

Development of a DNA vaccine against chicken anemia virus by using a bicistronic vector expressing VP1 and VP2 proteins of CAV.

ABSTRACT

In the present study, we describe the development of a DNA vaccine against chicken anemia virus. The VP1 and VP2 genes of CAV were amplified and cloned into pBudCE4.1 to construct two DNA vaccines, namely, pBudVP1 and pBudVP2-VP1. In vitro and in vivo studies showed that co-expression of VP1 with VP2 are required to induce significant levels of antibody against CAV. Subsequently, the vaccines were tested in 2-week-old SPF chickens. Chickens immunized with the DNA-plasmid pBudVP2-VP1 showed positive neutralizing antibody titer against CAV. Furthermore, VP1-specific proliferation induction of splenocytes and also high serum levels of Th1 cytokines, IL-2 and IFN- γ were detected in the pBudVP2-VP1-vaccinated chickens. These results suggest that the recombinant DNA plasmid co-expressing VP1 and VP2 can be used as a potential DNA vaccine against CAV.

Keyword: Chicken anemia virus; DNA vaccine; VP1; VP2.