

Detection of diverse virulence factors in phages methicillin resistance *Staphylococcus aureus* (MRSA) isolated from mastitic cows

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Staphylococcus aureus is an opportunistic human and animals' pathogen that is found passively colonizing a large percentage of the population primarily on the skin or mammary glands in cows. As the capacity of a given *S. aureus* strain to cause infection varies among strains and is determined by the presence or absence of a large number of virulence-associated genes, some of which are encoded by phages. In order to determine the abundance and characterize the diversity of *S. aureus* strains which caused mastitis in cows in various provinces in Baghdad city, polymerase chain reaction (PCR) was used to detect the presence of *S. aureus* phage-type specific DNA which carry genes coding for diverse virulence factors such as Panton-Valentine leukocidin (PVL), enterotoxins and exfoliative toxins. *Staphylococcus aureus* used in this study was isolated from mastitic cow milk grew on blood agar and methicillin-resistant *Staphylococcus aureus* (MRSA) were selected as indicator strains to investigate the presence of phage segments. The isolates of wild lytic phages from the transient stocks were propagated with the corresponding host clinical MRSA isolates using the plaque method. Plates were incubated overnight at 37°C and plaque morphology and growth characteristics were recorded. Genomic DNA from isolated *S. aureus* phage was extracted and phage segments were investigated. The results showed that the phage content virulence factors in *S. aureus* isolates were enterotoxin A, enterotoxin P, and exfoliative toxin A, toxic shock syndrome

toxin-1, lipase. But Panton-Valentine leukocidin gene failed to amplify among strains and the diversity of it in Baghdad city is relatively high. The current study concluded that there is role of bacteriophages in changing ecology and virulence of *S. aureus*.

Biography

Atheer is microbiologist work in university of Baghdad, veterinary medical college, department of microbiology since nine years. I got my B.sc. in science college university of Baghdad department of biology in 1984 and work in al Mansur factory as a microbiologist for water treatment, then I got MSc in bacteriology in veterinary college and work head department of bacteriology in Al razee center for research and production diagnostic kits in ministry of industry and minerals, after that I got my PhD in virology from university of Almustanseria department of biology and return to my work, head department of virology, from this time I started to work in research and published my work in many journals. Many research were published in rotavirus, cholera salmonella and meningitides and the last paper was published in phage therapy. Last year, I made another workshop about stem cells and its relation with microbiology in 3/3/2015. Last year I am the adviser of Msc student his work about phage therapy and now I have another one who work in genotyping of rotavirus isolated from human and animal in different area from Iraq.