EuroSciCon

EuroSciCon Conference on

Bacteriology and Mycology

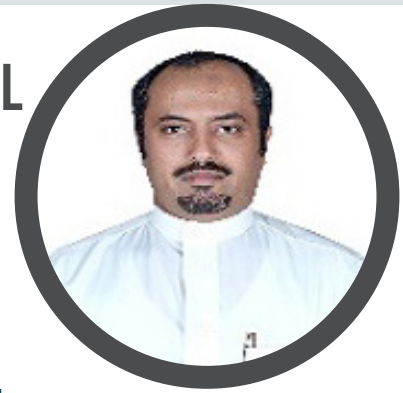
June 18-19, 2018
Paris, France

Hassan A Hemeg, Arch Clin Microbiol 2018, Volume: 9
DOI: 10.4172/1989-8436-C1-004

NANOMATERIALS FOR ALTERNATIVE ANTIBACTERIAL THERAPY

Hassan A Hemeg
Taibah University, Saudi Arabia

Despite an array of cogent antibiotics, bacterial infections, notably those produced by nosocomial pathogens still remain a leading factor of morbidity and mortality around the globe. They target the severely ill, hospitalized and immunocompromised patients with incapacitated immune system, who are prone to infections. The choice for antimicrobial therapy is largely empirical and is not devoid of toxicity, *hyper*sensitivity, teratogenicity and/or mutagenicity. The emergence of multi-drug resistant bacteria further intensifies the clinical predicament as it directly impacts public health due to the diminished potency of current antibiotics. In addition, there is an escalating concern with respect to biofilm-associated infections that are refractory to the presently available antimicrobial armory, leaving almost no therapeutic option. Hence, there is a dire need to develop alternate antibacterial agents. The past decade has witnessed a substantial upsurge in the global use of nanomedicines as innovative tools for combating the high rates of antimicrobial resistance. Antibacterial activity of several metal and metal oxide nanoparticles has been reported. The microbes are eliminated either by microbicidal effects of the nanoparticles such as release of free metal ions culminating in cell membrane damage, DNA interactions, free radical generation, or by the microbistatic effects coupled with killing potentiated by the host's immune system. The diverse annihilative effects of conventional and green nanomaterials on the bacteria are discussed in this review. Combinatorial therapy with metallic nanoparticles as adjunct to the existing antibiotics, may aid to restrain the mounting menace of bacterial resistance and nosocomial threat.



Biography

Hassan A Hemeg is an Associate Professor at Taibah University, Saudi Arabia. He published several papers in Medical Microbiology. He lead several committees in health organizations related to the health care accreditation His new area of research interest is the Nano-Material and the Implementation in the Antimicrobial Therapy.

hasanhemeg@hotmail.com