

## NANOPARTICLES, AS ANTIGEN DELIVERY SYSTEM OF ANTIGENS, FOR A NASAL VACCINE AGAINST TOXOPLASMOSIS

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**N**anoparticles can act as adjuvant as they are able to deliver antigens to immune cells, therefore increasing their immunogenicity. A better knowledge of the mechanisms of interaction with the biological fluids and cells is necessary to fully understand their potential as delivery systems. Most of pathogens access to human body through mucosal, therefore it is interesting to mimic infection to elicit a protective immunity. In this presentation we will describe the mechanisms of interaction of nanoparticles with airway mucosa cells and their ability to deliver antigens within cells. Furthermore, their interest in term of antigen formulation, stability and efficacy against *Toxoplasma gondii* infection will be presented.

## BIOGRAPHY

Pr Didier Betbeder has 25 years of experience in drug delivery using colloids, ranging from basic research to clinical studies. Working with the World Health Organisation he obtained his PhD in 1988 on drug targeting to treat sleeping sickness, before spending two years as a post-doctoral fellow at the University of Warwick (England). He was then engaged by Bio-Europe, a company specialising in biocatalysis, before joining Biovector Therapeutics (France) as Research director from 1992 – 2001. He is Professor at the University of Artois and Lille 2 since 2001, his research focusing on the development of innovative nanoparticles based on polysaccharide and phospholipid assemblies. He developed from research to clinical development a technology based on polysaccharide nanoparticles supporting a phospholipid bi-layer, these nanoparticles were found to have a strong mucosal residence and good candidates for vaccine applications.

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