

Beyond rack testing. Beyond compare.

Introducing two new levels
of PCR-based testing services
for more customized animal
health monitoring solutions.



More options, more confidence

EDxPrime

A PCR-based animal health monitoring solution to test “just the racks.”

EDx**Prime** works with most rack-based sample collection types including:

- Plenum
- Cage
- Dust
- Filter/Media/Matrices

EDxPlus

A customized monitoring solution with expanded sampling options.

EDx**Plus** includes rack testing, *plus*: we'll partner with you to design a more comprehensive AHM program. Utilizing insights from our recent studies, we'll help you determine—from our extensive portfolio of assays and sampling options— what works best for you.

Regardless of what racks you have, how big or small your facility, how complex your monitoring needs or exclusion list is...we've got you covered.

The science is right in our data

“The role of environmental rack testing has been the subject of lots of discussion and confusion. We “racked our brains” so you don’t have to! We continue to provide the science behind the service by doing comprehensive studies on multiple IVC racks. The goal of the studies was to evaluate the effectiveness of environmental diagnostics for detecting rodent pathogens in ventilated racks using various racks including, Allentown, Tecniplast and Animal Care Systems.”

— *Dr. Bob Livingston, Head of Molecular Diagnostics, IDEXX BioResearch*



EDx Study Design

Mice housed 3/cage on ventilated racks

- Infected mice: 5 cages of mice infected with each of the following organisms:
 - MNV, MHV, MPV, *Helicobacter* spp., *Pasteurella pneumotropica*, *Entamoeba muris*, *Trichomonas muris*, pinworms or furmites
- Uninfected mice: 10 cages of uninfected mice

There are two types of IVC Cage Exhaust:

1. Filtered (air exits via filter)

- * Animal Care Systems
- * Innovive
- * Thoren
- * Lab Products

2. Unfiltered (no filter at exit)

- * Tecniplast
- * Allentown

Filtered Airflow Caging

Animal Care Systems

Cage exhaust filter

- Every 2 weeks
 - Colony mice monitored
 - Dirty bedding transferred to sentinels
- End of 12 week study
 - Colony and sentinel Mice: serology, PCR- feces & fur swab
 - Environmental Diagnostics (EDx)
- Exhaust filter from sentinel cages

Innovive

- Similar design except:
 - Swabs taken at plenum junction
 - Sentinels on a separate rack

Unfiltered Airflow Caging

Tecniplast–Interceptor

Allentown–Sentinel™

- Every 2 weeks
 - Colony mice monitored
 - Dirty bedding transferred to sentinels
- End of 12 week study
 - Colony mice and sentinel mice: serology, PCR- feces & fur swab
 - Environmental Diagnostics (EDx)

Allentown (Sentinel™)

Detection of infectious agents (Study data)

Allentown Sentinel™									
Agent	Infected mice							Sentinel mice	EDx-Sentinel™
	0w	2w	4w	6w	8w	10w	12w	12w	
MNV	10/10	10/10	10/10	10/10	10/10	10/10	8/10	6/10	+
MPV	4/5	4/5	4/5	4/5	4/5	4/5	4/5	9/10	+
MHV	5/5	5/5	1/5	0/5	0/5	0/5	0/5	7/10	+
<i>Helicobacter</i> spp.	5/5	5/5	5/5	5/5	5/5	5/5	5/5	0/10	+
<i>P. pneumotropica</i>	5/5	5/5	5/5	5/5	5/5	5/5	5/5	0/10	+
<i>E. muris</i>	5/5	5/5	5/5	4/5	5/5	5/5	5/5	9/10	+
<i>T. muris</i>	0/5	1/5	1/5	1/5	1/5	1/5	1/5	0/10	-
Pinworms	5/5	5/5	5/5	5/5	5/5	5/5	5/5	5/10	+
Furmites	5/5	5/5	5/5	5/5	5/5	5/5	5/5	0/10	+

- EDx testing of Sentinel™ detected pathogens missed by dirty bedding sentinel animals
- EDx testing is a valuable tool to include in your health monitoring program
- Direct testing of colony animals is still the gold standard for pathogen detection and is useful for confirmatory testing

Tecniplast (Interceptor)

Detection of infectious agents (Study data)

Tecniplast: Interceptor									
	Infected mice							Sentinel mice	EDx-Interceptor
Agent	0w	2w	4w	6w	8w	10w	12w	12w	
MNV	10/10	10/10	10/10	10/10	10/10	10/10	8/10	10/10	+
MPV	5/5	5/5	5/5	5/5	5/5	5/5	5/5	10/10	+
MHV	5/5	5/5	1/5	0/5	0/5	0/5	0/5	4/10	+
<i>Helicobacter</i> spp.	5/5	5/5	5/5	5/5	5/5	5/5	5/5	3/10	+
<i>P. pneumotropica</i>	5/5	5/5	5/5	5/5	5/5	5/5	5/5	0/10	+
<i>E. muris</i>	5/5	5/5	5/5	4/5	5/5	5/5	5/5	9/10	+
<i>T. muris</i>	5/5	5/5	5/5	5/5	4/5	5/5	5/5	0/10	-
Pinworms	5/5	5/5	5/5	5/5	5/5	5/5	4/5	6/10	+
Furmites	5/5	5/5	5/5	5/5	5/5	5/5	5/5	0/10	+

- EDx testing of Interceptor detected pathogens missed by dirty bedding sentinel animals
- EDx testing is a valuable tool to include in your health monitoring program
- Direct testing of colony animals is still the gold standard for pathogen detection and is useful for confirmatory testing

Animal Care Systems

Detection of infectious agents (Study data)

Animal Care Systems Cage Exhaust Filter										
Agent	Infected mice							Sentinel mice	EDx-pooled ¹	EDx-12 wks ²
	0w	2w	4w	6w	8w	10w	12w			
MNV	8/10	7/10	7/10	7/10	7/10	7/10	3/10	10/12	3/3	1/3
MPV	5/5	5/5	5/5	5/5	4/5	5/5	4/5	12/12	3/3	3/3
MHV	5/5	5/5	2/5	0/5	0/5	0/5	0/5	6/12	1/3	0/3
<i>Helicobacter</i> spp.	5/5	5/5	5/5	5/5	5/5	5/5	5/5	0/12	3/3	3/3
<i>P. pneumotropica</i>	5/5	5/5	5/5	5/5	5/5	5/5	5/5	0/12	2/3	2/3
<i>E. muris</i>	5/5	5/5	5/5	5/5	5/5	5/5	5/5	10/12	3/3	3/3
<i>T. muris</i>	3/5	2/5	3/5	3/5	3/5	3/5	2/5	0/12	0/3	0/3
Pinworms	5/5	5/5	5/5	5/5	5/5	5/5	5/5	5/12	3/3	3/3
Furmites	5/5	5/5	5/5	5/5	5/5	5/5	5/5	0/12	2/3	2/3

1 Filter collected every 2 weeks and pooled.

2 Filter moved with sentinel cage and tested at the end of 12 weeks.

- EDx testing detected pathogens missed by dirty bedding sentinel testing
- EDx testing is a valuable tool to include in your health monitoring program
- Direct testing of colony animals is still the gold standard for pathogen detection and is useful for confirmatory testing

Detection of infectious agents (Study data)

Innovive Plenum Swab							
	Infected mice						EDx-Plenum swab
Agent	0w	1w	2w	3w	4w	12w	12w
MNV	5/5	5/5	5/5	5/5	5/5	2/5	–
MPV	5/5	5/5	5/5	5/5	5/5	5/5	–
MHV	5/5	5/5	5/5	4/5	3/5	0/5	–
<i>Helicobacter</i> spp.	5/5	5/5	5/5	5/5	5/5	5/5	–
<i>P. pneumotropica</i>	5/5	5/5	5/5	5/5	5/5	5/5	–
<i>E. muris</i>	4/5	5/5	5/5	5/5	5/5	5/5	–
<i>T. muris</i>	4/5	5/5	5/5	4/5	5/5	5/5	–
Pinworms	5/5	5/5	5/5	5/5	5/5	5/5	–
Furmites	5/5	5/5	5/5	5/5	5/5	5/5	–

- EDx testing of plenums did not detect pathogens
- Type of rack and design of rack is important when implementing EDx monitoring programs

Sample Collection SOP

Exhaust air dust: filter, membrane, matrix and swab sample collection

1. Exhaust air debris collection filters, membranes or matrices measuring up to 6 cm x 9.5 cm can be placed lengthwise in a 50 ml conical tube.
 - a. For matrices suspended in the exhaust air stream, the upward facing side of the matrix should face center of the collection tube.
 - b. For thin filters placed perpendicular to the air stream, the side of the filter facing the airflow should face the center of the collection tube.
2. Swabs of plenums, prefilters, dust or other surfaces can be placed in a 2 ml microcentrifuge tube and the swab head either snapped or cut so that only the swab head is in the tube. Collect as much debris/dust as the swab will hold from the dirtiest portion of the surfaces being swabbed.
3. A 200 ul amount of exhaust air dust may be collected and placed directly in a 2.0 ml microcentrifuge tube for testing.



Ship Samples to:

IDEXX BioResearch • 4011 Discovery Drive • Columbia, MO 65201 • 800-669-0825

Profiles

EDx Parasite Profile

	Parasite Panel	Sample Type
Fur Mites	•	E
Pinworms	•	E
<i>Spironucleus muris</i>	•	E
<i>Entamoeba muris</i>	•	E
<i>Tritrichomonas muris</i>	•	E
<i>Giardia</i> spp.	•	E

E = Environmental samples from open air flow design racks

- Specialized matrices or filters designed to capture exhaust air dust
- Flocked swab of rack exhaust air dust (prefilter, plenum)
- A sample of exhaust air dust (200 ul dust)

EDx Primary* Profile

	Parasite Panel	Sample Type
Fur Mites	•	E
Pinworms	•	E
<i>Spironucleus muris</i>	•	E
<i>Entamoeba muris</i>	•	E
<i>Tritrichomonas muris</i>	•	E
<i>Giardia</i> spp.	•	E
<i>Helicobacter</i>	•	E
<i>Pasteurella pneumotropica</i>	•	E

*Screens for agents not easily transmitted to sentinels

For a complete listing of additional EDx Profile options, click here ►

3R's

Environmental Diagnostics can play a key role in allowing you to **Replace** the use of animals with alternative testing techniques, **Reduce** the number of animals used to a minimum, and **Refine** the way health monitoring is done.



Resources

Click resource links to customer service and product ordering information



EDxPrime

▶ Customer Service

▶ Profiles & Pricing



EDxPlus

▶ Collection Supplies Request

▶ SOP & Shipping

▶ Order Submission

Customer Service: 1 800 669 0825

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