

Research Animal Diagnostic Services

Routine monitoring of your research animal colonies and facility is the best way to detect an infection that could compromise your research. To help you manage the potential risk, we deliver sensitive and specific testing to screen your animal facility, research biologics and many research animal models, including mice, rats, rabbits, gerbils, hamsters, guinea pigs and ferrets.



Research Animal Diagnostic Services

Our goal is to identify and incorporate the most analytically sensitive and specific technologies available in order to provide the most accurate and reproducible results. We perform rigorous research and development prior to the introduction of any new assay or technology (e.g., Multiplexed Fluorometric ImmunoAssay® [MFIA®] serologic platform or OpenArray® with TaqMan® PCR) and implement standard operating procedures to ensure that your samples yield the correct results.

For details regarding our services and reagents, including testing platforms, technology and sample submission, please visit www.criver.com/info/dx or contact Charles River at 1.877.274.8371 or askcharlesriver@crl.com.

Diagnostic Laboratory Locations

We have multiple diagnostic laboratories to provide a close, convenient option to you. We receive live animals and samples for diagnostic testing at all of our laboratories.

- North America
(Massachusetts and California, US)
- Europe (France)
- Asia (Japan)

The same techniques and technologies are implemented at all of our diagnostic sites worldwide, giving you confidence that we will provide the consistent results that you have come to expect from Charles River.

Complimentary Shipping Materials

We provide International Air Transport Association (IATA)-compliant sample and animal shipping containers (sample shipping materials, shipping labels and containers, live-animal shippers, etc.) free of charge to all of our customers. To receive materials, simply contact Charles River or use our confidential online Shipping Materials Request Form (www.criver.com/info/quotes).

Research Animal Health Surveillance

(Pages 48-55)

- Mouse health monitoring, serology, microbiology
- Rat health monitoring, serology, microbiology
- Gerbil and rabbit health monitoring, serology, microbiology
- Hamster and guinea pig health monitoring, serology, microbiology
- Ferret testing services
- Infectious disease PCR testing, including PRIA panels

Cell Line and Research Biologics Screening

(Pages 56-57)

- Infectious agent PCR testing for rodent and human pathogens

Supplemental Services (Pages 58-59)

- Individual agent serology
- Parasitology
- Pathology
- Environmental monitoring
- Clinical pathology

Serology Reagents for In-House Surveillance

(Pages 60-61)

- MFIA® reagents
- ELISA reagents
- IFA reagents

Internet Laboratory Information Management System (ILIMS) for Health Data Management (Page 1)

Consultation and Education

Since health concerns vary greatly with facility size and research type, our professional and technical staff members provide one-on-one consultation and educational presentations on topics including but not limited to:

- Routine and quarantine health surveillance program design or refinement, including FELASA recommendations
- Results interpretation
- Prevalent infectious agents, outbreak detection and management
- Technical training for users of serology reagents and ILIMS

Research Animal Health Surveillance

Services offered as part of a health monitoring protocol are also available individually.

Mouse Health Monitoring Protocols

Protocol	Price	Included Tests				
		Serology*	PCR**	Microbiology*	Parasitology***	Pathology
HM Basic	208.75	(None)	(None)	Upper respiratory and gastrointestinal tracts included with all protocols.	Endoparasite and ectoparasite exams included with all protocols.	Gross necropsy with histology of lesions included with all protocols.
HM Basic (Immunodeficient)	295.75	(None)	<i>C. bovis</i> , <i>Pneumocystis</i>			
HM Prevalent	247.75	Prevalent	(None)			
HM Standard	266.75	Tracking	(None)			
HM Assessment	292.50	Assessment	(None)			
HM Plus	319.50	Assessment Plus	(None)			

*Agents included are listed below under Mouse Serology and Mouse Microbiology. Additional agents (e.g., LDV) can be included for a fee.

**In addition to the included PCR tests, samples can be collected and screened for agent(s) of your choice (e.g., Helicobacter, Streptobacillus, Parvovirus) for an added fee. See pages 53 and 55 for details.

***Additional parasitology tests can be added for a fee. See page 58 for available tests.

Mouse Serology Profiles

Agent	Parvovirus	Prevalent	Tracking	Assessment	Assessment Plus
MPV* (1-5)	●	●	●	●	●
MVM	●	●	●	●	●
Generic Parvovirus NS-1	●	●	●	●	●
MHV*		●	●	●	●
MNV		●	●	●	●
TMEV (GDVII)		●	●	●	●
EDIM (ROTA-A)		●	●	●	●
SEND			●	●	●
PVM			●	●	●
REO			●	●	●
MPUL			●	●	●
LCMV				●	●
MAV*				●	●
ECTRO				●	●
K				●	●
POLY				●	●
MCMV					●
HANT					●
PHV (HANT)					●
MTLV					●
ECUN					●
CARB					●
Sample Suitability Control: Tissue	●	●	●	●	●
Sample Suitability Control: Anti-Mouse IgG	●	●	●	●	●
System Suitability Control: Mouse IgG	●	●	●	●	●
Price**	32.25	54.00	66.50	103.50	139.25

*Multiple assays are included. MPV: several recombinant viral coat proteins (VP2) to detect seroconversion to MPV-1 through -5. MHV: a recombinant MHV nucleocapsid (N) protein and two highly purified whole-viral lysate antigens. MAV: highly purified whole-viral lysate antigens to both FL and K87.

**Price per serum sample when submitted directly to the serology laboratory.

Mouse Microbiology

Upper Respiratory Culture			Gastrointestinal Tract Culture	
<i>Bordetella bronchiseptica</i>	<i>Pasteurella multocida</i>	<i>Streptococcus</i> (Beta-hemolytic)	<i>Citrobacter rodentium</i>	<i>Salmonella</i> spp.
<i>Corynebacterium kutscheri</i>	<i>Pasteurella pneumotropica</i> (Jawetz and Heyl biotypes)	<i>Streptococcus pneumoniae</i>	<i>Klebsiella oxytoca</i>	Other
<i>Klebsiella oxytoca</i>	<i>Pseudomonas aeruginosa</i>	Other	<i>Klebsiella pneumoniae</i>	
<i>Klebsiella pneumoniae</i>	<i>Staphylococcus aureus</i>		<i>Pseudomonas aeruginosa</i>	
Price*	71.75		Price*	51.75

*Panel price per swab when submitted directly to the microbiology laboratory; additional charge applied with the submission of a whole animal. Individual assays are available upon request. Please contact Charles River for sample specifications.

Rat Health Monitoring Protocols

Protocol	Price	Included Tests*			
		Serology**	Microbiology**	Parasitology***	Pathology
HM Basic	208.75	(None)	Upper respiratory and gastrointestinal tracts included with all protocols.	Endoparasite and ectoparasite exams included with all protocols.	Gross necropsy with histology of lesions included with all protocols.
HM Basic (Immunodeficient)	208.75	(None)			
HM Prevalent	247.75	Prevalent			
HM Standard	266.75	Tracking			
HM Assessment	292.50	Assessment			
HM Plus	319.50	Assessment Plus			

*In addition, samples can be collected for PCR and screened for agent(s) of your choice (e.g., Helicobacter, Parvovirus) for an additional fee. See pages 54-55 for details.

**Agents included in these profiles/panels are listed below under Rat Serology and Rat Microbiology.

***Additional parasitology tests can be added for a fee. See page 58 for available tests.

Rat Serology Profiles

Agent	Parvovirus	Prevalent	Tracking	Assessment	Assessment Plus
RPV	●	●	●	●	●
H-1	●	●	●	●	●
KRV	●	●	●	●	●
RMV	●	●	●	●	●
Generic Parvovirus NS-1	●	●	●	●	●
SDAV		●	●	●	●
RTV		●	●	●	●
PCAR ("RRV")		●	●	●	●
SEND			●	●	●
PVM			●	●	●
REO			●	●	●
MPUL			●	●	●
LCMV				●	●
MAV				●	●
HANT					●
IDIR (ROTA-B)					●
ECUN					●
CARB					●
Sample Suitability Control: Tissue	●	●	●	●	●
Sample Suitability Control: Anti-Rat IgG	●	●	●	●	●
System Suitability Control: Rat IgG	●	●	●	●	●
Price*	42.75	55.00	68.00	86.25	110.75

*Price per serum sample when submitted directly to the serology laboratory.

