

FINAL REPORT OF LABORATORY EXAMINATION

4011 Discovery Drive, Columbia, MO 65201

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IDEXX BioResearch Case # 9367-2018

Received: 3/21/2018

Completed: 4/3/2018

Submitted By

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Specimen Description

Species: rat

Description: Live sentinel rats

Number of Specimens/Animals: 9

Building/Facility: Discovery Ridge

Area: W112, W113, W114

Client ID	Investigator	Room #	Strain /Breed	Sex	Rack	Date Placed
113-E	Bryda	W113	HET RNU	F	2	12/18/2017
112-A	Bryda	W112	HET RNU	F	1	12/18/2017
112-B	Bryda	W112	HET RNU	F	2	12/18/2017
112-C	Bryda	W112	HET RNU	F	3	12/18/2017
112-D	Bryda	W112	HET RNU	F	4	12/18/2017
112-E	Bryda	W112	HET RNU	F	5	12/18/2017
112-F	Bryda	W112	HET RNU	F	6	12/18/2017
112-G	Bryda	W112	HET RNU	F	7	12/18/2017
114-A	Bryda	W114	HET RNU	F	5	12/18/2017

Services/Tests Performed: Rederivation Necropsy Profile

Serologic evaluation for antibodies to: *Clostridium piliforme*, *Mycoplasma pulmonis*, CAR bacillus, H1, Hantaan, KRV, LCMV, MAV1, PVM, RCV/SDAV, REO3, RMV, RPV, RTV, Sendai

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

Histopathologic evaluation for: lung

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

Microbiologic evaluation for: *Corynebacterium kutscheri*, *Pasteurella multocida*, *Pasteurella pneumotropica* biotype Heyl, *Pasteurella pneumotropica* biotype Jawetz, *Salmonella enterica*, *Streptococcus pneumoniae*

General Comments: Discovery Ridge - 2018 Q1 'A' room sentinel rat necropsies

Summary: Low level reactivity to *Clostridium piliforme* was detected by MFI in sample 112-C; however, the follow-up *Clostridium piliforme* IFA test result was negative. The overall conclusion is that the sample is negative for antibodies to *Clostridium piliforme*. No conclusive evidence of serious, naturally occurring infectious disease was found. Please see the report for details.

NECROPSY

Animal 112-B had a small white focus on the right median lung lobe. It is collected for histopathology.

SEROLOGY SUMMARY

	113-E	112-A	112-B	112-C	112-D	112-E	112-F	112-G	114-A
CAR bacillus	-	-	-	-	-	-	-	-	-
Hantaan	-	-	-	-	-	-	-	-	-
LCMV	-	-	-	-	-	-	-	-	-
<i>Mycoplasma pulmonis</i>	-	-	-	-	-	-	-	-	-
MAV1	-	-	-	-	-	-	-	-	-
RPV	-	-	-	-	-	-	-	-	-
RMV	-	-	-	-	-	-	-	-	-
KRV	-	-	-	-	-	-	-	-	-
H1	-	-	-	-	-	-	-	-	-
PVM	-	-	-	-	-	-	-	-	-
RCV/SDAV	-	-	-	-	-	-	-	-	-
REO3	-	-	-	-	-	-	-	-	-
RTV	-	-	-	-	-	-	-	-	-
Sendai	-	-	-	-	-	-	-	-	-
<i>Clostridium piliforme</i>	-	-	-	-	-	-	-	-	-
Rat IgG	N	N	N	N	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	113-E	112-A	112-B	112-C	112-D	112-E	112-F	112-G	114-A
<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>	-	-	-	-	-	-	-	-	-

lung	113-E	112-A	112-B	112-C	112-D	112-E	112-F	112-G	114-A
<i>Pneumocystis carinii</i>	-	-	-	-	-	-	-	-	-

oral swab	113-E	112-A	112-B	112-C	112-D	112-E	112-F	112-G	114-A
<i>Mycoplasma pulmonis</i>	-	-	-	-	-	-	-	-	-

oral swab	113-E	112-A	112-B	112-C	112-D	112-E	112-F	112-G	114-A
<i>Streptobacillus moniliformis</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

PARASITOLOGY

	113-E	112-A	112-B	112-C	112-D	112-E	112-F	112-G	114-A
parasites	-	-	-	-	-	-	-	-	-

HISTOPATHOLOGY

Animal: 112-B	
lung	subpleural accumulations of foamy alveolar macrophage

MICROBIOLOGY

Specimen/Source: cecum

Isolate	113-E	112-A	112-B	112-C	112-D	112-E	112-F	112-G	114-A
<i>Salmonella enterica</i>	-	-	-	-	-	-	-	-	-

