



RESEARCH MODELS

Microbiome Support Services

Microbiome research is a relatively new and uncharted frontier in science. However, with recent studies demonstrating a link between the microbiome and the various diseases that afflict humankind, a surge in funding and research into this promising arena has developed. And as more improvements in genome sequencing and data analysis tools develop, this research field is poised to bring with it novel approaches to health care. With a comprehensive portfolio of microbiome-specific products and services, Charles River is strategically positioned to provide researchers with the necessary tools and research support they will need to advance their studies.

Available services:

- Germ-Free Housing
- Staffing & Training
- Microbiome Diagnostics Services
- Vivarium Program Design

Germ-Free Housing

Isolators are an effective housing solution for safeguarding the health and genetic status of research animals. Typical isolator applications include quarantining and housing research animal models of varying health status. However, for microbiome studies that require animals to be maintained at a germ-free health status, specialized isolators capable of excluding all contaminants are required. Charles River germ-free isolators are available in various sizes, easily transportable, and can be connected to one another to support colony expansion.

EVERY STEP OF THE WAY

Staffing & Training

There are added levels of complexity associated with maintaining a vivarium that supports microbiome research. Unlike standard animal care and maintenance programs that adhere to a strict but selective biosecurity program (i.e., managed exclusion of key infectious agents), a vivarium designated for microbiome research must expand on this biosecurity to ensure that absolutely all agents (pathogenic or not) are accounted for or excluded. Therefore, it is critical that vivarium staff have the necessary qualification and expertise to maintain this level of biosecurity.

Staffing

Charles River provides clients with the staffing and training options that fit their microbiome-specific animal housing and care needs. Through our scientific and technical staffing programs, we can act as an extension of your vivarium operations offering customized options that allow you to maintain as much or as little operational control over your in-house resources, assets, and facilities.

Training

Our training team is dedicated to providing a learning environment for competency-based learning. We offer both didactic and hands-on instruction in actual and simulated microbiome research environments, as well as synchronous and asynchronous e-learning course design and deployment. Training can be provided on a number of subtopics including preventative maintenance, changing cages, sampling, and septic techniques.

Microbiome Diagnostics Services

Germ-free animal colonies are typically monitored for extraneous microbes and fungi, as well as pathogens, with testing being conducted more frequently due to the potential for a high incidence of contamination and its significant consequences to customers. Testing services must be comprehensive enough to screen not only standard pathogens, but also microbial contaminants that may be fastidious or non-cultivable on cell-free media (like much of the indigenous microbiota). Charles River offers multiple screening options that help ensure the germ-free health status of your animal colonies is maintained. Our services include:

- Microbial Culture: Broad analysis of bacteria in samples to confirm the absence of bacteria.
- Next Generation Sequencing (NGS): Comprehensive genetic analysis of samples to assess biodiversity of bacterial composition in animals on microbiome studies.

A robust health surveillance program is key to successfully maintaining the germ-free health status of your animal colonies. Our laboratory scientists can work with you to develop and implement a germ-free health monitoring program that fits your budget and your specific research needs.

Vivarium Program Design

Clients can leverage Charles River's scientific and engineering expertise to plan and design a vivarium specific for microbiome research. Consultation is available on a number of design aspects including development of mechanical and electrical systems concepts, equipment lifecycle cost analysis, staffing, and options to maximize space. Review of existing program(s) is also available.