Rat Microbiology

Upper Respiratory Culture			Gastrointestinal Tract Culture	
<i>Bordetella bronchiseptica</i>	<i>Pasteurella multocida</i>	<i>Streptococcus</i> (Beta-hemolytic)	<i>Klebsiella oxytoca</i>	<i>Salmonella</i> spp.
<i>Corynebacterium kutscheri</i>	<i>Pasteurella pneumotropica</i> (Jawetz and Heyl biotypes)	<i>Streptococcus pneumoniae</i>	<i>Klebsiella pneumoniae</i>	Other
<i>Klebsiella oxytoca</i>	<i>Pseudomonas aeruginosa</i>	Other	<i>Pseudomonas aeruginosa</i>	
<i>Klebsiella pneumoniae</i>	<i>Staphylococcus aureus</i>			
Price*	71.75		Price*	51.75

*Panel price per swab when submitted directly to the microbiology laboratory; additional charge applied with the submission of a whole animal. Individual assays are available upon request. Please contact Charles River for sample specifications.

Rabbit Health Monitoring Protocols

Protocol	Price	Included Tests				
		Serology*	Histopathology	Microbiology*	Parasitology	Pathology
HM Basic	338.00	(None)	Brain, kidney, and lung collection included with all protocols.	Upper respiratory and gastrointestinal tracts included with all protocols.	Endoparasite and ectoparasite exams included with all protocols.	Gross necropsy with histology of lesions included with all protocols.
HM Standard	381.50	Tracking				
HM Assessment	454.75	Assessment				

*Agents included in these profiles/panels are listed below under Rabbit Serology and Rabbit/Gerbil Microbiology. Additional agents (eg., Myxomatosis, rabbit hemorrhagic disease virus [RHDV]) can be included for a fee.

Gerbil Health Monitoring Protocols

Protocol	Price	Included Tests			
		Serology*	Microbiology*	Parasitology	Pathology
HM Basic	208.75	(None)	Upper respiratory and gastrointestinal tracts included with all protocols.	Endoparasite and ectoparasite exams included with all protocols.	Gross necropsy with histology of lesions included with all protocols.
HM Standard	263.00	Tracking			
HM Assessment	330.25	Assessment			

*Agents included in these profiles/panels are listed below under Gerbil Serology and Rabbit/Gerbil Microbiology.

Rabbit Serology Profiles

Agent	Tracking	Assessment
ECUN	●	●
CARB	●	●
TREP	●	●
CPIL		●
PIV-1		●
PIV-2		●
REO		●
ROTA		●
LCMV		●
TOXO		●
Sample Suitability Control: Tissue	●	●
Sample Suitability Control: Anti-Rabbit IgG	●	●
System Suitability Control: Rabbit IgG	●	●
Price*	43.50	123.75

*Price per serum sample when submitted directly to the serology laboratory.

Gerbil Serology Profiles

Agent	Tracking	Assessment
LCMV	●	●
CPIL	●	●
MHV		●
REO		●
SEND		●
PVM		●
MVM		●
ROTA		●
PIV-2		●
PIV-3		●
HANT		●
PHV (HANT)		●
Sample Suitability Control: Tissue	●	●
Price*	45.25	136.50

*Price per serum sample when submitted directly to the serology laboratory.

Rabbit/Gerbil Microbiology

Upper Respiratory Culture		Gastrointestinal Tract Culture
<i>Bordetella bronchiseptica</i>	<i>Pseudomonas aeruginosa</i>	<i>Klebsiella oxytoca</i>
<i>Corynebacterium kutscheri</i> (Gerbil only)	<i>Staphylococcus aureus</i>	<i>Klebsiella pneumoniae</i>
<i>Klebsiella oxytoca</i>	<i>Streptococcus</i> (Beta-hemolytic)	<i>Pseudomonas aeruginosa</i>
<i>Klebsiella pneumoniae</i>	<i>Streptococcus pneumoniae</i>	<i>Salmonella</i> spp.
<i>Pasteurella multocida</i>	Other	Other
<i>Pasteurella pneumotropica</i>		
Price* 71.75 (Gerbil) 59.75 (Rabbit)		Price* 51.75

*Panel price per swab when submitted directly to the microbiology laboratory; additional charge applied with the submission of a whole animal. Individual assays are available upon request. Please contact Charles River for sample specifications.

Hamster/Guinea Pig Health Monitoring Protocols

Protocol	Price	Included Tests				
		Serology*	PCR	Microbiology*	Parasitology	Pathology
HM Basic	208.75	(None)	Lawsonia (Hamster only)	Upper respiratory and gastrointestinal tracts included with all protocols.	Endoparasite and ectoparasite exams included with all protocols.	Gross necropsy with histology of lesions included with all protocols.
HM Assessment	246.00	Assessment				

*Agents included in these profiles/panels are listed below under Hamster and Guinea Pig Serology and Hamster/Guinea Pig Microbiology.

Hamster* Serology Profile

Agent	Assessment
SEND	●
SV-5	●
PVM	●
REO	●
LCMV	●
ECUN	●
Sample Suitability Control: Tissue	●
Sample Suitability Control: Anti-Hamster IgG	●
System Suitability Control: Hamster IgG	●
Price**	45.75

*Applicable for Golden Syrian hamsters only. Other strains should be screened using the serology profile for Miscellaneous Rodent Species.

**Price per serum sample when submitted directly to the serology laboratory.

Guinea Pig Serology Profile

Agent	Assessment
SEND	●
SV-5	●
PVM	●
REO	●
LCMV	●
ECUN	●
PIV-3	●
GAV	●
MPUL	●
Sample Suitability Control: Tissue	●
Sample Suitability Control: Anti-Guinea Pig IgG	●
System Suitability Control: Guinea Pig IgG	●
Price*	47.00

* Price per serum sample when submitted directly to the serology laboratory.

Hamster/Guinea Pig Microbiology

Upper Respiratory Culture	Gastrointestinal Tract Culture
<i>Bordetella bronchiseptica</i>	<i>Campylobacter</i> spp. (Hamster only)
<i>Corynebacterium kutscheri</i>	<i>Campylobacter coli</i> (Hamster only)
<i>Klebsiella oxytoca</i>	<i>Campylobacter jejuni</i> (Hamster only)
<i>Klebsiella pneumoniae</i>	<i>Klebsiella oxytoca</i>
<i>Pasteurella multocida</i>	<i>Klebsiella pneumoniae</i>
<i>Pasteurella pneumotropica</i> (Jawetz and Heyl biotypes)	<i>Pseudomonas aeruginosa</i>
<i>Pseudomonas aeruginosa</i>	<i>Salmonella</i> spp.
<i>Staphylococcus aureus</i>	Other
Price* 71.75	Price* 63.50 (Hamster) 51.75 (GP)

*Panel price per swab when submitted directly to the microbiology laboratory; additional charge applied with submission of a whole animal. Individual assays are available upon request. Please contact Charles River for sample specifications.

Miscellaneous Rodent Species Serology Profile

For applicable species (e.g., vole, Armenian hamster, cotton rat, ground squirrel), please contact Charles River.