Specimen/Source: nasopharynx

Isolate	113-E	112-A	112-B	112-C	112-D	112-E	112-F	112-G	114-A
<i>Corynebacterium kutscheri</i>	-	-	-	-	-	-	-	-	-
<i>Pasteurella multocida</i>	-	-	-	-	-	-	-	-	-
<i>Pasteurella pneumotropica</i> biotype Heyl	-	-	-	-	-	-	-	-	-
<i>Pasteurella pneumotropica</i> biotype Jawetz	-	-	-	-	-	-	-	-	-
<i>Streptococcus pneumoniae</i>	-	-	-	-	-	-	-	-	-

Legend: + = agent recovered - = agent not recovered blank = test not performed n = no growth X = Preliminary

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Completed: 4/3/2018

SEROLOGY DETAILS

	Baseline	113-E	112-A	112-B	112-C	112-D	112-E	112-F	112-G	114-A
CAR bacillus										
CAR bacillus purified bacteria	MFI > 3.750	-	-	-	-	-	-	-	-	-
Hantaan										
Hantaan NP	MFI > 4.000	-	-	-	-	-	-	-	-	-
LCMV										
LCMV recombinant	MFI > 3.000	-	-	-	-	-	-	-	-	-
Mycoplasma pulmonis										
<i>M. pulmonis</i> purified bacteria	MFI > 4.250	-	-	-	-	-	-	-	-	-
MAV1										
MAV1 purified virus	MFI > 3.750	-	-	-	-	-	-	-	-	-
RPV										
RPV purified virus	MFI > 2.500	-	-	-	-	-	-	-	-	-
NS1 ¹	MFI > 3.750	-	-	-	-	-	-	-	-	-
RMV										
RMV VP2 recombinant	MFI > 2.000	-	-	-	-	-	-	-	-	-
NS1 ¹	MFI > 3.750	-	-	-	-	-	-	-	-	-
KRV										
KRV purified virus	MFI > 3.250	-	-	-	-	-	-	-	-	-
NS1 ¹	MFI > 3.750	-	-	-	-	-	-	-	-	-
H1										
H1 purified virus	MFI > 1.750	-	-	-	-	-	-	-	-	-
NS1 ¹	MFI > 3.750	-	-	-	-	-	-	-	-	-
PVM										
PVM purified virus	MFI > 2.500	-	-	-	-	-	-	-	-	-
RCV/SDAV										
RCV/SDAV purified virus	MFI > 3.750	-	-	-	-	-	-	-	-	-
RCV/SDAV Spike	MFI > 3.750	-	-	-	-	-	-	-	-	-
REO3										

If you have questions, please call our toll free number at 1-800-669-0825 or e-mail us at idxxbioresearch@idexx.com.

	Baseline	113-E	112-A	112-B	112-C	112-D	112-E	112-F	112-G	114-A
REO3 purified virus	MFI > 4.900	-	-	-	-	-	-	-	-	-
RTV										
RTV purified virus	MFI > 2.000	-	-	-	-	-	-	-	-	-
TMEV purified virus	MFI > 2.000	-	-	-	-	-	-	-	-	-
Sendai										
Sendai purified virus	MFI > 3.750	-	-	-	-	-	-	-	-	-
<i>Clostridium piliforme</i>										
<i>Clostridium piliforme</i> purified bacteria	MFI > 4.950	-	-	-	EQ	-	-	-	-	-
<i>Clostridium piliforme</i>	IFA				-					

NS1¹: 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.

Test Results

Order #: **2018017072**

University of Missouri
(U Missouri OAR)
OAR Room 01
1720 E Campus Drive
Columbia, MO 65201 USA

Charles River Research Animal Diagnostic Services
(CR RADS)
261 Ballardvale Street
Receiving Dock, Bldg 22
Wilmington MA 01887 USA

Billing Information

Payment Method

Standing Purchase PO#: COLUM-C0000343570
Order Exp. 6/2018

University of Missouri
1720 E Campus Drive
Columbia, MO 65201 USA

Details

Sample(s) from: DCRC

Collection Date
21-Mar-2018

Arrival Date
27-Mar-2018

Approval Date
29-Mar-2018

Notes

Disco - 2018 Q1 - Rat sentinel PCR "A" rooms

Diagnostic Summary

Test	Colony	Tested	+	+/-	?	PDG
All results NEGATIVE						

+ = Positive, +/- = Equivocal, ? = Indeterminate, PDG = Pending

To assure the SPF status of your research animal colonies, it is essential that you understand the sources, pathobiology, diagnosis and control of pathogens and other adventitious infectious agents that may cause research interference. We have summarized this important information in infectious agent **Technical Sheets**, which you can view by visiting http://www.criver.com/info/disease_sheets.

Test Results

Order #: 2018017072

University of Missouri
(U Missouri OAR)
OAR Room 01
1720 E Campus Drive
Columbia, MO 65201 USA

Charles River Research Animal Diagnostic Services
(CR RADS)
261 Ballardvale Street
Receiving Dock, Bldg 22
Wilmington MA 01887 USA

Sample(s) from: DCRC

Notes

Disco - 2018 Q1 - Rat sentinel PCR "A" rooms

Results approved by Magan, Kyria on 29 Mar 2018

Molecular Diagnostics: Infectious Disease PCR

U Missouri Mite and Pinworm Screen PCR

	<u>1</u> 112	<u>2</u> 113	<u>3</u> 114
Mite PCR	-	-	-
Pinworm PCR	-	-	-

Remarks

- = Negative, +/- = Equivocal; + = Positive; I = Inconclusive.

