

# Microbiology



RTI International is a leader in the design and conduct of basic and applied research in microbiology, molecular biology, and aerobiology. We evaluate and research microbial interactions that affect human health and study the relationship of microorganisms with each other, with humans, and with the environment.

## Overview

RTI's microbiologists have experience working with a variety of environmental samples. These include

- Ambient and indoor air and the workplace environment
- Building materials
- Garments, fabrics, and personal protective equipment
- Soils and sediments
- Water
- Animal and plant tissues.

We have expertise in studying microbes from samples using a variety of basic and molecular methodologies. Our investigating areas range from indoor air quality, antimicrobial and filtration products, and biological effects to bioterrorism-associated biological aerosols.

## Facilities

RTI has a state-of-the-art microbiology research laboratory, a self-contained temperature- and humidity-controlled biosafety level 2 (BSL2) laboratory, a tissue culture laboratory, and a microbiological aerosol test facility that houses an 8' x 8' x 10' dynamic microbial testing chamber.

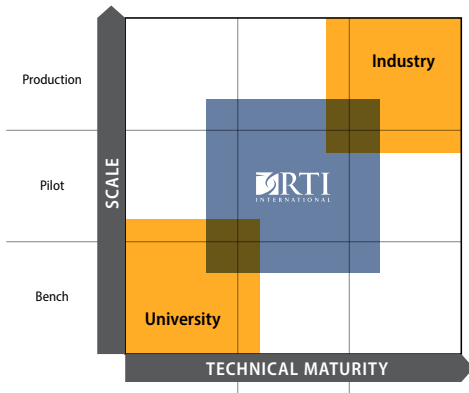
## Research and Services

We offer the following research services to government and industry:

- Bioaerosol sensor and sampler evaluations
- Antimicrobials/biocides assessments (gas-phase, aqueous, bound, and ultraviolet light [UVC])
- Fabric microbial penetration tests
- Materials biodeterioration
- Product evaluation and assessment
- Real time and quantitative detection
- Static and dynamic chamber studies
- System/process evaluation
- Evaluation of bioaerosol air cleaners following ASHRAE, EPA, and DOD procedures
- Influenza identification, quantification, and isolation.

## Microbial Assays

- Antigen assays (e.g., dust mite, cat, dog, ragweed)
- Bacterial, fungal, and viral inactivation
- Bacterial, fungal, and viral load
- Characterization of microbial populations from soils, waters, air, dusts, and materials
- Endotoxin and  $\beta$ -(1,3) glucan assays
- In vitro cytotoxicity assay
- Isolation, quantitation, and identification of bacteria, fungi, and bacterial viruses (bacteriophage)
- Microscopy (fluorescence, phase contrast, 3-D imaging)
- Molecular cloning
- Mutagenesis
- Nucleic acid isolation and purification
- Polymerase chain reaction (PCR, RT-qPCR, qPCR)
- Protein isolation, purification, and analysis
- Recombinant DNA technology
- Transformation
- Western blot analysis
- Immunological assays (e.g., cytokine and cell surface marker detection)



*RTI fills an important gap, bridging university-type basic science and industry-driven commercial activities.*



## Clients

We frequently collaborate with and provide microbiology support to multiple agencies within the Department of Defense, the Centers for Disease Control and Prevention, several offices of the U.S. Environmental Protection Agency (Office of Solid Waste and National Risk Management Research Laboratory, and National Exposure Research Laboratory), and a variety of commercial clients.

## More Information

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