

## 9<sup>th</sup> Global Summit and Expo on **Vaccines & Vaccination**

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### **Proteoliposomes obtained from non-pathogenic mycobacteria as a protective vaccine candidate against tuberculosis infection**

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Despite it has been deciphered, that the causative agent and one vaccine is available for its prevention since early in the past century, Tuberculosis continue being an alarming disease that claim thousands of death each year. The protein and lipid antigens components of *M. tuberculosis* have been motif of interest to create a new vaccine because most of them are responsible for the pathogenicity and virulence of the mycobacteria. We obtained proteoliposomes from non-pathogenic mycobacteria (*M. smegmatis* and *M. bovis* BCG) as novel vaccine candidates taking into account the homology shared between these species and *M. tuberculosis*. Both proteoliposomes showed high cellular and humoral immune response, antigenic properties in human serum and cross-reactivity against *M. tuberculosis* antigens. Even more interesting, these candidates conferred protection when they were administered to Balb/c mice before intratracheal infection with *M. tuberculosis* H37Rv strain, both applied in two doses subcutaneously as when they were administered as a reinforcement of BCG vaccination. The protective capacity was confirmed by reduction of bacterial load and pneumonic area in lung of infected animals, two months after infection. Proteoliposomes from *M. smegmatis* and *M. bovis* BCG are promising candidates to be evaluated in guinea pigs model in order to advance in their evaluation on the route to a new TB vaccine.

#### **Biography**

Nadine Alvarez Cabrera has completed his PhD in 2012 from Havana University and Post-doctoral studies from Havana University. She is a specialist of Molecular Biology of the Research and Development and Vice-President of Finlay Institute since 2003. She has been involved in important research projects related to the development of immunoprophylactic and immunotherapeutic methods against tuberculosis. She has published more than 19 papers in reputed journals and books and has served as referee of repute.

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