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Lytic bacteriophages as specific and selective probe for detection of bacterial pathogens

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Bacteriophages are proven viruses to be valuable tools in the fight of mankind and animals against diseases and infections. Being host-specific these bacterial viruses are species specific, self-perpetuating, self-limiting and eco-friendly in nature targeting only specific bacteria as per their host range. This property of lytic bacteriophages has been explored in detecting the bacterial pathogens in a new technique in microbiological laboratories for confirming the causative agents as specific bacteria and the technique is known as "Phage typing". Phage typing has become a popular tool to differentiate bacterial isolates, hence currently used very widely in epidemiological studies to identify and characterize the outbreak-associated strains of *Salmonella, Campylobacter, Escherichia, Listeria* and many other bacteria based upon receptor specificity. Electron microscopic studies of various lytic phages against bacteria such as Proteus, *Bacillus* and T-4 bacteriophages; sewage coliphages along with morphotyping of bacteriophages of *Lactobacillus helveticus* have been already done. Ten varieties of morphologically different phages have been classified into four different families; namely, *Myoviridae, Styloviridae, Podoviridae* and Microviridae; whereas based on morphology and nucleic acid content additionally *Microviridae, Inoviridae, Siphoviridae* and *Leviviridae* are taken into consideration. Bacterial phage typing is an interesting tool directly based upon whole bacterial cells and hence no much expensive instrumentation or skilled man power is required. Due to its practical benefits, this typing technique has gained the importance and popularity in the science of bacteriology.

Biography

Sharad Kumar Yadav has 28 years of teaching and research experience and has served to various senior positions of the University including Registrar of the DUVASU University. He is currently a Professor, Head of Department of Veterinary Microbiology, and the Director at Cow Research Institute at DUVASU, Mathura India. He has published number of papers in reputed International and National journals and has a vast experience in the arena of BHV-I virus.

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