



# Microbiological Services & Environmental Monitoring

Good biosecurity practices include monitoring the health of your laboratory animal colonies as well as monitoring the many items used to support them. Animal housing equipment, feed, bedding, water, and work surfaces may all act as vectors for contamination. Routine microbiological surveillance of both animals and objects in their environment helps maintain the integrity of your research program and alerts you to a potential biosecurity breach.

## Microbiological Testing in Support of Animal Health Monitoring

Our laboratory screens animals for both primary and opportunistic pathogens as part of every health monitoring protocol. We collect and screen cultures for the presence of aerobic, anaerobic, and microaerophilic bacteria that may interfere with research results. In addition, we offer antimicrobial sensitivity testing.

### Respiratory and Enteric Cultures

Each health monitoring protocol includes screening for both respiratory and gastrointestinal pathogens. Isolation of respiratory pathogens is performed by bacterial culture of nasal and/or bronchial fluid aspirates collected aseptically at necropsy. Isolation of enteric bacteria is performed by post-mortem culturing of organisms from the gastrointestinal tract obtained by mucosal scrape and/or lumen content collection. Additionally, any lesions noted during necropsy are cultured. Upon request, we also perform skin cultures to detect bacteria and fungi.

### Organ and Abscess Lesions Cultures

Swabs or samples of organs and abscess lesions may be submitted to our laboratory for bacterial or fungal culture. It is important to use aseptic technique during sample collection. Whole tissue samples should be transported in a sterile container with enough sterile saline to cover the sample.

### Study Support

Our microbiology laboratory conducts non-GLP clinical studies in research animals. Experienced staff can assist in developing pilot studies and protocols for animal models of infectious diseases, wound healing, as well as compound efficacy studies.

### Identification Methods

- API®: This manually-operated system uses standard biochemical reactions to identify bacterial contaminants.
- Vitek®: This self-contained automated system uses optic technology to interpret biochemical reactions used to identify bacteria.
- Sequence Determination: We utilize DNA sequencing to confirm positive findings in the rare case of an ambiguous identification from standard methods.

For free sample collection and shipping materials, or to request a cost estimate, visit [www.criver.com/info/quotes](http://www.criver.com/info/quotes).



## Environmental Monitoring Services

The services outlined below are designed to complement your existing sentinel program. Environmental Monitoring provides a proactive approach to identifying and excluding harmful factors that may affect the health of your animal colonies.

### Water Testing

Water testing indicates if animals have been exposed to unwanted pathogens harbored in their drinking water, and water sterility testing is especially important for facilities that house immunodeficient animals. Testing may be performed on your public water source, water post-filtration (or other decontaminating process), and individual rooms at the sink and lixit level.

### Feed and Bedding Testing

Feed and bedding may be tested periodically, or anytime you change vendors. Testing these materials provides secondary confirmation (in addition to autoclave tape and spore strips) that your autoclave is sterilizing. Potential pathogens may also live in loose-feed and bedding bins. Swabs are provided for testing all of these focus areas.

### Surface Testing

RODAC™ (Replicate Organism Detection and Counting) plates may be submitted to quantify the amount of microbial colonies present in a given area. The agar in a RODAC™ plate protrudes above the plate wall, enabling the growth medium to be pressed directly against flat surfaces such as facility walls and floors. Colony enumeration allows you to judge the efficacy of your cleaning techniques. Charles River also accepts swabs for surface testing.

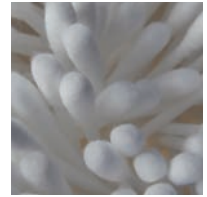
### Facility Testing

Monitoring your facility's environment measures the effectiveness of your cleaning and biosecurity practices. Areas that may be screened include the surfaces of drains, walls, floors, work stations, laminar flow hoods, light switches, door handles, and washed cages. Plates and/or swabs can be used to monitor these areas of critical use. We are happy to review a facility floor plan and make sample site recommendations upon request.

### Post-Contamination Response Testing

Preparing an animal room to go on-line following a microbiologic break is a daunting task. Convincing yourself it is thoroughly decontaminated is equally difficult. A variety of environmental monitoring methods should be utilized to confirm the effectiveness of your recycle procedures. The first assessment should follow surface decontamination. Surface swabs are processed using pathogen-specific PCR targeting the agent that caused the break. For clients who would like sample site recommendations, we will be happy to point out areas of potential contamination after reviewing a facility floor plan marked with animal traffic flow.

For more information, including sample collection and shipping details, please contact Technical Services.



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