# International Conference on APPLIED MICROBIOLOGY AND MICROBIAL BIOTECHNOLOGY &

## International Conference on MICROBIOME R&D AND BIOSTIMULANTS &

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#### The efficacy of deferoxamine on killing of Staphylococcus aureus causing septicaemia in mice

**B** ecause of the appearance of multiple drug resistant strains of microorganisms, new drugs to fight microbes are desperately needed. Iron chelation therapy has been considered as a possible treatment of various infectious diseases including malaria. Deferoxamine (DFO) is the most safe and effective iron chelator available today. It was isolated from *Streptomyces pilosus* in the 1960s. Initially, it was developed as an antibacterial agent, later as a delivery vehicle for iron. It is more effective if used with ascorbic acid (vitamin C). The data concluded by us showed that exposure of *Staphylococcus aureus* isolated to deferoxamine led to significant decrease in the production of virulence factors by these isolates except for DNase which showed no difference. The explanation of this can be suggested to be due to inactivation of asonitase that converts citrate to isocitrate via a cis- aconite intermediate. Aconitase might be affect the synthesis of several *S.aureus* virulence factors and the expression of the global gene regulators RNA III and sarA. The data of the present study showed that using of iron chelator deferoxamine lead to decrease in the mortality rate of mice infected with *S.aureus*. Our findings indicated that deferoxamine may enhance the antibacterial activity of polymorphonuclear (PMN) leucocytes by protecting the cells against damage by non-mediated generation of toxic metabolites in resting PMN's. In a murine model of *S.aureus* sepsis, deferoxamine treatment had an additional effect on survival and bacterial eradication from the organs of septicaemic mice.

#### Biography

Mohemid M Al-Jebouri has completed B.S., M.Sc. and Ph.D. degrees in age of 27 years from Mosul and Wales Universities respectively and Postdoctoral studies from Swansea University. He trained in infectious diseases modeling by Harvard University. He is Full Professor leading a research group of clinical microbiology/immunology at Medical College of Tikrit University in Iraq. He published more than 90 papers most of them in reputed journals and serving as an Editorial Board Member of repute.

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