

# EFFICACY OF BACTERIOPHAGE AGAINST MULTIDRUG RESISTANT *PSEUDOMONAS AERUGINOSA* ISOLATES

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**Abstract.** *Pseudomonas aeruginosa*, an increasingly widespread opportunistic human pathogen, is the most common gram-negative bacterium found in nosocomial infections, the most serious of which include malignant external otitis, endophthalmitis, endocarditis, meningitis, pneumonia, and septicemia. Infections due to *Pseudomonas aeruginosa* are being treated with different antibiotics but its emerging resistance to several antibiotic groups is leading to difficulty in treatment of infected patients. In order to combat infections of antibiotic resistant *P. aeruginosa* bacteriophage therapy is a potential substitute. This study isolated *P. aeruginosa*-lytic bacteriophages from sewage waste water and evaluated their efficacy *in vitro* and *in vivo* against multidrug resistant *P. aeruginosa* isolates from wounds of burn patients attending the Allied Hospital, Faisalabad, Pakistan. *In vivo* efficacy of bacteriophage was determined using rabbit as a wound model. Prevalence of multidrug (MDR) *P. aeruginosa* was 60% and among the 6 MDR isolates 4 could be lysed (clear or turbid plaques) by the isolated bacteriophage samples, which was also effective in attenuating MDR *P. aeruginosa* infected wound healing in rabbit. These results suggest the potential of bacteriophage therapy in the treatment of MDR *P. aeruginosa* infection.

**Keywords:** *Pseudomonas aeruginosa*, bacteriophage, burn wound, rabbit, sewage waste water

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