Miguel Gama, J Pharm Drug Deliv Res 2016, 5:3(Suppl)
http://dx.doi.org/10.4172/2325-9604.C1.008

9th World Drug Delivery Summit

June 30-July 02, 2016 New Orleans, USA

Delivery of antimicrobial peptides using hyaluronic acid nanogels: *In vitro* and *In vivo* trials

Miguel Gama
Minho University, Portugal

Tuberculosis (TB), a disease caused by the highly virulent *Mycobacterium tuberculosis*, currently ranks as the second world's deadliest infectious disease, right after HIV/AIDS. The most recent data provided by the World Health Organization reports that around 9 million people were diagnosed with TB in 2013, having 1.1 million of those died from the disease. Additionally, as a result of overuse and misuse of antibiotics, multi-drug resistant TB (MDR-TB) strains are emerging at a rate of about 3.5% over recent years. Treatment for MDR-TB is based on the administration of pyrazinamide together with second-line drugs. In this case, treatment can last up to 24 months. Noteworthy, whereas first-line TB treatment generally costs around $22 per patient, MDR-TB treatment-associated costs can range from $4000 to $9000 per patient. Within the context of the above-mentioned drawbacks associated to current therapies and the emergence of multi-drug resistant strains, a new class of drugs like antimicrobial peptides (AMPs) arises as promising candidates for treatment of infectious diseases and TB in particular, either for administration as a monotherapy or combined with other drugs. In this work, the encapsulation of a peptide derived from the human cathelicidin LL37 in a hyaluronic acid nanogel and its use for the treatment of mycobacteriosis will be reported. Insight on mechanistic aspects of the action of the AMP, including the internalization pathways and intracellular fate/stability of the peptide, as well as the assessment of its therapeutic potential, including data on the treatment of *M. avium* and *M. tuberculosis* infected mice will be described.

Biography

Miguel Gama is currently working as an Associate Professor with Habilitation at Minho University in Portugal. He has published more than 120 papers in international journals, edited 4 books and is the Co-Founder of a spinoff, BC Technologies, in 2013. His main interests are related to the development of drug delivery systems using natural biomaterials, in particular polysaccharides and the development of bacterial cellulose technologies in different fields of activity, including the biomedical, food products and electronic devices.

fmgama@deb.uminho.pt

Notes: