

March 27, 2014

Dear prospective MMRRC and RRRC user:

On March 13, 2014 routine testing for rats from Room W113 of the Mutant Mouse Regional Resource Center (MMRRC) and Rat Resource and Research Center (RRRC) revealed one sentinel rat to be positive by fecal PCR for *Helicobacter ganmani* (testing performed by IDEXX BioResearch). Upon receipt of these results, shipping was suspended and all rat sentinels from the room were immediately removed from the room, tested for helicobacters and replaced. To further assess the status of the room, fecal pellets were collected from all 31 rat cages in that room and 60 randomly selected mouse cages and submitted for helicobacter testing at IDEXX BioResearch. All samples (from sentinels and room animals) were found to be negative for rodent helicobacters.

We interpret these results to indicate that the room remains helicobacter-free. The origin of the helicobacter contamination in the sentinel rat could not be determined. While this sentinel was obtained from a helicobacter-free facility, we suspect that it may have been contaminated on arrival. However, this contamination was contained through routine husbandry practices (ventilated rack housing, changing sentinel cages last, etc) and the inherent biology of the agent; spread of rodent helicobacters often requires direct contact and spread via dirty bedding is often limited.

For the coming 3 months, we are more than happy to test rats being shipped to your facility for helicobacter by fecal PCR. If you have questions or concerns, please contact:

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[www.mmrrc.missouri.edu](http://www.mmrrc.missouri.edu) and [www.rrrc.us](http://www.rrrc.us)

Thank you again for using the MMRRC and RRRC.



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Director, Mutant Mouse Regional Resource Center



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**FINAL REPORT OF LABORATORY EXAMINATION**

4011 Discovery Drive, Columbia, MO 65201

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**IDEXX BioResearch Case # 8517-2014**

**Received: 3/3/2014  
Completed: 3/11/2014**

**Submitted By**

Sentinels  
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Columbia, MO 65201

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**Specimen Description**

Species: mouse  
Description: Live Mice  
Number of Specimens/Animals: 5  
Building/Facility: W113

Client ID	Investigator	Room #	Strain	Sex	Age	Rack
1	Bryda	W113	CD-1	F	Adult	2
2	Bryda	W113	CD-1	F	Adult	3
3	Bryda	W113	CD-1	F	Adult	4
4	Bryda	W113	CD-1	F	Adult	5
5	Bryda	W113	CD-1	F	Adult	6

**Services/Tests Performed:** Rederivation Necropsy Profile - mouse

**Serologic evaluation for antibodies to:** *Clostridium piliforme*, *Mycoplasma pulmonis*, CAR bacillus, Ectromelia, EDIM, LCMV, LDEV, MAD1, MAD2, MCMV, MHV, MNV, MPV, MVM, Polyoma, PVM, REO3, Sendai, TMEV, *Encephalitozoon cuniculi*

**PCR evaluation for:** *Helicobacter bilis*, *Helicobacter ganmani*, *Helicobacter hepaticus*, *Helicobacter mastomyrinus*, *Helicobacter rodentium*, *Helicobacter spp.*, *Helicobacter typhlonius*, *Mycoplasma pulmonis*

**Parasitologic evaluation for:** fur mites, mesostigmatid mites, lice, *Spironucleus muris*, *Giardia muris*, large intestinal flagellates and amoeba, pinworms and tapeworms

**Microbiologic evaluation for:** *Citrobacter rodentium*, *Corynebacterium kutscheri*, *Klebsiella oxytoca*, *Klebsiella pneumoniae*, *Pasteurella multocida*, *Pasteurella pneumotropica*, *Salmonella enterica*, *Streptococcus pneumoniae*

**General Comments:** CB: Sentinel mice placed on 12/9/2013.

**Summary:** All test results were negative.

## NECROPSY

No gross lesions were detected in any of the body systems and organs examined.

## SEROLOGY SUMMARY

	1	2	3	4	5
CAR bacillus	-	-	-	-	-
<i>Encephalitozoon cuniculi</i>	-	-	-	-	-
Ectromelia	-	-	-	-	-
EDIM	-	-	-	-	-
LCMV	-	-	-	-	-
LDEV	-	-	-	-	-
<i>Mycoplasma pulmonis</i>	-	-	-	-	-
MAD1	-	-	-	-	-
MAD2	-	-	-	-	-
MCMV	-	-	-	-	-
MHV	-	-	-	-	-
MNV	-	-	-	-	-
MPV	-	-	-	-	-
MVM	-	-	-	-	-
Polyoma	-	-	-	-	-
PVM	-	-	-	-	-
REO3	-	-	-	-	-
TMEV	-	-	-	-	-
Sendai	-	-	-	-	-
<i>Clostridium piliforme</i>	-	-	-	-	-
Mouse IgG	N	N	N	N	N

**Legend:** + = positive - = negative blank = test not performed EQ = equivocal HE = hemolysis precluded testing I = insufficient W = weak positive WB = Western Blot confirmatory analysis pending NS = non-specific reactivity N = normal IgG L = less than normal IgG

## PCR EVALUATION

feces	1	2	3	4	5
<i>Helicobacter</i> spp.	-	-	-	-	-
<i>Helicobacter bilis</i>	-	-	-	-	-
<i>Helicobacter ganmani</i>	-	-	-	-	-
<i>Helicobacter hepaticus</i>	-	-	-	-	-
<i>Helicobacter mastomyrinus</i>	-	-	-	-	-
<i>Helicobacter rodentium</i>	-	-	-	-	-
<i>Helicobacter typhlonius</i>	-	-	-	-	-

nasopharyngeal swab	1	2	3	4	5
<i>Mycoplasma pulmonis</i>	-	-	-	-	-

Legend: + = positive - = negative id:id = pooled sample range id+id+id = non-range pooled sample NT or blank = no test performed wps = weak positive

**Comments:** All samples are first tested by the *Helicobacter* spp. PCR assay; a generic *Helicobacter* PCR assay that detects all bacteria in the *Helicobacter* genus. Samples testing negative on this assay are reported negative for *Helicobacter* spp. and all species-specific helicobacters. Samples testing positive on the *Helicobacter* spp. assay are subsequently retested on the *Helicobacter* spp. assay and tested with PCR assays specific for *H. bilis*, *H. ganmani*, *H. hepaticus*, *H. rodentium* and *H. typhlonius* and positive results are reported.

## PARASITOLOGY

	1	2	3	4	5
parasites	-	-	-	-	-

## MICROBIOLOGY

cecum	1	2	3	4	5
<i>Citrobacter rodentium</i>	-	-	-	-	-
<i>Klebsiella oxytoca</i>	-	-	-	-	-
<i>Klebsiella pneumoniae</i>	-	-	-	-	-
<i>Salmonella enterica</i>	-	-	-	-	-

nasopharynx	1	2	3	4	5
<i>Corynebacterium kutscheri</i>	-	-	-	-	-
<i>Pasteurella multocida</i>	-	-	-	-	-
<i>Pasteurella pneumotropica</i>	-	-	-	-	-
<i>Streptococcus pneumoniae</i>	-	-	-	-	-

Legend: + = agent recovered - = agent not recovered blank = test not performed n = no growth p = Proteus overgrowth, which may interfere with the identification of other bacteria

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SEROLOGY DETAILS

	Baseline	1	2	3	4	5
<b>CAR bacillus</b>						
CAR bacillus purified bacteria	MFI > 3.750	-	-	-	-	-
<b>Encephalitozoon cuniculi</b>						
<i>E. cuniculi</i> purified protozoa	MFI > 0.900	-	-	-	-	-
<b>Ectromelia</b>						
Ectromelia purified virus	MFI > 0.900	-	-	-	-	-
<b>EDIM</b>						
EDIM purified virus	MFI > 4.900	-	-	-	-	-
EDIM VP6 recombinant	MFI > 4.250	-	-	-	-	-
<b>LCMV</b>						
LCMV purified virus	MFI > 1.100	-	-	-	-	-
<b>LDEV</b>						
LDEV	MFI > 2.500	-	-	-	-	-
<b>Mycoplasma pulmonis</b>						
<i>M. pulmonis</i> purified bacteria	MFI > 2.750	-	-	-	-	-
<b>MAD1</b>						
MAD1 purified virus	MFI > 2.550	-	-	-	-	-
<b>MAD2</b>						
MAD2 purified virus	MFI > 4.275	-	-	-	-	-
<b>MCMV</b>						
MCMV purified virus	MFI > 3.500	-	-	-	-	-
<b>MHV</b>						
MHV purified virus	MFI > 4.100	-	-	-	-	-
MHV NC recombinant	MFI > 4.950	-	-	-	-	-
<b>MNV</b>						
MNV purified virus	MFI > 1.500	-	-	-	-	-
MNV VP1 recombinant	MFI > 3.250	-	-	-	-	+7
MNV virus	IFA					-
<b>MPV</b>						

	Baseline	1	2	3	4	5
MPV VP2 recombinant	MFI > 2.750	-	-	-	-	-
NS1 <sup>1</sup>	MFI > 3.000	-	-	-	-	-
<b>MVM</b>						
MVM VP2 recombinant	MFI > 1.275	-	-	-	-	-
NS1 <sup>1</sup>	MFI > 3.000	-	-	-	-	-
<b>Polyoma</b>						
Polyoma purified virus	MFI > 3.500	-	-	-	-	-
<b>PVM</b>						
PVM purified virus	MFI > 1.500	-	-	-	-	-
<b>REO3</b>						
REO3 purified virus	MFI > 4.900	-	-	-	-	-
<b>TMEV</b>						
TMEV purified virus	MFI > 2.250	-	-	-	-	-
RTV purified virus	MFI > 2.750	-	-	-	-	-
<b>Sendai</b>						
Sendai purified virus	MFI > 3.000	-	-	-	-	-
<b><i>Clostridium piliforme</i></b>						
<i>Clostridium piliforme</i> purified bacteria	MFI > 4.950	-	-	-	-	-

**NS1<sup>1</sup>:** NS1 protein is highly conserved among rodent parvoviruses and thus serves as a generic assay for parvovirus seroconversion.

**Legend:** + = positive - = negative blank = test not performed EQ = equivocal HE = hemolysis precluded testing I = insufficient W = weak positive WB = Western Blot confirmatory analysis pending NS = non-specific reactivity N = normal IgG L = less than normal IgG Positive MFI results are reported as "+" followed by a number from 1 to 33 in thousands rounded off to the nearest thousand.

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**IDEXX BioResearch Case # 8523-2014**

**Received: 3/3/2014**

**Completed: 3/6/2014**

**Submitted By**

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**Specimen Description**

Species: mouse/rat  
Number of Specimens/Animals: 2  
Building/Facility: W113

Client ID	Investigator	Room #	Strain	Rack
D	Bryda	W113	mice and rat	1-3
E	Bryda	W113	mice and rat	4-6

**Services/Tests Performed:** Fur Mite - PCR

PCR evaluation for: *Myocoptes*, *Radfordia*/*Myobia*

**General Comments:** CB: Swabs taken from 20 random cages in room W113 for fur mite testing. LOCATED ON A CART OUTSIDE CUSTOMER SERVICE.

**Summary:** All test results were negative.

## PCR EVALUATION

skin swab	D	E
<i>Mycocptes</i>	-	-
<i>Radfordia/Myobia</i>	-	-

Legend: + = positive - = negative id:id = pooled sample range id+id+id = non-range pooled sample NT or blank = no test performed wps = weak positive