EuroSciCon

June 18-19, 2018
Paris, France

EuroSciCon Conference on

Bacteriology and Mycology

Ghazy A A et al., Arch Clin Microbiol 2018, Volume: 9
DOI: 10.4172/1989-8436-C1-005

ACINETOBACTER BAUMANNII GHOST AS A CANDIDATE VACCINE

Ghazy A A[4], Sheweita S A[1], Batah A M[2], A A Amara[3] and A Hussein[1]

[1]Institute of Graduate Studies & Research, Alexandria University, Egypt
[2]Tropical Disease Research Center-UST, Yemen
[3]GEBRI-SRTY City, Egypt
[4]Kafrelsheikh University, Egypt

Human infection by *Acinetobacter baumannii* has been increased due to its resistance against to most of the commercial antibiotics. Therefore, the aim of the present study was planned to design a vaccine against A. baumannii infection. In addition to evaluate the immunogenicity and protective efficacy of this vaccine, β-lactamase OXA-51 gene, a predominant gene in all Acinetobacter strains, and a part of this gene (1500 bp) has been detected and sequenced. The DNA sequence of OXA-51 gene showed 98% homology with A. *baumannii* isolate 6077/12 and also showed less homology percentage with other strains of Acinetobacter. Bacteria were evacuated after using different critical concentrations of hydrogen peroxide, sodium hydroxide and sodium carbonate leading to the ghost of *Acinetobacter baumannii* Ali190 with pertaining 3D structure of cell membrane. This ghost was administered to rats via different routes (IM, IP, SC, oral). All routes of ghost administration induced antibodies and showed full protection except oral administration expressed 67% protection in rats challenged with live bacteria. On the other hand, all non-vaccinated rats have died after infection with live bacteria. SDS-gel electrophoresis of the outer cellular membrane proteins of both A. *baumannii* and its ghost showed common protein bands with molecular weights 70, 60, and 23 KDa in both of them. Moreover, after raising the primary antibody against ABG, these bands were detected using Western Immunoblotting. In addition, *Acinetobacter baumannii* ghost (ABG) induced differential leukocyte count, cell viability, slide agglutination, passive hemagglutination, E-rosette test, phagocytosis, and opsono-phagocytosis. The levels of INF-γ were significantly increased in all vaccinated groups, particularly in SC and SCA, in comparison with the control group.

Conclusion: The *antigenic determinants* (protein bands with MW 70, 60 and 23 KDa) of Acinetobacter *baumannii* Ali190 were determined. Moreover, ABG vaccine may be an effective approach for preventing A. *baumannii* infection

Biography

Ghazy A A has completed his PhD from Alexandria University, Egypt and Post-doctoral studies from Alexandria University and Kafrelsheikh University, Egypt. She was Supervisor on more than 20 Master and PhD students. She attended more than 30 workshop and conferences; local and internationally. She has published more than 15 papers in reputed journals and has been serving as a Reviewer in many journals.

ghazy.amany@yahoo.com