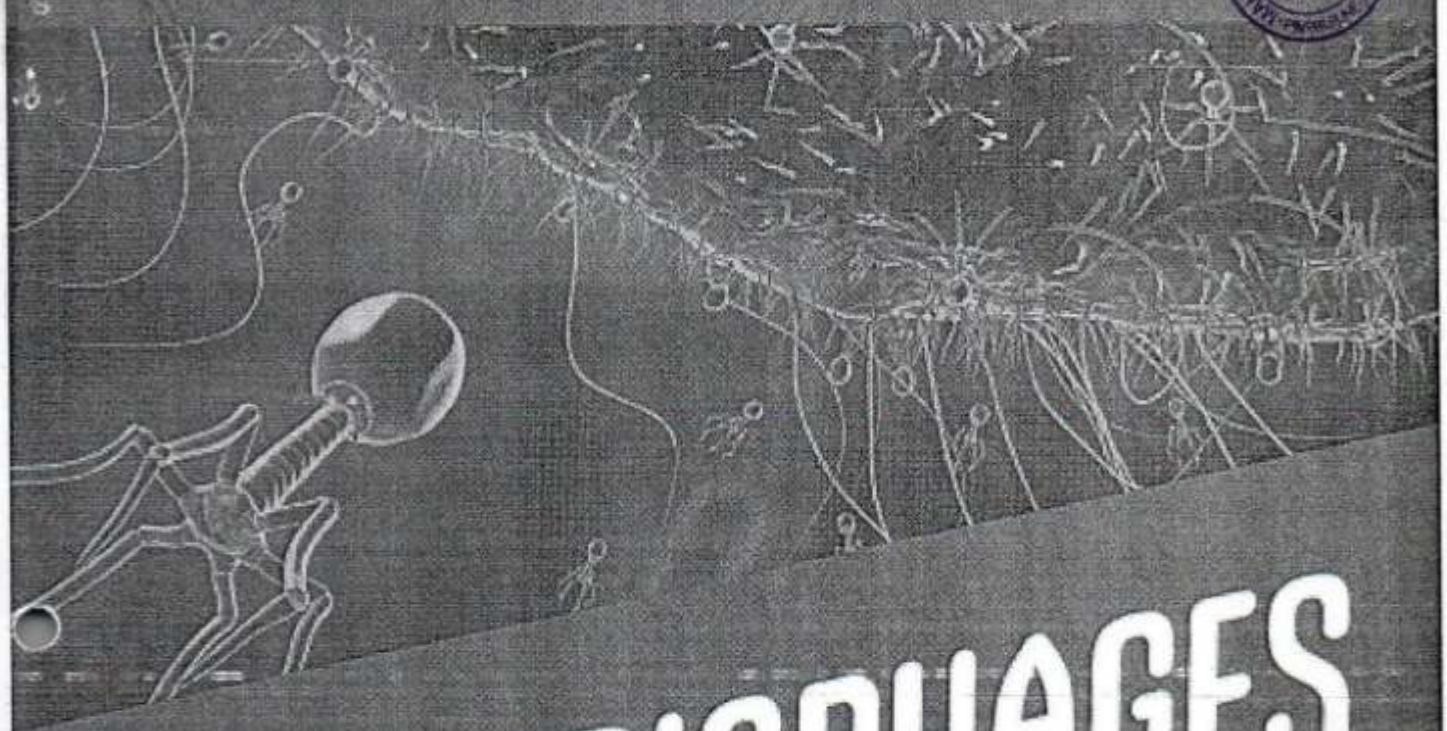
MICROBIOLOGY RESEARCH ADVANCES



BACTERIOPHAGES

Interaction, Diversity and Applications

PRASANTH MANOHAR, PHD
EDITOR

NOVA

Chapter 5

Structural and Morphological Diversity of Bacteriophages

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Abstract

Bacteriophages differ greatly not only in their structure or shapes but also in their dimensions as well as genome type. There exists a great degree of diversity amongst bacteriophages in terms of base sequence and structural proteins, which form the phage particles. Despite great structural and genomic diversity, there exists strong similarities and conservation. Although phages are uniquely related from an evolutionary perspective, they undergo various genetic recombination events which drive their diversification. This chapter deals with the structural and morphological diversity of phages. It also describes the genomic diversity and evolution of phages on earth. It includes the classification of phages as tailed and non-tailed phages as well as filamentous and non-filamentous phages. The current classification is based on various criteria like morphology, physiology and recent parameters in genome sequences. The study of isometric, filamentous and pleomorphic viruses need more detailed investigations than that of tailed species. Unravelling the biology of phages and their relationship with their hosts is key to understanding the microbial systems and their exploitation.

Keywords: Phage classification, phage morphology, *Caudovirales*, isometric phages, pleomorphic phages, filamentous phages

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