

PRELIMINARY REPORT OF LABORATORY EXAMINATION

4011 Discovery Drive, Columbia, MO 65201

1-800-669-0825 1-573-499-5700

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IDEXX BioResearch Case # 16223-2015

Received: 6/2/2015

Submitted By

Sentinels
University of Missouri-RCA
Columbia, MO 65201

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RhoadesJN@missouri.edu; watermanjd@missouri.edu;
valenzuelad@missouri.edu

Specimen Description

Species: rat
Description: Live rats
Number of Specimens/Animals: 5
Building/Facility: W112

Purchase Order #: DM413

Client ID	Investigator	Room #	Strain	Sex	Age	Rack
1	Bryda	W112	CD	F	Adult	1
2	Bryda	W112	CD	F	Adult	3
3	Bryda	W112	CD	F	Adult	4
4	Bryda	W112	CD	F	Adult	5
5	Bryda	W112	CD	F	Adult	6

Services/Tests Performed: Rederivation Necropsy Profile**General Comments:** CB: Sentinels placed on 03/03/2015.

NECROPSY

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

SEROLOGY SUMMARY

	1	2	3	4	5
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

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

PARASITOLOGY

	1	2	3	4	5
parasites	-	-	-	-	-

MICROBIOLOGY

cecum	1	2	3	4	5
<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>	-	-	-	-	-

nasopharynx	1	2	3	4	5
<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 p = Proteus overgrowth, which may interfere with the identification of other bacteria

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IDEXX BioResearch Case # 16223-2015

Received: 6/2/2015

SEROLOGY DETAILS

	Baseline	1	2	3	4	5
CAR bacillus						
CAR bacillus purified bacteria	MFI > 3.750	-	-	-	-	-
Hantaan						
Hantaan purified virus	MFI > 1.250	-	-	-	-	-
LCMV						
LCMV recombinant	MFI > 1.000	-	-	-	-	-
Mycoplasma pulmonis						
<i>M. pulmonis</i> purified bacteria	MFI > 2.750	-	-	-	-	-
MAV1						
MAV1 purified virus	MFI > 3.750	-	-	-	-	-
RPV						
RPV purified virus	MFI > 2.000	-	-	-	-	-
NS1 ¹	MFI > 3.820	-	-	-	-	-
RMV						
RMV VP2 recombinant	MFI > 1.300	-	-	-	-	-
NS1 ¹	MFI > 3.820	-	-	-	-	-
KRV						
KRV purified virus	MFI > 2.500	-	-	-	-	-
NS1 ¹	MFI > 3.820	-	-	-	-	-
H1						
H1 purified virus	MFI > 1.200	-	-	-	-	-
NS1 ¹	MFI > 3.820	-	-	-	-	-
PVM						
PVM purified virus	MFI > 2.500	-	-	-	-	-
RCV/SDAV						
RCV/SDAV purified virus	MFI > 3.750	-	-	-	-	-
RCV/SDAV Spike	MFI > 3.750	-	-	-	-	-
REO3						
REO3 purified virus	MFI > 4.900	-	-	-	-	-
RTV						

	Baseline	1	2	3	4	5
RTV purified virus	MFI > 1.500	-	-	-	-	-
TMEV purified virus	MFI > 2.000	-	-	-	-	-
Sendai						
Sendai purified virus	MFI > 3.000	-	-	-	-	-
<i>Clostridium piliforme</i>						
<i>Clostridium piliforme</i> purified bacteria	MFI > 4.950	-	-	-	-	-

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.

FINAL REPORT OF LABORATORY EXAMINATION

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IDEXX BioResearch Case # 16219-2015

Received: 6/2/2015

Completed: 6/4/2015

Submitted By

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RhoadesJN@missouri.edu; watermanjd@missouri.edu;
valenzuelad@missouri.edu

Specimen Description

Species: rat
Description: Swabs
Number of Specimens/Animals: 2
Building/Facility: W112

Purchase Order #: DM413

Client ID	Investigator	Room #	Rack
C	Bryda	W112	1-3
D	Bryda	W112	4-6

Services/Tests Performed: Fur Mite

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

General Comments: CB: Quarterly fur mite PCR testing.

Summary: All test results were negative.

PCR EVALUATION

skin swab	C	D
<i>Mycoptes</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

FINAL REPORT OF LABORATORY EXAMINATION

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IDEXX BioResearch Case # 16222-2015

Received: 6/2/2015

Completed: 6/9/2015

Submitted By

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valenzuelad@missouri.edu

Specimen Description

Species: rat
Description: Live rat
Number of Specimens/Animals: 1
Building/Facility: W113

Purchase Order #: DM413

Client ID	Investigator	Room #	Strain	Sex	Age	Rack
1	Bryda	W113	CD	F	Adult	1

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*

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*, *Klebsiella oxytoca*, *Klebsiella pneumoniae*, *Pasteurella multocida*, *Pasteurella pneumotropica*, *Pasteurella pneumotropica* biotype Heyl, *Pasteurella pneumotropica* biotype Jawetz, *Salmonella enterica*, *Streptococcus pneumoniae*

General Comments: CB: Sentinels placed on 03/03/2015.

Summary: All test results were negative.

NECROPSY

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

SEROLOGY SUMMARY

	1
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

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
<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	1
<i>Pneumocystis carinii</i>	-

oral swab	1
<i>Mycoplasma pulmonis</i>	-
<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

Comments: All samples are first tested by the *Helicobacter* spp. PCR assay which is 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 retested with the *Helicobacter* spp. assay and tested with the species-specific helicobacter PCR assays.

PARASITOLOGY

	1
parasites	-

MICROBIOLOGY

cecum	1
<i>Klebsiella oxytoca</i>	-
<i>Klebsiella pneumoniae</i>	-
<i>Salmonella enterica</i>	-

nasopharynx	1
<i>Corynebacterium kutscheri</i>	-
<i>Pasteurella multocida</i>	-
<i>Pasteurella pneumotropica</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 p = Proteus overgrowth, which may interfere with the identification of other bacteria

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IDEXX BioResearch Case # 16222-2015

Received: 6/2/2015

Completed: 6/9/2015

SEROLOGY DETAILS

	Baseline	1
CAR bacillus		
CAR bacillus purified bacteria	MFI > 3.750	-
Hantaan		
Hantaan purified virus	MFI > 1.250	-
LCMV		
LCMV recombinant	MFI > 1.000	-
Mycoplasma pulmonis		
<i>M. pulmonis</i> purified bacteria	MFI > 2.750	-
MAV1		
MAV1 purified virus	MFI > 3.750	-
RPV		
RPV purified virus	MFI > 2.000	-
NS1 ¹	MFI > 3.820	-
RMV		
RMV VP2 recombinant	MFI > 1.300	-
NS1 ¹	MFI > 3.820	-
KRV		
KRV purified virus	MFI > 2.500	-
NS1 ¹	MFI > 3.820	-
H1		
H1 purified virus	MFI > 1.200	-
NS1 ¹	MFI > 3.820	-
PVM		
PVM purified virus	MFI > 2.500	-
RCV/SDAV		
RCV/SDAV purified virus	MFI > 3.750	-
RCV/SDAV Spike	MFI > 3.750	-
REO3		
REO3 purified virus	MFI > 4.900	-

	Baseline	1
RTV		
RTV purified virus	MFI > 1.500	-
TMEV purified virus	MFI > 2.000	-
Sendai		
Sendai purified virus	MFI > 3.000	-
<i>Clostridium piliforme</i>		
<i>Clostridium piliforme</i> purified bacteria	MFI > 4.950	-

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.

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IDEXX BioResearch Case # 16218-2015

Received: 6/2/2015

Completed: 6/4/2015

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RhoadesJN@missouri.edu; watermanjd@missouri.edu;
valenzuelad@missouri.edu

Specimen Description

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

Purchase Order #: DL779 and DM413

Client ID	Investigator	Room #	Rack
A	Bryda	W113	2-6
B	Bryda	W113	1

Services/Tests Performed: Fur Mite

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

General Comments: CB: Quarterly fur mite PCR testing.A is mouse, B is rat

Summary: All test results were negative.