Profile	Agents Included	Price
Assessment	MHV, REO, SEND, PVM, MVM, LCMV, ROTA, PIV-2, PIV-3, HANT, PHV, ECUN	137.00

Ferret Testing Services

Charles River offers the following services to screen your ferret colonies:

- Infectious Disease PCR
- Microbiology
- Parasitology
- Clinical Chemistry
- Hematology
- Histopathology

Please contact us at 1.877.274.8371 or askcharlesriver@crl.com for further details, agent list and pricing.



Proactive monitoring of your research ferret colonies is the best way to ensure that a health issue does not compromise the results of your research. To help you manage the potential risk, we deliver sensitive and specific testing to screen your animal facility.

Infectious Disease PCR Testing for Animal Health Surveillance

Some assays listed in this section can be used to screen multiple species (e.g., mouse, rat, rabbit). To determine the host species for each agent, please refer to the Glossary of Terms on page 68.

Individual Agent Testing and Sample Pooling

The agents listed in the panels below and on pages 54-55 can be tested for individually (\$82.25 per agent). **Pooling:** For no additional fee, you can pool samples for PCR testing. Many sample types (e.g., feces) can be pooled depending on the testing process and the agent of interest. For PCR Rodent Infectious Agent (PRIA) panels (below and on page 54), our processes allow us to pool the genetic material extracted from multiple sample types (e.g., feces, oral swab and skin swab). Please contact Charles River regarding pooling of samples for PCR testing.

NEW PRIA Panels for Mouse Health Surveillance/Quarantine

	Agent	Ante-mortem* Sample Type	Mouse	Mouse	Mouse	Mouse	Mouse
			Enteric PRIA	Prevalent PRIA	Surveillance PRIA	FELASA** PRIA	Surveillance Plus PRIA
Parasites	Fur mites*** (<i>Myobia</i> , <i>Myocoptes</i> , <i>Radfordia</i>)	Fur swab		●	●	●	●
	Pinworm*** (<i>Aspicularis</i> and <i>Syphacia</i>)		●	●	●	●	●
	<i>Cryptosporidium</i>	Feces			●	●	●
	<i>Giardia</i> (<i>G. lamblia</i> and <i>G. muris</i>)				●	●	●
	<i>Spiroplasma muris</i>				●	●	●
Viruses	Mouse hepatitis virus (MHV)	Feces	●	●	●	●	●
	Mouse parvoviruses*** (MPV-1, MPV-2, MPV-3, MPV-4, MVM)		●	●	●	●	●
	Mouse rotavirus (MRV/EDIM)		●	●	●	●	●
	Murine norovirus (MNV)		●	●	●	●	●
	Theiler's murine encephalomyelitis virus (TMEV [GDVII])		●	●	●	●	●
	Mouse adenovirus (MAV-1 & MAV-2)					●	●
Bacteria / Fungi	Cilia-associated respiratory bacillus (CAR Bacillus)	Oral swab			●		●
	<i>Pneumocystis</i> spp.	Lung****			●		●
	<i>Corynebacterium bovis</i>	Skin swab			●		●
	<i>Helicobacter</i> *** (Genus, <i>H. hepaticus</i> , <i>H. bilis</i>)		●	●	●	●	●
	<i>Pasteurella pneumotropica</i> (Jawetz and Heyl biotypes)		●	●	●	●	●
	<i>Citrobacter rodentium</i>				●	●	●
	<i>Corynebacterium kutscheri</i>				●	●	●
	<i>Mycoplasma pulmonis</i>				●	●	●
	<i>Salmonella</i> spp.				●	●	●
	<i>Streptobacillus moniliformis</i>				●	●	●
	<i>Streptococcus</i> (Beta-hemolytic; Group B)	Feces				●	●
	<i>Staphylococcus aureus</i>					●	●
	<i>Clostridium piliforme</i>						●
	<i>Streptococcus</i> (Beta-hemolytic; Group C)						●
	<i>Streptococcus</i> (Beta-hemolytic; Group G)						●
	<i>Streptococcus pneumoniae</i>						●
	<i>Bordetella bronchiseptica</i>						●
	<i>Campylobacter</i> spp.						●
	<i>Klebsiella oxytoca</i>						●
	<i>Klebsiella pneumoniae</i>						●
<i>Pseudomonas aeruginosa</i>					●		
<i>Staphylococcus xylosum</i>					●		
Controls	Positive template		●	●	●	●	●
	Negative template		●	●	●	●	●
	Spike inhibition		●	●	●	●	●
	Nucleic acid recovery control (NARC)		●	●	●	●	●
Price		252.00	259.25	355.00	362.25	435.75	

*For post-mortem sample collection, contact Charles River for alternative sample types.

**Panel is compatible with FELASA recommendations. Other tests (e.g., serology assays) can be added to provide a comprehensive screen.

***Strain determination assays are performed on all positive results.

****Post-mortem sample required.

NEW PRIA Panels for Rat Health Surveillance/Quarantine

Agent		Ante-mortem* Sample Type	Rat Enteric PRIA	Rat Prevalent PRIA	Rat Surveillance PRIA	Rat FELASA** PRIA	Rat Surveillance Plus PRIA
Parasites	Fur mites*** (<i>Myobia</i> , <i>Myocoptes</i> , <i>Radfordia</i>)	Fur swab		●	●	●	●
	Pinworm*** (<i>Aspiculuris</i> and <i>Syphacia</i>)		●	●	●	●	●
	<i>Giardia</i> (<i>G. lamblia</i> and <i>G. muris</i>)	Feces			●	●	●
	<i>Spironucleus muris</i>					●	●
Viruses	Rat coronavirus (RCV, SDAV)		●	●	●	●	●
	Rat parvoviruses*** (RPV, KRV, RMV, H-1)	Feces	●	●	●	●	●
	Rat theilovirus (Theiler's-like virus of rats [RTV])		●	●	●		●
	Mouse adenovirus (MAV-1 & MAV-2)			●		●	●
Bacteria / Fungi	Cilia-associated respiratory bacillus (CAR Bacillus)	Oral swab			●		●
	<i>Pneumocystis</i> spp.	Lung****		●	●		●
	<i>Helicobacter</i> *** (Genus, <i>H. hepaticus</i> , <i>H. bilis</i>)		●	●	●	●	●
	<i>Pasteurella pneumotropica</i> (Jawetz and Heyl biotypes)		●	●	●	●	●
	<i>Corynebacterium kutscheri</i>				●	●	●
	<i>Mycoplasma pulmonis</i>				●	●	●
	<i>Salmonella</i> spp.				●	●	●
	<i>Streptobacillus moniliformis</i>				●	●	●
	<i>Streptococcus</i> (Beta-hemolytic; Group B)				●	●	●
	<i>Staphylococcus aureus</i>				●		●
	<i>Bordetella bronchiseptica</i>	Feces				●	●
	<i>Clostridium piliforme</i>					●	●
	<i>Streptococcus</i> (Beta-hemolytic; Group C)					●	●
	<i>Streptococcus</i> (Beta-hemolytic; Group G)					●	●
	<i>Streptococcus pneumoniae</i>					●	●
	<i>Campylobacter</i> spp.						●
	<i>Klebsiella oxytoca</i>						●
	<i>Klebsiella pneumoniae</i>						●
<i>Pseudomonas aeruginosa</i>						●	
<i>Staphylococcus xylosum</i>						●	
Controls	Positive template		●	●	●	●	●
	Negative template		●	●	●	●	●
	Spike inhibition		●	●	●	●	●
	Nucleic acid recovery control (NARC)		●	●	●	●	●
Price			237.25	252.00	310.75	332.75	400.00

*For post-mortem sample collection, contact Charles River for alternative sample types.

**Panel is compatible with FELASA recommendations. Other tests (e.g., serology assays) can be added to provide a comprehensive screen.

