oral swab, dried blood spot, fur swab, and fecal pellet. Various test methodologies are utilized as appropriate for the agent screened, including culture, PCR, ELISA, Bead, IFA, and microscopy. During the remaining months (between live animal and full sample screening shipments), fecal samples are collected based on the approved schedule and submitted for PCR and culture screening as appropriate.

Organism List and Testing Frequency

Legend: A = annually, Semi = semi-annually, Q = quarterly, M = monthly, - = not tested. ELISA = Enzyme-Linked Immunosorbent Assay, IFA = Immunofluorescence Assay, PCR = Real Time Polymerase Chain Reaction

VIRUSES	BIOEXCLUSION LEVEL	MICE		RATS		HAMSTERS	COTTON RATS	TEST METHODS
		BARRIER	ISOLATOR	BARRIER	ISOLATOR	BARRIER	BARRIER	
Kilham's Rat Virus (KRV)	1	-	-	M	Q	-	M[a]	ELISA or PCR
Mouse Hepatitis Virus (MHV)	1	M	Q	-	-	-	M[a]	Bead or PCR
Mouse Minute Virus (MMV)	1	M	Q	-	-	-	M[a]	Bead or PCR
Mouse Parvovirus (MPV)	1	M	Q	-	-	-	M[a]	Bead or PCR
Parvovirus NS-1	1	M	Q	M	Q	-	M[a]	ELISA (R), Bead (M) or PCR
Pneumonia Virus of Mice (PVM)	1	M	Q	M	Q	M	M[a]	ELISA (R), Bead (M) or PCR
Rotavirus (EDIM)	1	M	Q	-	-	-	M[a]	Bead or PCR
Rat Minute V irus (RMV)	1	-	-	M	Q	-	M[a]	ELISA or PCR
Rat Parvovirus (RPV)	1	-	-	M	Q	-	M[a]	ELISA or PCR
Rat Theiler V irus (RTV)	1	-	-	M	Q	-	M[a]	ELISA or PCR
Reovirus 3 (REO 3)	1	Q	Q	Q	Q	M	Q[a]	ELISA (R), Bead (M) or PCR
Sialodacryoadenitis Virus (SDAV/RCV)	1	-	-	M	Q	-	M[a]	ELISA or PCR
Sendai virus	1	M	Q	M	Q	M	M[a]	ELISA (R), Bead (M) or PCR
Theiler's Mouse Encephalomyelitis Virus (TMEV/GDVII)	1	M	Q	-	-	-	M[a]	ELISA (R), Bead (M) or PCR
Toolan's H-1 Parvovirus	1	-	-	M	Q	-	M[a]	ELISA or PCR
Mouse Norovirus (MNV)	1	Q	Q	-	-	-	Q[a]	Bead or PCR
Simian Virus 5 (SV-5)	1	-	-	-	-	M	-	ELISA or PCR
Ectromelia (Mousepox)	1	Semi	A	-	-	-	Semi[a]	Bead or PCR
Hantaan virus	1	Semi	A	Semi	A	-	Semi[a]	ELISA (R), Bead (M) or PCR
Lymphocytic Choriomeningitis Virus (LCMV)	1	Semi	A	Semi	A	M	Q[a]	ELISA (R), Bead (M) or PCR
Mouse Adenovirus-1 (MAD-1)	1	Semi	A	Semi	A	-	Semi[a]	ELISA (R), Bead (M) or PCR
Mouse Adenovirus-2 (MAD-2)	1	Semi	A	Semi	A	-	Semi[a]	ELISA (R), Bead (M) or PCR
Mouse Cytomegalovirus (MCMV)	1	Semi	A	-	-	-	Semi[a]	Bead or PCR
Polyoma Virus	1	Semi	A	-	-	-	Semi[a]	ELISA or PCR
K virus	1	Semi	A	-	-	-	Semi[a]	ELISA or PCR
Lactic Dehydrogenase-Elevating Virus (LDEV)	1	Semi	A	-	-	-	Semi[a]	ELISA or PCR
Mouse Thymic Virus (MTV)	1	Semi	A	-	-	-	Semi[a]	IFA or PCR

[a] Cotton rats are not tested serologically; therefore, mouse or rat sentinels are utilized.

BACTERIA AND FUNGI	BIOEXCLUSION LEVEL	MICE		RATS		HAMSTERS	COTTON RATS	TEST METHODS
		BARRIER	ISOLATOR	BARRIER	ISOLATOR	BARRIER	BARRIER	
Bordetella bronchiseptica	3	Semi	A	Q	Q	Q	Q	Culture
Campylobacter jejuni	1	-	-	-	-	Q	-	Culture
CAR bacillus	1	Semi	A	Q	Q	-	Q[a]	ELISA or PCR
Citrobacter rodentium	1	Q	Q	-	-	-	Q[a]	Culture
Clostridium piliforme (Tyzzer's disease)	1	Q	Q	Q	Q	M	Q[a]	ELISA (R), Bead (M) or PCR
Corynebacterium bovis	1	-	Q	-	-	-	-	PCR
Corynebacterium kutscheri	1	Q	Q	Q	Q	Q	Q	Culture
Dermatophytes	1	Semi	Q	Semi	Q	-	Semi[a]	Culture
Encephalitozoon cuniculi	1	Semi	A	Semi	A	Q	Semi[a]	ELISA or PCR
Helicobacter spp.	1	Q	Q	Q	Q	Q	Q	PCR
Klebsiella oxytoca	3	Q	Q	Q	Q	Q	Q	Culture
Klebsiella pneumoniae	3	Q	Q	Q	Q	Q	Q	Culture
Lawsonia intracellularis	1	-	-	-	-	Q	-	ELISA or PCR
Mycoplasma pulmonis	1	Q	Q	Q	Q	Q	Q[a]	ELISA (R, H), Bead (M) or PCR
Pasteurella multocida	1	Semi	A	Semi	A	-	-	PCR
Pasteurella pneumotropica	1	M	Q	M	Q	Q	M	Culture
Pneumocystis spp.	1	Q	Q	Q	Q	Q	Q	IFA or PCR
Proteus mirabilis	3	-	Q	-	Q	-	-	Culture
Pseudomonas aeruginosa	2	Q	Q	Q	Q	Q	Q	Culture
Salmonella spp.	1	Q	Q	Q	Q	M	Q	Culture
Staphylococcus aureus	2	Q	Q	Q	Q	Q	Q	Culture
Streptococcus spp. Group B beta	3	Q	Q	Q	Q	Q	Q	Culture
Streptobacillus moniliformis	1	Semi	A	Q	Q	-	Q	PCR
Streptococcus pneumoniae	1	Q	Q	Q	Q	Q	Q	PCR

PARASITES	BIOEXCLUSION LEVEL	MICE		RATS		HAMSTERS	COTTON RATS	TEST METHODS
		BARRIER	ISOLATOR	BARRIER	ISOLATOR	BARRIER	BARRIER	
Endoparasites	1 / 2[b]	M	Q	M	Q	M	M	Microscopy and PCR
Ectoparasites	1 / 2[c]	M	Q	M	Q	M	M	Microscopy and PCR

[b] Endoparasites in Bioexclusion Level 2 include Chilomastix sp., flagellates, Entamoeba muris, and trichomonads.
[c] Ectoparasites in Bioexclusion Level 2 include Demodex spp. in hamsters.

All other endoparasites and all ectoparasites are Bioexclusion Level 1