

## **MICROBIAL GENETICAL STUDIES OF *Pseudomonas aeruginosa* BACTERIA ISOLATED FROM HUMAN.**

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### **ABSTRACT**

*Pseudomonas aeruginosa* bacterial isolates which isolated from human, were used to study some microbial genetical properties. Nutritional requirements were tested, the results showed that all the 17 isolates were prototrophs. Lysogenicity test demonstrated that all 17 isolates were lysogenic with one prophage, since every phage released from a lysogenic isolate was not able to lysis the same host cells. Host range of phage released from a lysogenic isolates was varied, and reached up to 65% ( $\phi$  43). The phage released spontaneously from lysogens has been titered, phage ( $\phi$ 50) resulted in high titration ( $3.56 \times 10^7$  Pfu/ ml). The ability of phage released from lysogen to lysis of the standard strains (PA01, PU21, MAM2) was tested. Phage ( $\phi$ 50) had the ability to make lysis on the three strains.

Sensitivity of the bacterial isolates to some antibiotics (streptomycin, tetracycline, ampicillin, penicillin and chloramphenicol) was tested. Sensitivity was varied, depended on type, concentration of antibiotic and type of isolate. The effect of temperature on efficiency of plating for five phage lysates had been investigated. No plaques have been detected at low temperatures (5 and 15°C) or at high temperature (45°C). Transducing ability of five phage lysates spontaneously released from lysogens was assessed. The  $\phi$ 37 and  $\phi$ 78 were able to transduce successfully the streptomycin, tetracycline, ampicillin and chloramphenicol resistance genes ( $5.0 \times 10^{-6}$ ,  $1.73 \times 10^{-7}$ ,  $1.43 \times 10^{-4}$ ,  $8.8 \times 10^{-3}$  and  $7.2 \times 10^{-5}$ ,  $4.6 \times 10^{-5}$ ,  $1.25 \times 10^{-5}$ ,  $6.2 \times 10^{-3}$  respectively).

The phage induced by ultraviolet irradiation was used in transduction assay. The Pfu/ml was increased. Transduction by lysogenic bacterial isolates was assessed. The results showed that transduction frequency was lower than in transduction by lysate.

**Keywords:** Bacteria, bacteriophage, transduction, titration, antibiotics.