***Strain determination assays are performed on all positive results.

****Post-mortem sample required.

Individual Agent Testing and Sample Pooling

The agents listed on pages 53-54 and in the table below can be tested for individually (\$82.25 per agent). **Pooling:** For no additional fee, you can pool samples for PCR testing. Many sample types (e.g., feces) can be pooled depending on the testing process and the agent of interest. Please contact Charles River regarding pooling of samples for PCR testing.

Other Rodent/Rabbit Health Surveillance PCR Assays

The agents listed below can be tested for individually (\$82.25 per sample).

Viruses	
Encephalomyocarditis virus (EMCV)	Mouse cytomegalovirus (MCMV)
Guinea pig adenovirus (GAV)	Mouse thymic virus (MTLV)
Guinea pig cytomegalovirus (GpCMV)	Mousepox (Ectromelia) (ECTRO)
Hantavirus hantaan (HANT)	Pneumonia virus of mice (PVM)
Hantavirus Seoul (SEO)	Polyoma virus (POLY)
K virus (K)	Rabbit picobirnavirus (RPBV)
Lactate dehydrogenase-elevating virus (LDV)	Rat cytomegalovirus (RCMV)
Ljungen virus (LV)	Rat rotavirus (IDIR [ROTA-B])
Lymphocytic choriomeningitis virus (LCMV)	Reovirus (Type 1 & 3) (REO)
Mouse adenovirus (MAV-1 & MAV-2)	Sendai (SEND)
Other	
<i>Campylobacter coli</i>	<i>Lawsonia intracellularis</i>
<i>Campylobacter jejuni</i>	<i>Spirochete muris</i>
<i>Cryptosporidium</i>	<i>Toxoplasma gondii</i>
<i>Encephalitozoon cuniculi</i>	



Providing accurate results to you is important to us. We have constructed our facility to prevent contamination and have designed our assays to provide the highest possible level of sensitivity and specificity.

Cell Line and Research Biologics Screening

Infectious Disease PCR Testing

Our TaqMan® PCR assays are employed so you can perform precautionary screening on your research biologics (e.g., primary and continuous cell lines, cell line products, ascities, purified antibodies) to confirm that they are free of infectious agents and maintain the validity of your *in vivo* research.

In addition to the rodent and human PCR panels (below and on page 57), custom panels and individual agent testing are available upon request; please inquire for pricing. Please note that this service is available for research purposes only.

PCR Panels to Screen **Cell Lines and Research Biologics** for Rodent Infectious Agents

Agent	Mouse Essential Panel	Rat Essential Panel	Mouse/Rat Comprehensive Panel
Murine norovirus (MNV)	●		●
Mouse parvoviruses* (MPV-1, MPV-2, MPV-3, MPV-4, MVM)	●		●
Mouse hepatitis virus (MHV)	●		●
Reovirus (Type 1 & 3) (REO)	●	●	●
Lymphocytic choriomeningitis virus (LCMV)	●	●	●
Lactate dehydrogenase-elevating virus (LDV)	●	●	●
Mouse rotavirus (MRV/EDIM)	●		●
Theiler's murine encephalomyelitis virus (TMEV [GDVII])	●	●	●
Mousepox (Ectromelia) (ECTRO)	●		●
Hantavirus hantaan (HANT)	●		●
Hantavirus seoul (SEO)		●	●
Polyoma virus (POLY)	●		●
K virus (K)			●
Mouse adenovirus (MAV-1 & MAV-2)	●		●
Mouse cytomegalovirus (MCMV)			●
Mouse thymic virus (MTLV)			●
Pneumonia virus of mice (PVM)			●
Sendai (SEND)	●	●	●
Rat cytomegalovirus (RCMV)		●	●
Rat theilovirus (Theiler's-like virus of rats [RTV])		●	●
Rat parvoviruses* (RPV, KRV, RMV, H-1)		●	●
Rat rotavirus (IDIR)		●	●
Rat coronavirus (RCV, SDAV)		●	●
<i>Mycoplasma</i> (genus) (including <i>Acholeplasma</i>)	●	●	●
<i>Mycoplasma pulmonis</i>	●	●	●
Positive template control	●	●	●
Negative template control	●	●	●
Spike inhibition control	●	●	●
Nucleic acid recovery control (NARC)	●	●	●
Price	425.25	371.50	603.50

*Strain determination assays are performed on all positive results.

PCR Panels to Screen **Cell Lines and Research Biologics** for Human Infectious Agents

Agent	Human HEP/HIV	Human Essential	Human Comprehensive
Polyomavirus (John Cunningham virus)		●	●
Polyomavirus (BK virus)		●	●
Herpesvirus type 6		●	●
Herpesvirus type 7		●	●
Herpesvirus type 8		●	●
Parvovirus B19		●	●
Epstein-Barr virus		●	●
Hepatitis A virus		●	●
Hepatitis B virus	●	●	●
Hepatitis C virus	●	●	●
Papillomavirus type 16		●	●
Papillomavirus type 18		●	●
Human T-lymphotropic virus		●	●
Human cytomegalovirus		●	●
Human immunodeficiency virus type 1	●	●	●
Human immunodeficiency virus type 2	●	●	●
Adeno-associated virus		●	●
Human foamy virus		●	●
<i>Mycoplasma</i> (genus) (including <i>Acholeplasma</i>)	●	●	●
Lymphocytic choriomeningitis virus (LCMV)			●
Hantavirus hantaan			●
Hantavirus seoul			●
Spike inhibition control	●	●	●
Nucleic acid recovery control (NARC)	●	●	●
Positive template control	●	●	●
Negative template control	●	●	●
Price	218.75	548.75	631.00

Supplemental Services

Services can be added to a health monitoring protocol and are available individually.

Individual Agent Rodent/Rabbit Serology

Tests	Price
Multiplexed Fluorometric ImmunoAssay® (MFIA)®	12.75
Indirect fluorescent antibody (IFA) test	26.75
Lactate dehydrogenase-elevating virus (LDV)*	21.25
Rapid plasma reagin (RPR) test for rabbit TREP	28.25

*Primary test for lactate dehydrogenase (LDH) enzyme; confirmation performed using LDV PCR assay.

Rodent Parasitology

Sample Type	Test	Price
Feces*	Fecal Concentration Centrifugation (FCC)	42.00
	Pinworm PCR (<i>Aspicularis</i> and <i>Syphacia</i>)	82.25
	<i>Cryptosporidium</i> PCR	82.25
	<i>Giardia</i> PCR (<i>G. lamblia</i> , <i>G. muris</i>)	82.25
	<i>Spiroplasma muris</i> PCR	82.25
Swab*	Fur mite PCR	82.25
Tape	Tape Test for Ectoparasites	10.50
	Tape Test for Endoparasites	10.00
Live Animal	Direct Exam for Ectoparasites	9.00
	Direct Exam for Endoparasites	19.25
	Wet Mount for Protozoan	19.25

*Up to 8 samples for FCC and 10 samples for PCR can be pooled and tested as a single group with one result reported.

Pathology

We offer full-service diagnostic histopathology, either with live animal submission or by direct submission of fixed tissues, paraffin blocks or slides. You can choose from routine and specialized necropsy procedures such as whole-body perfusion and collection of frozen tissues for RNA analysis. We offer histologic evaluation of tissues from multiple species, complete tissue processing and slide preparation and/or routine and specialized staining techniques, as well as contract slide preparation and/or evaluation. Please inquire for pricing and further details. As part of an HM protocol, gross lesions are collected for histopathology at no additional charge.

Environmental Monitoring

Microbial/Bioburden and Sterility Testing

Test Type	Microbial/Bioburden	Sterility	Price
Water	●		92.75
		●	57.50
Rodent Feed	●		92.75
		●	57.50
Rodent Bedding	●		92.75
		●	57.50

Surface Testing

Tests	Price
Environmental swab (culture) for rodent pathogens	59.75
Environmental swab (PCR) for rodent pathogens	Prices upon request*
Surface swab (culture) for relative count	44.00
RODAC™ plate count	8.75
RODAC™ plate count with Gram stain	31.75

*PCR testing for the agent(s) of your choice. Price may vary with agent selection. Please contact Charles River for details.

Clinical Pathology Services

Clinical Chemistry Profiles

Assay	Abbreviation	NEW Lipid	Liver	Kidney	Complete
Alanine aminotransferase	ALT		●		●
Albumin	ALB		●	●	●
Alkaline phosphatase	ALK		●		●
Aspartate aminotransferase	AST		●		●
Bilirubin (total)	TBIL		●		●
Total protein	TP		●	●	●
Blood urea nitrogen	BUN			●	●
Calcium	CA			●	●
Cholesterol	CHOL	●			●
Creatinine	CREAT			●	●
Glucose	GLU				●
Inorganic phosphate	PHOS			●	●
Triglycerides	TRIG	●			●
High-density lipoprotein	HDL	●			
Low-density lipoprotein	LDL	●			
Hemoglobin A1c	HbA1c				●
Chloride	CL			●	●
Potassium	K			●	●
Sodium	NA			●	●
Sample suitability control	CNTRL	●	●	●	●
Price		47.25	44.00	46.50	55.75

In addition to the profiles listed above, the following are available (prices upon request):

- Cardiovascular profile
- Diabetes profile
- Anemia profile
- Thyroid profile
- Custom profile
- Individual tests

Hematology Services

Tests	Price
CBC with differential*	43.25
WBC with differential**	40.00
Hematocrit*	34.25

*Whole blood sample.

**Lavage or ascites sample only.

Serology Reagents for In-House Surveillance

Commercial use of Charles River reagents requires specific licensing. Please inquire for further details.

MFIA® Reagents

MFIA® Bead Mixture* (Each unit contains 0.3 mL and is sufficient for one plate of 96 tests.)

Item	Description	Price
Mouse Parvovirus	MPV-1, MPV-2, MVM, NS-1	1,339.50
Mouse Prevalent	Parvovirus Profile and MHV, MNV, TMEV (GDVII), EDIM (ROTA-A)	2,511.75
Mouse Tracking	Prevalent Profile and SEND, PVM, REO, MPUL	4,186.50
Mouse Assessment	Tracking Profile and LCMV, MAV, ECTRO, K, POLY	6,169.00
Mouse Assessment Plus	Assessment Profile and MCMV, HANT, ECUN, CARB, CPIL, MTLV, PHV (HANT)	7,870.25
Rat Prevalent	RPV, H-1, KRV, RMV, NS-1, SDAV, RTV, PCAR	2,971.25
Rat Tracking	Prevalent Profile and SEND, PVM, REO, MPUL	4,456.25
Rat Assessment Plus	Tracking Profile and LCMV, MAV, HANT, ECUN, CARB, CPIL, IDIR (ROTA-B)	6,312.75
Rabbit Assessment	ECUN, CARB, CPIL, PIV-1, PIV-2, REO, ROTA, LCMV, TOXO	4,186.50
Guinea Pig Assessment	SEND, SV-5, PVM, REO, LCMV, ECUN, PIV-3, MPUL	3,768.00
Hamster Assessment	SEND, SV-5, PVM, REO, LCMV, ECUN	2,599.50

*Sample and system suitability controls included in profile mixture.

MFIA® Control Sera Package (Unit contains 0.25 mL [high/low range positive, nonimmune] and is sufficient for five plates).

Item	Price	Item	Price
"Mouse A" for Parvovirus, Prevalent, Tracking	518.00	Rabbit Assessment	697.75
"Mouse B" for Assessment, Assessment Plus	1,369.00	Guinea Pig Assessment	364.00
"Rat A" for Prevalent, Tracking	404.75	Hamster Assessment	266.75
"Rat B" for Assessment Plus	653.00		

MFIA® Supplemental Reagents (Each unit is sufficient for five plates)

Item	Price	Item	Price
Conjugate for Mouse/Rat Samples	185.75	Primary Diluent (Rodent and Rabbit)	167.50
Conjugate for Rabbit Samples	370.75	Streptavidin-R-Phycoerythrin (SPE)	209.25
Conjugate for Guinea Pig Samples	189.00		
Conjugate for Hamster Samples	555.50		

Rodent/Rabbit ELISA* Reagents

Item	Species				Unit	Each Unit Sufficient for:	Price
	Mouse	Rat	Guinea Pig	Hamster			
96-well coated plate	●	●	●	●	1 plate	48 tests	157.00
	●				0.2 ml	10,000 tests	33.25
Conjugate**		●			0.2 ml	10,000 tests	115.50
			●	●	0.2 ml	10,000 tests	31.25
Control sera – Positive (High or low score)	●			●	0.5 ml	10 plates	62.50
		●	●		0.5 ml	10 plates	31.25
Control sera – Negative	●			●	0.1 ml	10 plates	16.75
		●	●		0.1 ml	10 plates	8.25

*See table below for available agents.

**Peroxidase-conjugated, affinity purified, goat antibody to species (IgG).

Rodent/Rabbit IFA* Reagents

Item	Species						Unit	Each Unit Sufficient for:	Price
	Mouse	Rat	Guinea Pig	Hamster	Rabbit	Gerbil			
18-well coated slide	●	●	●	●	●	●	1 slide	18 tests	79.25
Conjugate	●	●	●	●	●	●	0.1 mL	180 tests	31.25
Control sera – Positive or negative	●			●			0.1 mL	10 slides	16.75
		●	●		●		0.1 mL	10 slides	8.25

*See table below for available agents.

Available Rodent/Rabbit ELISA and IFA Reagent Assays

Agent	Platform	
	ELISA	IFA
CARB	●	●
CPIL	●	●
ECTRO	●	●
ECUN	●	●
EDIM	●	●
GDVII	●	●
H-1	●	●
HANT	●	●
K	●	●
KRV	●	●
LCMV	●	●
MARTH		●

Agent	Platform	
	ELISA	IFA
MAV	●	●
MCMV	●	●
MHV	●	●
MNV	●	●
MPUL	●	●
MPV	●	●
MTLV		●
MVM	●	●
NS-1	●	
PCAR	NEW ●	NEW ●
PHV	NEW ●	●
PIV-3	●	●

Agent	Platform	
	ELISA	IFA
POLY	●	●
PVM	●	●
REO	●	●
RMV	●	
RPV	●	●
RTV	●	●
SDAV	●	●
SEND	●	●
SV-5	●	●
TOXO		●

Glossary of Terms

Agent	Abbreviation	Family/Order	Subfam/Genus	Host Species*
Aleutian disease virus	ADV	Parvoviridae	Amdovirus	F
Chicken anemia virus	CAV	Circoviridae	Gyrovirus	C
Cilia-associated respiratory bacillus	CARB	Unclassified	Unclassified	M, R, Rb
<i>Clostridium piliforme</i>	CPIL	Clostridaceae	Clostridium	M, R, Rb, F
Distemper virus	CDV	Paramyxoviridae	Morbillivirus	F
Ectromelia virus (Mousepox)	ECTRO	Poxviridae	Orthopoxvirus	M
<i>Encephalitozoon cuniculi</i>	ECUN	Pleistophoridae	Encephalitozoon	M, R, GP, H, Rb
Encephalomyocarditis virus	EMCV	Picornaviridae	Cardiovirus	M, R
Epizootic catarrhal enteritis	ECE	Coronaviridae	Unclassified	F
Guinea pig adenovirus	GAV	Adenoviridae	Mastadenovirus	GP
Guinea pig cytomegalovirus	GpCMV	Herpesviridae	Betaherpesvirus	GP
Hantaan	HANT	Bunyaviridae	Hantavirus	M, R
Influenza A virus	INFA	Orthomyxoviridae	Influenzavirus A	F
Kilham rat virus	KRV	Parvoviridae	Parvovirus	R
Lactate dehydrogenase-elevating virus	LDV/LDH	Arteriviridae	Arterivirus	M
Ljungan virus	LV	Picornaviridae	Parechovirus	R
Lymphocytic choriomeningitis virus	LCMV	Arenaviridae	Arenavirus	M, R, GP, H
Minute virus of mice	MVM	Parvoviridae	Parvovirus	M
Mouse adenovirus	MAV	Adenoviridae	Mastadenovirus	M, R
Mouse cytomegalovirus	MCMV	Herpesviridae	Betaherpesvirus	M
Mouse hepatitis virus	MHV	Coronaviridae	Coronavirus	M
Mouse parvovirus	MPV-1/-2/-3/-4/-5	Parvoviridae	Parvovirus	M
Mouse pneumonitis virus	K	Papovaviridae	Polyomavirus	M
Mouse rotavirus (Epizootic diarrhea of infant mice virus)	MRV / EDIM / ROTA-A	Reoviridae	Rotavirus	M
Mouse thymic virus	MTLV	Herpesviridae	Unclassified	M
Murine norovirus	MNV	Caliciviridae	Norovirus	M
<i>Mycoplasma arthritidis</i>	MARTH	Mycoplasmataceae	Mycoplasma	M, R
<i>Mycoplasma pulmonis</i>	MPUL	Mycoplasmataceae	Mycoplasma	M, R
Parainfluenza virus (type 1)	PIV-1	Paramyxoviridae	Respirovirus	Rb
Parainfluenza virus (type 2)	PIV-2	Paramyxoviridae	Rubulavirus	Rb
Parainfluenza virus (type 3)	PIV-3	Paramyxoviridae	Respirovirus	GP
Parvovirus NS-1	NS-1	Parvoviridae	Parvovirus	M, R
<i>Pneumocystis carinii</i>	PCAR	Pneumocystidaceae	Pneumocystis	R
Pneumonia virus of mice	PVM	Paramyxoviridae	Pneumovirus	M, R, GP, H
Polyoma virus	POLY	Papovaviridae	Polyomavirus	M
Prospect Hill virus	PHV	Bunyaviridae	Hantavirus	M
Rabbit adenovirus	RbAV	Adenoviridae	Mastadenovirus	Rb
Rabbit rotavirus	ROTA	Reoviridae	Rotavirus	Rb
Rat coronavirus/sialodacryoadentitis virus	RCV, SDAV	Coronaviridae	Coronavirus	R
Rat cytomegalovirus	RCMV	Herpesviridae	Betaherpesvirus	R
Rat minute virus	RMV	Parvoviridae	Parvovirus	R
Rat parvovirus	RPV	Parvoviridae	Parvovirus	R
Rat respiratory virus	RRV	See " <i>Pneumocystis carinii</i> "		R
Rat rotavirus (infectious diarrhea of infant rats)	ROTA-B / IDIR	Reoviridae	Rotavirus	R
Rat theilovirus (Theiler's-like virus of rats)	RTV	Picornaviridae	Theilovirus	R
Reovirus	REO	Reoviridae	Orthoreovirus	M, R, GP, H
Rabbit picobirnavirus	RPBV	Picobirnaviridae	Picobirnavirus	Rb
Sendai virus	SEND	Paramyxoviridae	Respirovirus	M, R, GP, H
Seoul virus	SEO	Bunyaviridae	Hantavirus	M, R
Simian virus 5	SV-5	Paramyxoviridae	Rubulavirus	GP, H
Theiler's murine encephalomyelitis virus	TMEV (GDVII)	Picornaviridae	Cardiovirus	M, R
Toolan's H-1 virus	H-1	Parvoviridae	Parvovirus	R
<i>Toxoplasma gondii</i>	TOXO	Sarcocystidae	Toxoplasma	Rb
<i>Treponema paraluis-cuniculi</i>	TREP	Spirochaetales	Treponema	Rb

*Species: M = mouse, R = rat, GP = guinea pig, H = hamster, Rb = rabbit, C = chicken, F = ferret

General Terms & Conditions of Sale

Charles River Laboratories, Inc. ("Charles River") shall provide the products ("Products") and services ("Services") described in the Charles River invoice, quotation, protocol, or statement of work ("SOW") and Customer shall purchase the Products and Services pursuant to the specifications contained in the SOW and in accordance with the following terms and conditions:

1. Provision of the Products and Conduct of the Research Services.
Charles River will provide the Products and conduct the Services in accordance with the SOW, which may be amended from time to time upon the mutual agreement of Charles River and the Customer. Charles River will adhere to all government laws, rules and regulations applicable to the provision of the Products or the conduct of the Services at the respective place of their delivery ("Applicable Law"). If an amendment requires additional or different work on the part of Charles River, Charles River may agree to conduct such work and will be paid an amount mutually agreed to by the parties. Deviations from the SOW may be made in an emergency without the Customer's approval, provided that Charles River shall use commercially reasonable efforts to obtain the Customer's verbal approval, which shall be subsequently confirmed by the Customer in writing. The parties acknowledge that during the course of performing the Services in accordance with the SOW, additional costs may be incurred by Charles River as a result of procedural changes which do not amount to or require a change in the SOW, but which are deemed necessary by Charles River to successfully perform the Services, and which could not be foreseen at the time of the preparation of the SOW. If such procedural changes occur, Charles River shall advise the Customer prior to their implementation and solicit the Customer's agreement as to the necessity and additional cost thereof. Should Charles River be unable to contact the Customer in advance, the Customer agrees that in order to maintain the integrity of the Services, Charles River may proceed accordingly and be entitled to recover such additional costs from the Customer upon presentation of an explanation of such procedural changes and the necessity thereof. Any Products purchased from Charles River shall be used by Customer in a safe manner, and in accordance with all applicable governmental rules and regulations.

Customer, including its employees, agrees that all animals purchased from Charles River, descendants of those animals derived by inbreeding or crossbreeding, including unmodified derivatives of those animals or their descendants ("Animals") shall not be: (i) used for any purpose other than the internal research of the Customer, (ii) bred (for sale or otherwise) or provided to any third party for any use, or (iii) provided to any agent or other third party to provide breeding or other services with respect to such Animals, unless Charles River provides Customer with prior written authorization for deviation from these terms and conditions or a license. Customers should not, without the prior consent of Charles River, return animals or shipping containers to Charles River. Acceptance of delivery of Products or Services shall be deemed agreement to these terms and conditions. No other document attempting to negate or otherwise modify the terms hereof, including any purchase order or request for proposal, shall be binding upon Charles River, and instead these terms and conditions, including any special terms and conditions set forth separately, shall exclusively govern the sale of Products and Services by Charles River. The purchase of any Products conveys to the Customer the non-transferable right to use the Product and the components of the Products only in research conducted by the Customer and specifically in accordance with the SOW provided with the Products. The Customer cannot sell or otherwise transfer to a third party the Products or its components for Commercial Purposes. "Commercial Purposes" means any activity for cash or other consideration, including but not limited to (1) use of the Products or its components or materials made using the Products or its components in manufacturing, or to provide a service, information or data, or for clinical, therapeutic, diagnostic or prophylactic purposes or (2) resale of the Products or its components or materials made using the product or its components, except by licensed distributors, whether or not resold for use in research. The foregoing limitations are required by Charles River given the nature of the products sold, and to the extent that Charles River owns or controls (with the right to sublicense) patent rights or other intellectual property rights applicable to the Products or its intended use, those rights are licensed to Customer on a non-exclusive basis only for the uses expressly permitted above for the Products purchased. If Customer fails to comply with the foregoing limitations, in addition to any other remedies available to Charles River, the warranty provided for Products will be automatically voided.