PCR EVALUATION

skin swab	A	B
<i>Mycobacterium</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 # 16224-2015

Received: 6/2/2015
Completed: 6/9/2015

Submitted By

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Specimen Description

Species: rat
Description: Live rats
Number of Specimens/Animals: 3
Building/Facility: W114

Purchase Order #: DM413

Client ID	Investigator	Room #	Strain	Sex	Age	Rack
1	Bryda	W114	CD	F	Adult	1
2	Bryda	W114	CD	F	Adult	2
3	Bryda	W114	CD	F	Adult	3

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*

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*, *Klebsiella oxytoca*, *Klebsiella pneumoniae*, *Pasteurella multocida*, *Pasteurella pneumotropica*, *Pasteurella pneumotropica* biotype Heyl, *Pasteurella pneumotropica* biotype Jawetz, *Salmonella enterica*, *Streptococcus pneumoniae*

General Comments: CB: Sentinels placed on 03/03/2015.

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
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

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
<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	1	2	3
<i>Pneumocystis carinii</i>	-	-	-

oral swab	1	2	3
<i>Mycoplasma pulmonis</i>	-	-	-
<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

Comments: All samples are first tested by the *Helicobacter* spp. PCR assay which is 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 retested with the *Helicobacter* spp. assay and tested with the species-specific helicobacter PCR assays.

PARASITOLOGY

	1	2	3
parasites	-	-	-

MICROBIOLOGY

cecum	1	2	3
<i>Klebsiella oxytoca</i>	-	-	-
<i>Klebsiella pneumoniae</i>	-	-	-
<i>Salmonella enterica</i>	-	-	-

nasopharynx	1	2	3
<i>Corynebacterium kutscheri</i>	-	-	-
<i>Pasteurella multocida</i>	-	-	-
<i>Pasteurella pneumotropica</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 p = Proteus overgrowth, which may interfere with the identification of other bacteria

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IDEXX BioResearch Case # 16224-2015

Received: 6/2/2015

Completed: 6/9/2015

SEROLOGY DETAILS

	Baseline	1	2	3
CAR bacillus				
CAR bacillus purified bacteria	MFI > 3.750	-	-	-
Hantaan				
Hantaan purified virus	MFI > 1.250	-	-	-
LCMV				
LCMV recombinant	MFI > 1.000	-	-	-
Mycoplasma pulmonis				
<i>M. pulmonis</i> purified bacteria	MFI > 2.750	-	-	-
MAV1				
MAV1 purified virus	MFI > 3.750	-	-	-
RPV				
RPV purified virus	MFI > 2.000	-	-	-
NS1 ¹	MFI > 3.820	-	-	-
RMV				
RMV VP2 recombinant	MFI > 1.300	-	-	-
NS1 ¹	MFI > 3.820	-	-	-
KRV				
KRV purified virus	MFI > 2.500	-	-	-
NS1 ¹	MFI > 3.820	-	-	-
H1				
H1 purified virus	MFI > 1.200	-	-	-
NS1 ¹	MFI > 3.820	-	-	-
PVM				
PVM purified virus	MFI > 2.500	-	-	-
RCV/SDAV				
RCV/SDAV purified virus	MFI > 3.750	-	-	-
RCV/SDAV Spike	MFI > 3.750	-	-	-
REO3				
REO3 purified virus	MFI > 4.900	-	-	-

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

	Baseline	1	2	3
RTV				
RTV purified virus	MFI > 1.500	-	-	-
TMEV purified virus	MFI > 2.000	-	-	-
Sendai				
Sendai purified virus	MFI > 3.000	-	-	-
<i>Clostridium piliforme</i>				
<i>Clostridium piliforme</i> purified bacteria	MFI > 4.950	-	-	-

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.

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IDEXX BioResearch Case # 16220-2015

Received: 6/2/2015

Completed: 6/4/2015

Submitted By

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valenzuelad@missouri.edu

Specimen Description

Species: rat
Description: Swabs
Number of Specimens/Animals: 2
Building/Facility: W114

Purchase Order #: DM413

Client ID	Investigator	Room #	Rack
E	Bryda	W114	1-2a
F	Bryda	W114	2b-3

Services/Tests Performed: Fur Mite

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

General Comments: CB: Quarterly fur mite PCR testing.

Summary: All test results were negative.

PCR EVALUATION

skin swab	E	F
<i>Mycoptes</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