

Evaluation of Immunostimulant Potential of Proteoliposomes Derived from *Vibrio anguillarum* Administered by Immersion in Zebrafish (*Danio rerio*)

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Abstract : Disease prevention through the use of vaccines has been crucial to achieve the current level of production in the salmon industry. However, vaccines have been developed based largely on inactivated bacterial formulations, using the whole pathogen. These formulations have demonstrated excellent efficacy against extracellular bacterial pathogens. However diseases with the greatest economic impacts correspond to intracellular bacterial and viral pathogens, vaccines based on these types of agents have shown a discrete effectiveness. It is for these reasons that the development of subunit vaccines based on defined antigens offers a promising solution. The main problem is that subunit vaccines offer a low immunogenicity, since they lack immunostimulatory elements, so that the development of new adjuvants platforms becomes an important challenge for this type of formulations. We evaluate the effect of a formulation based on proteoliposomes of *Vibrio anguillarum* administered by immersion as a new adjuvant strategy, allowing efficient stimulation of the innate immune system. Proteoliposomes physicochemical properties were evaluated in its ability to produce an inflammatory process. Using zebrafish (*Danio rerio*) larvae as a model species and the transgenic line (Tg(mpx: GFP)i114) allowed us to track the neutrophil migration in real time. Additionally we evaluated the gene expression of some molecular markers involved in the development of the innate immune response characterizing the adjuvant capacity of the formulation.

Keywords : adjuvants, vaccine development, zebrafish, innate immunity

Conference Title : ICAVM 2015 : International Conference on Animal and Veterinary Medicine

Conference Location : Osaka, Japan

Conference Dates : October 08-09, 2015