2. Test Article

If required for performance of the Services, Customer will provide Charles River with sufficient amounts of all compounds, materials, animals, substances, devices and protocols meeting relevant specifications, including health and genetic data, ("Test Articles") with which to perform the Services, as well as such complete and accurate data as is necessary to apprise Charles River of the identity, strength, purity, stability and composition or other appropriate characteristics of each batch, proper storage and safe handling requirements of the Test Articles, including a Material Safety Data Sheet (MSDS) or equivalent documentation. In addition, Customer will provide Charles River certification that the methods of synthesis, fabrication, or derivation of the Test Article have been documented by the Customer. All costs associated with shipping the Test Articles to Charles River shall be the responsibility of Customer, and Charles River shall not be responsible for any loss, damage or destruction of the Test Articles while in transit. All Test Articles and Products used in connection with the Services shall remain the property of Customer.

3. Inspections

3.1 Upon reasonable advance notice and during regular business hours, Charles River will permit the Customer to visit the Charles River facilities, in compliance with Charles River's biosecurity measures, where the Services are taking place to monitor Charles River's performance of the Services.

3.2 Charles River will notify the Customer as soon as practical in the event of any regulatory inspection of Charles River's facilities that directly impact the Services. In the event of an inspection of the Customer by a regulatory or administrative agency, Charles River will to the extent permissible under Applicable Law, consult with and allow the Customer to review and comment on any responses to such agency related to the inspection.

4. Reports

4.1 Charles River will keep complete and accurate records of the status and progress of the Services if and as required by the SOW. Charles River will furnish a report or data containing information as specified in the SOW. All reports will be prepared in the standard format of Charles River.

4.2 Neither Charles River nor the Customer shall publish any report or data prepared for the Customer by Charles River without the prior written consent of the other, which shall not be unreasonably withheld.

4.3 In the event Charles River provides electronic access to the data, records, reports and other documentation and the Customer elects to use such electronic access, the use of such electronic access shall be governed by Charles River's standard access terms and conditions which are available on request.

5. Compensation

5.1 Prices will be as per the price list (if applicable, price of Products is based on highest weight range) on the day of delivery, and they do not include applicable Value Added Tax, packaging or shipment expenses. The price list may be adjusted by Charles River annually. The Customer will pay Charles River as set forth in the SOW. All invoices are due and payable thirty (30) days from the date of the invoice and the Customer agrees to pay all invoices submitted. All amounts not paid by the Customer when due shall accrue interest from the applicable due date until paid, at the rate of one and one half percent (1.50%) per month. In addition, Charles River may elect to cease or suspend work on the Services or withhold required reports or other deliverables if the Customer does not make payments when due and payable.

5.2 All applicable termination, delay or cancellation fees will be set forth in the SOW.

5.3 If in the judgment of Charles River, Customer's financial condition is precarious or there has been a materially adverse change in Customer's financial condition, Charles River shall have the right to demand payment or other assurances which it deems adequate before providing any additional Services.

6. Confidentiality

6.1 In the course of providing the Products or performing the Services, Charles River and Customer may exchange proprietary and confidential information. The parties will identify, in writing, such information as confidential and/or proprietary. If a party intends to disclose confidential information to the other party orally, the disclosing party shall (i) alert the other party of the confidential nature of the disclosure prior to the disclosure and (ii) provide written notice to the other party of the confidential nature and contents of such disclosure within ten (10) days of the original disclosure. Each party will use its commercially reasonable efforts to maintain such information in confidence and will employ reasonable and appropriate procedures to prevent its unauthorized publication or disclosure unless required by Applicable Law to disclose such information. Neither party shall use the other party's proprietary and/or confidential information for any purpose other than in performance of this Agreement. The obligations of confidentiality set forth in this Section 6 will survive termination or expiration of this Agreement for a period of five (5) years.

The confidentiality provisions of this Section 6 shall not apply to any part of such information, which (i) is known to the receiving party at the time it was obtained from the disclosing party; (ii) is acquired by receiving party from a third party, and such third party did not obtain such information directly or indirectly from the disclosing party under obligation not to disclose; (iii) is or becomes published or otherwise in the public domain other than by violation of this Agreement by the receiving party; (iv) is independently developed by the receiving party without reference to or reliance upon the information provided by the disclosing party; or (v) is required to be disclosed by the receiving party to comply with applicable laws or governmental regulations; provided that the receiving party provides prompt written notice of such disclosure to the disclosing party and cooperates with the disclosing party's reasonable and lawful actions to avoid and/or minimize the extent of such disclosure.

7. Warranties

7.1 If applicable, the Customer warrants that it owns all rights, title and interest in the Test Articles furnished by the Customer to Charles River hereunder and the intellectual property related thereto, and that Charles River's use of any and all such Test Articles in connection with the Services does not infringe any third party rights.

7.2 Charles River warrants that to its knowledge the Products and Services shall conform to the specifications contained in the SOW and Applicable Law. Charles River does not warrant or represent that the results of the Services will be acceptable to any regulatory or governmental agency to which they are presented nor that the results of the Services will enable the Customer to further develop, market or otherwise exploit the Test Articles or any other product or service. **THE WARRANTY BY CHARLES RIVER SET FORTH HEREIN IS IN LIEU OF ANY AND ALL OTHER REPRESENTATIONS OR WARRANTIES, EXPRESS, IMPLIED OR STATUTORY INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR FOR NON-INFRINGEMENT OF A PATENT, TRADEMARK OR OTHER INTELLECTUAL PROPERTY RIGHT.** Any claim for breach of this warranty must be made in writing to Charles River within ten (10) business days after the Products are delivered or the completion of Services, after which time the Products or Services shall be deemed finally accepted. Risk of loss and title to the Products shall pass to Customer once the Products leave Charles River's facility or are delivered to a common carrier, as applicable.

8. Limitation of Liability

8.1 Charles River will not be liable for penalties or liquidated damages or for special, indirect, consequential punitive, exemplary or incidental damages of any type or kind (including, without limitation, lost profits) regardless of whether any such losses or damages are characterized as arising from breach of contract, breach of warranty, tort, strict liability or otherwise, even if Charles River is advised of the possibility of such losses or damages, or if such losses or damages are foreseeable.

8.2 Charles River's liability, regardless of the form of action, shall be limited to actual damages and shall not exceed the total price paid for the Products or Services pursuant to which such liability arises. In no event shall Charles River be liable for any damages arising from or in connection with any decision by

the Customer or any third party to further research, develop or market the Test Articles or any derivative or product or service related thereto (or to the Products or Services), or the use of the Test Articles or any product or derivative or service related thereto (or to the Products or Services).

8.3 Subject to the limitations set forth in this Section 8, in the event that Charles River commits a breach of the warranty set forth in Section 7.2 above, Charles River's sole liability, and the Customer's sole remedy shall be for Charles River to replace the Products or issue a credit therefore, or conform the work or portion of the Services affected by the breach to the relevant specification.

9. Indemnities

9.1 Subject to the limitations of liability contained in Section 8 above, Charles River will defend, indemnify, save and hold harmless the Customer and its parent, subsidiaries and affiliates and their respective directors, officers, employees and agents from and against any claims, demands, suits, actions, causes of action, losses, damages, fines and liabilities, including reasonable professional fees ("Claims") arising out of or in connection with or attributable to Charles River's gross negligence or willful misconduct in provision of the Products or performance of the Services, and will pay any costs and damages which, by final judgement, after exhaustion of all reasonable appeals, may be assessed against them, provided that Charles River is given written notice of the Claims within five (5) days of the date notice to the Customer and is given information, reasonable assistance, and sole authority to defend and/or settle the claim.

