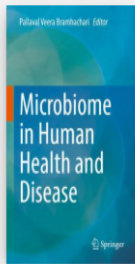


Pallaval Veera Bramhachari *Editor*

# Microbiome in Human Health and Disease

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BOOK

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# Insight into the Animal Models for Microbiome Studies

# 13

Chanda Vikrant Berde, P. Salvi Sagar, V. Kajarekar Kunal, A. Joshi Suyoj, and B. Berde Vikrant

## Abstract

The microbiomes, including bacteria, fungi, and viruses, exist within and on all the organisms, which is the current field of research. Particularly of interest are microbiome of human and its direct impact on human health. The health and fitness of animals, including humans, are influenced by the existence and composition of microbial communities of the host. To date, maximum microbiome research has been focused on the mouse as a model organism for studying the mechanisms of different processes occurring in the microbial communities. Mouse microbiome models have also been the primary choice for performing preclinical tests for studying relationships between the microbiomes and host physiological, metabolic, immune, and neurologic phenotypes. These were also used for developing methodologies to correct functional abnormalities in these communities that lead to disease. The mouse, however, is not a perfect model for studying different aspects of the microbiome and for studying the host stimuli and environmental responses. Hence, researchers have been conducting microbiome studies using other animals as well, for example, zebrafish, pigs, and *Drosophila*. This chapter summarizes the microbiome studies conducted using different models and an insight into its advantages.

## Keywords

Microbiome · Animals · Models · Health · Microflora · Host–microbe interaction

C. Vikrant Berde (✉)

Marine Microbiology, School of Earth, Ocean and Atmospheric Sciences (SEOAS), Goa University, Taleigao Plateau, Goa, India

P. Salvi Sagar · V. Kajarekar Kunal · A. Joshi Suyoj  
Gogate Jogalekar College, Ratnagiri, Maharashtra, India

B. Berde Vikrant  
Department of Zoology, Arts, Commerce and Science College, Lanja, Maharashtra, India

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