Poster

Use of antimicrobial peptides and its nanogel formulations in the treatment of *leishmaniasis*

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Abstract

Parasites of the genus *Leishmania* are the causative agents of leishmaniasis, a neglected tropical disease endemic in many developing countries as well as in the Mediterranean area. Current treatments are inefficient, associated with high toxicity, severe side effects and most importantly, the high costs associated to the treatment are far from suitable for developing countries. In this sense, there is an urgent need to find new drugs and a new drug delivery system to treat *leishmaniasis*. Several studies have shown that antimicrobial peptides (AMPs), components of our immune system, are able to help the organism resist to the invasion of some pathogens, including *Leishmania*, by having a direct antimicrobial function as well as a capacity for immunomodulation. Their specificity to microorganisms and the low probability to develop resistance, make them very good candidates for the development of a new drug formulation. Our proposal during this project is to increase the solubility and bioavailability of selected AMPs, described in the literature as having an active effect against *Leishmania*. We showed that hyaluronic acid (HA) derivative nanogel has an ability to entrap hydrophobic peptides. HA is naturally present in vertebrate organisms and its viscoelastic properties, biodegradability, biocompatibility and absence of immunogenicity, make it suitable for pharmaceutical and medical applications.