OMICSCIOUP <u>C o n f e r e n c e s</u> <u>Accelerating Scientific Discovery</u> 2nd International Conference on **Clinical Microbiology & Microbial Genomics**

September 16-17, 2013 Hampton Inn Tropicana, Las Vegas, NV, USA

Caspase 3/7 activities measurement over a range of CyaA toxins concentrations on different cells

S. A. Khosravani Yasuj University of Medical Sciences, Iran

Introduction: Adenylatecyclase toxin (CyaA) toxin is an important virulence factor of Bordetella pertussis, the causative agent of whooping cough, and a potential component of acellular pertussis vaccine.

Materials and methods: The work involved the production of three purified forms of CyaA with different enzymic and invasive properties. These were: the native enzymatically-active, invasive toxin (CyaA), an invasive derivative lacking AC enzymic activity (CyaA*) and a non-acylated, non-invasive form of CyaA (proCyaA). These were expressed in E. coli BL21/DE3 as recombinant proteins. After purification by a combination of chromatographic methods (Q-and Butyl-Sepharose) their properties were investigated by several assays.

Results: The AC enzymic activity was assayed by a conductimetric method. CyaA and pro-CyaA had a high level of enzymic activity but that of CyaA* was very low. Caspase 3/7 activities were measured over a range of toxin concentrations. At these concentrations, neither urea buffer alone nor CyaA* induced any significant increase in caspase 3/7 from different mammalian cells. The greatest effect of CyaA was observed on J774.2 and RBL-2H3 cells where increasing concentration of toxin gave increasing activity.

Coclusions: regard to the results of this the study showed that both enzymatic and invasive functions are required for the cytotoxic effects of adenylatecyclase toxin.

khosravani2us@yahoo.com