

## **CAF01 adjuvant increases the protection conferred by a commercially available influenza split vaccine in a ferret model**

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The immunogenicity and protective efficacy of current preventive vaccines against influenza are considered suboptimal and the development of novel effective influenza vaccination strategies is urgently needed. Commercially available trivalent split vaccines are known to elicit mainly a humoral immune response, whereas the induction of cell-mediated immune responses is negligible. Recently, a cationic liposomal adjuvant (dimethyldioctadecylammonium/trehalose 6,6'-dibehenate, CAF01) was developed, which was proven to enhance both humoral and cell-mediated immune responses of a number of different experimental vaccine candidates. In the current study, we compared the immune response in ferrets vaccinated with a commercially available influenza split vaccine with the same vaccine mixed with the CAF01 adjuvant and furthermore used two recently circulating H1N1 viruses for the challenge of the animals. CAF01 improved the immunogenicity of the vaccine, increasing the influenza-specific IgA and IgG levels as well as triggering cellular-mediated immunity, measured as interferon-gamma production of lymphocytes by flow cytometry. The adjuvant also enhanced the protection conferred by the vaccine, reducing the viral load measured in nasal washes by RT-PCR. These protection data obtained in the human relevant challenge model support the potential of CAF01 in future influenza vaccines.