An equivocal result indicates inconsistent amplification detected by real-time PCR.

Inconclusive indicates failure of control result.

Nucleic Acid Recovery Control (NRC)/Inhibition Control: A low copy exogenous nucleic acid was added to sample lysis prior to nucleic acid isolation to serve as both a control to monitor for nucleic acid recovery and PCR inhibition. An RNA NRC also monitors reverse transcription for RNA virus assays. Nucleic acid recovery and PCR inhibition is monitored by a PCR assay specific for the NRC template. Unless otherwise stated, the control results passed for this order.

Any samples reported as equivocal or positive result in this report has been confirmed by re-extracting nucleic acid and repeating real-time PCR amplification to confirm the initial testing result.

Recommended sample types are essential to accurate results. Missing or inappropriate sample types can effect detection. If this report contains an unexpected result or are unsure of recommended sample types, please call Lab Services (781) 222-6701 before taking any action. Additional or alternative testing may be essential to reaching an accurate diagnosis. We will be glad to test newly submitted samples for the positive agents up to the number of unexpected results in this order.

Test Results

Order #: 2018017072

University of Missouri
(U Missouri OAR)
OAR Room 01
1720 E Campus Drive
Columbia, MO 65201 USA

Charles River Research Animal Diagnostic Services
(CR RADS)
261 Ballardvale Street
Receiving Dock, Bldg 22
Wilmington MA 01887 USA

Sample(s) from: DCRC

Notes

Disco - 2018 Q1 - Rat sentinel PCR "A" rooms

Sample Information

Number	Code	Species	Colony	Investigator	Facility	Location	Strain	Placem ent Date
1	112	Rat	DCRC Sentinel	Bryda	Discovery Ridge	W112	HET RNU	12/18/1 7
2	113	Rat	DCRC Sentinel	Bryda	Discovery Ridge	W113	HET RNU	12/18/1 7
3	114	Rat	DCRC Sentinel	Bryda	Discovery Ridge	W114	HET RNU	12/18/1 7

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IDEXX BioResearch Case # 9746-2018

Received: 3/21/2018

Completed: 3/22/2018

Submitted By

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Referred By

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Specimen Description

Species: rat
Description: 2 fur mite swabs
Number of Specimens/Animals: 2
Building/Facility: Discovery Ridge
Area: W112

Client ID	Investigator	Room #
Racks 1-4A	Bryda	W112
Racks 4B-7	Bryda	W112

Services/Tests Performed: Pinworm, Fur mite, Demodex PCR Panel

PCR evaluation for: *Aspicularis tetraptera*, *Demodex musculi*, *Myocoptes*, Pinworms, *Radfordia/Myobia*,
Syphacia muris, *Syphacia obvelata*

General Comments: AOQuarterly fur mite testing.

Summary: All test results were negative.

PCR EVALUATION

pelt swab	Racks 1-4A	Racks 4B-7
Pinworms	-	-
<i>Aspiculuris tetraptera</i>	-	-
<i>Syphacia muris</i>	-	-
<i>Syphacia obvelata</i>	-	-
<i>Myocoptes</i>	-	-
<i>Radfordia/Myobia</i>	-	-
<i>Demodex musculi</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

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IDEXX BioResearch Case # 9748-2018

Received: 3/21/2018

Completed: 3/22/2018

Submitted By

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Craig Franklin
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Veterinary Pathobiology
4011 Discovery Drive
Columbia, MO 65201

Fax: [573] 884=7521
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Specimen Description

Species: rat
Description: 1 rat fur mite swab
Number of Specimens/Animals: 1
Building/Facility: Discovery Ridge
Area: W113

Client ID	Investigator	Room #
W113 fur mite swab rack 2	Bryda	W113

Services/Tests Performed: Fur Mite

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

General Comments: AOQuarterly fur mite testing.

Summary: All test results were negative.

PCR EVALUATION

pelt swab	W113 fur mite swab rack 2
<i>Myocoptes</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

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IDEXX BioResearch Case # 9747-2018

Received: 3/21/2018

Completed: 3/22/2018

Submitted By

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Fax: [573] 884=7521
Email: FranklinC@missouri.edu

Specimen Description

Species: rat
Description: 1 fur mite swab
Number of Specimens/Animals: 1
Building/Facility: Discovery Ridge
Area: W114

Client ID	Investigator	Room #
W114 fur mite swab	Bryda	W114

Services/Tests Performed: Fur Mite

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

General Comments: AO Quarterly fur mite testing.

Summary: All test results were negative.

PCR EVALUATION

pelt swab	W114 fur mite swab
<i>Myocoptes</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