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Immunogenic effect in CD1 mice upon phosphate addition to *Chlamydia trachomatis* serovar E rMOMP compositions adjuvanted with a TLR4 agonist and ALOOH carrier system

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Genital infection with *Chlamydia trachomatis* is the most prevalent sexually transmitted disease. Effective vaccination against this common disease will limit the transmission and morbidity associated with it. The objective of the study was to assess the immunogenic effect of rMOMP adsorption and binding strength to an adjuvant comprising the TLR4 agonist E6020 and ALOOH, in CD1 mice.

Compositions of Ser E rMOMP and adjuvant were formulated with varying concentrations of phosphate or without phosphate, and administered to CD1 mice three times intramuscularly. The addition of phosphate reduced the % and strength of adsorption of rMOMP to the adjuvant. In the composition formulated without phosphate, 100 % of antigen was adsorbed with high binding strength, whereas in compositions with phosphate, the % and strength of antigen adsorption decreased with increasing concentrations of phosphate. Each composition was immunogenic in CD1 mice. The composition formulated without phosphate stimulated specific total IgG production with balanced IgG1/IgG2a subclasses. In contrast, rMOMP formulated with phosphate induced significantly higher levels of total IgG of predominantly IgG1 subclass, accompanied by high *in vitro* neutralizing responses. All compositions with the exception of the one with the highest concentration of phosphate elicited a Th1/Th17-like immune response with high IFN- γ and IL-17 production and low IL-13. The composition formulated with the highest concentration of phosphate induced significantly lower IFN- γ and IL-17 production.

Here we described an effective method to modulate the immunogenicity of the ALOOH/E6020 adjuvanted vaccine candidate.

Biography

Lucian Visan has completed his Ph.D in immunology at Würzburg University, Germany and moved to Mount Sinai Hospital, University of Toronto for postdoctoral studies. He is now a researcher at Sanofi Pasteur where he leads an immune-bacteriology research unit working on vaccine projects. He has over 10 years of experience in therapeutic and prophylactic vaccines ranging from cancer to infectious diseases.

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