9.2 The Customer will defend, indemnify, save and hold harmless Charles River and its parent, subsidiaries and affiliates and their respective directors, officers, employees and agents from and against any Claims arising out of or in connection with or attributable to (a) the research, development, manufacture, distribution, use, sales or other disposition by the Customer, or any distributor, collaborator, customer, sublicensee, representative or agent of the Customer, of the Test Articles and/or any other substances upon which the Services were performed or for which the Products were used, or (b) any infringement of any third party's patent rights or unauthorised use or misappropriation of its know-how, or (c) the Customer's gross negligence or willful misconduct, or breach of this agreement or (d) personal injury related to contact with the Products during visits to Charles River's facilities or after delivery of the Products to Customer, and will pay any costs and damages which, by final judgement, after exhaustion of all reasonable appeals, may be assessed against them, provided that the Customer is given written notice of the Claims within five (5) days of the date of notice to Charles River and is given information, reasonable assistance and sole authority to defend and/or settle the claim.

10. Ownership

Any inventions and/or techniques for providing the Products or performing the Services which relate to the conduct of Charles River's business are and shall remain Charles River's exclusive property, including but not limited to; present and future documentation, scientific and technical data, test procedures and other information that is owned or licensed by Charles River and that is not developed hereunder. Charles River shall have the right to use concurrent control data as part of its general historical database. Any data, discoveries or inventions developed or generated which directly relate to any information or materials provided by the Customer hereunder, including without limitation new data, uses, processes or compositions directly relating to the information or materials provided hereunder shall be the exclusive property of the Customer. Charles River agrees to assist the Customer in securing for the Customer any patents, copyrights or other proprietary rights in such data, discoveries or inventions, and to perform all acts that may be reasonably required to vest in the Customer all right, title and interest in such data, discoveries or inventions, and Charles River shall be compensated at its standard rates for such assistance. All costs and expenses associated with establishing the Customer's rights therein shall be the Customer's responsibility.

11. Insurance

Each party shall carry insurance sufficient to cover its interest or potential liabilities hereunder including, but not limited to worker's compensation, if applicable, and comprehensive general liability.

12. Force Majeure

Except with respect to the payment of any amount due hereunder, neither party shall be considered in default of the performance of any obligation hereunder to the extent that the performance of such obligation is prevented or delayed by fire, flood, earthquake, explosion, strike, acts of terrorism, war, insurrection, embargo, government requirement, civil or military authority, animal activism, act of God, or any other event, occurrence or condition which is not caused, in whole or in part, by that party, and which is beyond the reasonable control of that party.

13. Termination

13.1 Unless otherwise specified in the SOW, the Customer shall have the right to terminate the SOW at any time without cause upon thirty (30) days prior written notice to Charles River. In the event of such termination, Charles River shall be paid for all Products provided or Services rendered through the effective date of termination, together with any additional expenses incurred in connection with the shutdown of the Services including without limitation any irrevocably committed costs and any cancellation or termination fee set forth in the SOW.

13.2 Either party may terminate this Agreement or SOW, as applicable, at any time upon thirty (30) days prior written notice to the other party, for material breach of the Agreement by the other party if such breach is not remedied to the non-breaching party's reasonable satisfaction within the thirty (30) day notice period.

13.3 Upon termination, neither party will have any further obligations, except that (i) the liabilities accrued through the date of termination and (ii) the obligations which by their terms survive termination, including the applicable confidentiality, record keeping, regulatory compliance, intellectual property and indemnification provisions of this Agreement, shall survive termination.

14. Dispute Resolution

The parties shall attempt, in good faith, to resolve through negotiations any controversy, claim, or dispute arising out of this Agreement. In the event that negotiations are not successful, the controversy, claim, or dispute shall be submitted to third party mediation upon terms reasonably acceptable to the parties. If such claim, controversy or dispute is not resolved through mediation, upon written demand of either party, the claim, controversy or dispute shall be submitted to arbitration. Such arbitration shall take place in the jurisdiction from

which the Products are provided or in which the services are provided, shall be conducted in English, and shall proceed in accordance with the laws of such jurisdiction and the United Nations Commission on International Trade Law Arbitration Rules (UNCITRAL) as at present in force. A record and transcript of the proceedings shall be maintained. Any award shall be made in writing and in reasonable detail, setting forth the findings of fact and conclusion of law supporting the award. The determination of a majority of the panel of arbitrators shall be the decision of the arbitrators, which shall be binding regardless of whether one of the parties fails or refuses to participate in the arbitration. All costs of such arbitration, except expert fees and attorneys' fees, shall be shared equally by the parties.

15. Archiving

15.1 All reports and supporting documentation originating with Charles River are the Customer's property ("Materials"). Except as otherwise set forth in the SOW, and if applicable and requested in writing by the Customer, Charles River shall retain the Materials for a period of one year following the date of any final report, or for such shorter period as may be required by Applicable Law. At the end of such period, Charles River shall contact Customer to determine disposition of the Materials as follows: (a) extended storage of the Materials; (b) return of the Materials to Customer at Customer's expense or (c) disposal of Materials at Customer's expense. If the Customer requests Charles River to continue to store the Materials and Charles River agrees, the cost for storage of the Materials shall continue to be invoiced to the Customer at Charles River's then current rates. If the Customer fails to give such instructions, Charles River shall notify the Customer, and if such instructions are still not forthcoming within thirty (30) days of said notification, then Charles River shall have the option of continuing storage of the Materials, which will be deemed to have been authorised for an additional period of not less than one (1) year or Charles River may return the Materials to the Customer at the Customer's expense. The Customer shall be liable for storage charges until the Materials are returned to the Customer. While the Materials are in transit to the Customer, all risk of loss or exposure to the Materials shall be borne by the Customer.

15.2 If the Materials require additional and/or special storage requirements, additional charges for storage shall be assessed and invoiced to the Customer. Invoices shall be issued annually in advance and are due and payable upon receipt and the Customer agrees to pay all invoices submitted.

15.3 Charles River's liability for archival services, regardless of the form of action, shall not exceed the fee paid for one year's storage of the Materials. In no event shall Charles River be liable for penalties or liquidated damages or for special, indirect, consequential punitive, exemplary or incidental damages of any type or kind (including, without limitation, lost profits) in connection with the storage of the Materials. Charles River shall have no liability for loss of specimens or information beyond its reasonable control, including losses caused by loss of refrigeration.

16. Miscellaneous

16.1 Notices. All notices from one party to the other will be in writing. Notices shall be sent by overnight courier, certified mail, return receipt requested, or by other means of delivery requiring a written acknowledged receipt. All notices shall be effective upon receipt.

16.2 Independent Contractor. The business relationship of the Charles River to the Customer is that of an independent contractor and not of a partner, joint venturer, employer, employee or any other kind of relationship.

16.3 Assignment. This Agreement, and the rights and obligations hereunder, may not be assigned or transferred by either party without the prior written consent of the other party, except that either party may assign this Agreement to an affiliated company or in connection with the merger, consolidation or sale of substantially all assets related to the Products or Services.

16.4 Entire Agreement. This Agreement sets forth the entire agreement and understanding between the parties, superseding any and all previous statements, negotiations, documents, agreements and understandings, whether oral or written, as to the subject matter of this Agreement (including and subsequent or conflicting terms and conditions of Customer). No modification or waiver of the provisions of this Agreement shall be valid or binding on either party unless in writing and signed by both parties.

16.5 Severability. In the event that any one or more of the provisions contained in this Agreement for any reason is held to be invalid, illegal or unenforceable in any respect, that invalidity, illegality or unenforceability will not affect any other provisions of this Agreement, and all other provisions will remain in full force and effect.

16.6 Applicable Law. This Agreement will in all events and for all purposes be governed by, and construed in accordance with, the laws of the jurisdiction from which the Products are provided or in which the Services are rendered (specifically excluding the United Nations Convention on the International Sale of Goods), without regard to any choice of law principle that would dictate the application of the law of another jurisdiction.

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