

Rodent and Rabbit Health Monitoring Procedures

Europe

Dear Customer,

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.

The Directors of Laboratory Animal Medicine – Europe

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 for production barriers and bi-monthly for production isolators. Routine findings are reported on our website. Customers are notified of changes in health status, once the results are confirmed, by phone or email.

DIAGNOSTIC LABORATORY:

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

NECROPSY PROCEDURES:

Include a physical examination, gross examination of tissues, organs, and systems. Abnormal fluids are examined by culture, and organs or tissues with lesions are examined histologically.

Table 1. General overview health monitoring EU rodent and rabbit production facilities.

COLONY	ANIMALS TESTED	NUMBER ANIMALS TESTED
Rodents and Rabbit Barriers ¹	Colony animals	Minimum 10 animals/species/barrier
Rodent Isolator ²	Colony + Sentinals ³	Minimum 2 immunocompetent & 2 immunodeficient/isolator

¹ Monthly test frequency
² Bi-monthly test frequency
³ Immunodeficient strains are not tested serologically; instead immunocompetent heterozygotes or isolator reared sentinals are used.

SEROLOGIC EVALUATIONS:

Are performed on immunocompetent animals using Bead, ELISA, HAI and IFA as a confirmatory test for the detection of IgG antibodies against viruses and bacteria

MICROBIOLOGY PROCEDURES:

Aerobic, micro aerobic, and carbon dioxide cultures of nasopharynx and aerobic cultures of cecum are performed.

MOLECULAR BIOLOGY PROCEDURES:

qPCR methods are used to identify bacteria, viruses, parasites and fungi starting from different samples.

PARASITOLOGICAL EVALUATIONS:

Are performed by direct microscopic examination. The ears are evaluated for mites and lice. Small intestinal and cecal contents are evaluated for pathogenic and nonpathogenic helminths and protozoa. Encephalitozoon cuniculi is screened by serology and qPCR.

ORGANISM LIST AND TESTING FREQUENCY

Our health monitoring program uses live animal and non-sacrificial profiles (NSP) submissions including a combination of dried blood spot, faecal, oral and nasal swabs and fur samples. Each sample and method has been adapted to the different species in order to achieve a comprehensive plan by monthly/bi-monthly testing. Monthly testing will comprise of live animals, NSP methods or faecal sampling. Refer to the Health monitoring report for further information.

Legend: A = annually, Semi = semi-annually, Q = quarterly, M = monthly, B = bi-monthly, T = tri-annually, - = not tested., IFA = Indirect Fluorescent Antibody Testing, qPCR = Real Time Polymerase Chain Reaction; ELISA = Enzyme-Linked Immuno Sorbent Assay; Bead = Microbead Assay.

VIRUSES	MICE		RATS		GUINEA PIG	RABBIT	TEST METHODS
	BARRIER	ISOLATOR	BARRIER	ISOLATOR	BARRIER	BARRIER	
Ectromelia virus	Q	Semi	-	-	-	-	Bead/ELISA/qPCR
Guinea Pig Adenovirus	-	-	-	-	M	-	ELISA/qPCR
Hanta virus	A	A	Q	Semi	-	-	Bead/ELISA/qPCR
Kilham Rat Virus	-	-	M	B	-	-	Bead/ELISA/qPCR
Lactic Dehydrogenase-Elevating Virus	A	A	-	-	-	-	Bead/ELISA/qPCR
Lymphocytic Choriomeningitis Virus	Q	Semi	A	A	Q	-	Bead/ELISA/qPCR
Mouse Adenovirus-1 (MAD-1)	Q	Semi	Q	Semi	-	-	Bead/ELISA/qPCR
Mouse Adenovirus-2 (MAD-2)	Q	Semi	Q	Semi	-	-	Bead/ELISA/qPCR
Mouse Cytomegalovirus	A	A	-	-	-	-	Bead/qPCR
Mouse Hepatitis Virus	M	B/T ^a	-	-	-	-	Bead/qPCR
Mouse K Virus	A	A	-	-	-	-	Bead/ELISA/qPCR
Mouse Minute Virus	M	B/T ^a	-	-	-	-	Bead/qPCR
Mouse Norovirus	M	B	-	-	-	-	Bead/qPCR
Mouse Parvovirus	M	B/T ^a	-	-	-	-	Bead/qPCR
Mouse Polyoma Virus	A	A	-	-	-	-	Bead/ELISA/qPCR
Mouse Rotavirus (EDIM)	M	B/T ^a	-	-	-	-	Bead/qPCR
Mouse Thymic Virus	A	A	-	-	-	-	IFA/qPCR
Pneumonia Virus of Mice	Q	Semi	M	B	-	-	Bead/ELISA/qPCR
Rabbit haemorrhagic disease virus	-	-	-	-	-	M	ELISA
Rabbit pox virus (myxomatosis)	-	-	-	-	-	M	ELISA
Rabbit rotavirus	-	-	-	-	-	M	ELISA
Rat Minute Virus	-	-	M	B	-	-	Bead/ELISA/qPCR
Rat Parvovirus	-	-	M	B	-	-	Bead/ELISA/qPCR
Rat Theilo Virus	-	-	M	B	-	-	Bead/ELISA/qPCR
Reovirus type 3 (Reo 3)	Q	Semi	Q	Semi	-	-	Bead/ELISA/qPCR
Sendai virus	Q	Semi	Q	Semi	M	-	Bead/ELISA/qPCR
Sialodacryoadenitis Virus	-	-	M	B	-	-	Bead/ELISA/qPCR
Theiler's Mouse Encephalomyelitis Virus	M	B/T ^a	-	-	-	-	Bead/ELISA/qPCR
Toolan's H-1	-	-	M	B	-	-	Bead/ELISA/qPCR

^a Immunocompetent animals

BACTERIA, MYCOPLASMA AND FUNGI	MICE		RATS		GUINEA PIG	RABBIT	TEST METHODS
	BARRIER	ISOLATOR	BARRIER	ISOLATOR	BARRIER	BARRIER	
<i>Bordetella bronchiseptica</i>	-	-	Q	B	M	M	Culture/qPCR
CAR bacillus	A	A	Q	Semi	-	-	Bead/ELISA/qPCR
<i>Chlamydia psittaci</i>	-	-	-	-	A	-	IFA
<i>Citrobacter rodentium</i>	Q	Semi	-	-	-	-	Culture/qPCR
<i>Clostridium piliforme</i>	Q	Semi	M	B	Q	M	Bead/ELISA/qPCR
Hyperkeratinosis Associated <i>Corynebacterium</i> spp	-	B	-	Semi	-	-	qPCR
<i>Corynebacterium kutscheri</i>	Q	Semi	A	Semi	M	-	Culture/qPCR
Dermatophytes	-	-	-	-	A	A	Culture
<i>Helicobacter</i> spp.*	M	B	M	B	-	-	qPCR
<i>Klebsiella oxytoca</i>	-	B	-	B	-	-	Culture
<i>Klebsiella pneumoniae</i>	-	B	-	B	-	-	qPCR
<i>Mycoplasma pulmonis</i>	Q	Semi	M	B	-	-	Bead/ELISA
<i>Pasteurella</i> spp.	M	B	M	B	M	M	qPCR IFA
<i>Pneumocystis carinii</i>	-	-	Q	Q	-	qPCR	qPCR
<i>Pneumocystis murine</i>	A	Semi	-	-	-	-	
<i>Proteus mirabilis</i>	-	B	-	B	-	-	Culture/qPCR
<i>Pseudomonas aeruginosa</i>	-	B	-	B	-	-	Culture/qPCR
<i>Staphylococcus aureus</i>	-	B	-	B	-	-	Culture/qPCR
Streptococci Beta-haemolytic (group A and/or G)	M	B	M	B	M	-	Culture/qPCR
<i>Streptobacillus moniliformis</i>	Q	Semi	Q	Semi	Q	-	qPCR
<i>Streptococcus pneumoniae</i>	M	B	M	B	M	-	Culture/qPCR
<i>Treponema (paraluis) cuniculi</i>	-	-	-	-	-	A	HAI
<i>Yersinia pseudotuberculosis</i>	-	-	-	-	A	-	Culture

PARASITES	MICE		RATS		GUINEA PIG	RABBIT	TEST METHODS
	BARRIER	ISOLATOR	BARRIER	ISOLATOR	BARRIER	BARRIER	
<i>Encephalitozoon cuniculi</i>	A	A	-	A	M	A	ELISA
Endoparasites	M	B	M	B	M	M	
<i>Aspicularis tetraptera</i>	M	B	-	-	-	-	
<i>Balantidium</i> sp.	-	-	-	-	M	-	
<i>Chilomastix</i> sp.	-	-	-	-	M	-	
<i>Cryptosporidium</i>	M	B	M	B	M	M	
<i>Eimeria</i> sp.	M	B	M	B	M	M	
<i>Entamoeba</i> sp.	M	B	M	B	M	M	
<i>Giardia</i> spp.	M	B	M	B	M	M	
<i>Hymenolepis nana</i>	M	B	M	B	M	M	
<i>Spiroplasma</i> sp.	M	B	M	B	M	M	
<i>Syphacia</i> sp.	M	B	M	B	M	M	
<i>Trichostrongylus axei</i>	M	B	M	B	M	M	
Ectoparasites	M	B	M	B	-	-	
<i>Myocoptes</i> sp.	M	B	M	B	-	-	
<i>Myobia</i> sp.	M	B	M	B	-	-	
<i>Radfordia</i> sp.	M	B	M	B	-	-	
<i>Demodex</i> sp. (rabbits only)	M	B	M	B	-	-	
Others	M	B	M	B	M	M	Direct microscopy/ qPCR