

8th International Conference and Exhibition on

Pharmaceutics & Novel Drug Delivery Systems

March 07-09, 2016 Madrid, Spain

Paromomycin liposomes- An alternative strategy for treatment of infectious diseases

Maria Manuela Gaspar

University of Lisbon, Portugal

Infectious diseases constitute an immense global threat, being responsible for 15 million of deaths per year worldwide. Treatment of infectious diseases caused by intracellular microorganisms, such as *M. tuberculosis*, *M. avium*, *Leishmania* and *Plasmodium* spp. are often hampered by limited access of drugs to infected cells. Over the last decades, liposomes, the most studied and successful drug delivery system allowed to improve the the pharmacologic and therapeutic properties of several molecules. One example is the case of aminoglycosides that due to inappropriate biodistribution and/or pharmacokinetic profiles render them not satisfactory for medical use. Paromomycin (PRM) is an aminoglycoside with a broad spectrum *in-vitro* activity against protozoa and mycobacteria. However, it is poorly absorbed into systemic circulation after oral administration and when parenterally injected undergoes rapid clearance being excreted upon glomerular filtration in urine. In the present work, the association of PRM to liposomes resulted in a huge accumulation of the antibiotic in liver, spleen and lungs, relative to free form. The *in-vivo* biodistribution changes of PRM liposomes were translated into an enhanced therapeutic effect in murine models infected with *M. avium* and *Leishmania infantum* with an absence of toxic effects. The obtained results demonstrate the potential of PRM liposomes as an alternative therapeutic strategy for treatment of mycobacterial and parasite infections.

Biography

Maria Manuela Gaspar has completed her PhD in 2005 in Pharmaceutical Technology in the University of Lisbon and Post-doctoral studies in the University of Dublin, Trinity College. She is a Researcher in the Research Institute for Medicines, iMed.Ulisboa, University of Lisbon. The research has been focused on design, development and biological evaluation of drug delivery systems for improving the therapeutic index of incorporated molecules in infectious, inflammatory and cancer animal models. She is co-author of numerous patents, papers in peer-reviewed journals and book chapters.

mgaspar@ff.ulisboa.pt

Notes: