Improvement of RG1-VLP vaccine performance in BALB/c mice by substitution of alhydrogel with the next generation polyphosphazene adjuvant PCEP.

Current human papillomavirus (HPV) vaccines provide substantial protection against the most common HPV types responsible for cervical cancer, genital warts, and other HPV-related diseases. However, there is a need for improved vaccine formulations that can provide better protection against diverse HPV types and enhance the longevity of immunity. This study aimed to evaluate the efficacy and safety of a novel adjuvant system, PCEP, in comparison with the current standard of care, alhydrogel, in promoting a stronger immune response to a HPV VLP vaccine.

The vaccine was administered to BALB/c mice, and the immune response was quantified by measuring the levels of neutralizing antibodies against HPV types 16 and 18. The results showed a significant increase in antibody titers in mice vaccinated with PCEP-adjuvanted vaccine compared to those vaccinated with the alhydrogel-adjuvanted vaccine. Moreover, the immune response was maintained over a longer period, indicating the potential of PCEP as a more effective adjuvant system.

In conclusion, the use of PCEP as an adjuvant in HPV VLP vaccines could lead to improved vaccine performance, with implications for disease prevention and management.