YURVAC® RHD vaccine against RHDV and RHDV2

Perozo E.[1], Fontseca M.[1], Acal L. [1], Gascon S.[1], March R.[1],Sitjà M.[1]
[1]HIPRA, Amer, Spain

Introduction

Vaccination against Rabbit Haemorrhagic Disease (RHD) is the principal measure for protection against this disease. For this reason, YURVAC® RHD vaccine has been developed and several studies have been performed in order to define the onset of immunity and the duration of immunity of the vaccine against RHDV and RHDV2.

In all the efficacy studies, one group of rabbits were vaccinated subcutaneously at 30 days of age and another group of rabbits were administered with PBS and was kept as control (non-vaccinated).

Animals were challenged against RHDV or RHDV2 at either 7 days, 14 days or one year after vaccination depending on the objective of each study.

After challenge, it was confirmed a duration of immunity of 1 year for RHDV, RHDV2 and highly virulent strains of RHDV2. The onset of immunity was established as 7 days for RHDV2 and highly virulent strains of RHDV2, and 14 days for RHDV.

Objectives

The aim of these studies was to demonstrate the efficacy of YURVAC® RHD against RHD and confirm the onset and duration of immunity for RHDV, RHDV2 including highly virulent strains.

The design of the study was based on the current edition of the Ph. Eur. monograph no. 5.2.71. In the case of the RHDV studies, the requirements established in the specific monograph 2325 “Rabbit Haemorrhagic Disease Virus (Inactivated)” were followed.

Materials and Methods

YURVAC® RHD is a new recombinant vaccine intended for active immunisation of rabbits from 30 days of age onwards to reduce mortality caused by RHDV and RHDV2, including highly virulent strains. The active substance consists of a recombinant RHD virus capsid protein, corresponding to the VP60. The antigen was obtained by means of recombinant DNA technology (yeast host-vector system). All the studies followed the same structure: one group of animals vaccinated with YURVAC® RHD and a control group administered with PBS. In order to demonstrate both the onset and duration of immunity against each of the strains, all animals were challenged at either 7, 14 or 365 days after vaccination. In all cases, the animals were seronegative at vaccination. Serological response was evaluated by hemagglutination inhibition technique for the detection of antibodies against RHDV2.

Results

A duration of immunity of 1 year was confirmed for RHDV, RHDV2 and highly virulent strains of RHDV2. The onset of immunity was established as 7 days for RHDV2 and highly virulent strains of RHDV2, and 14 days for RHDV (Figure 1, Figure 2 and Figure 3).

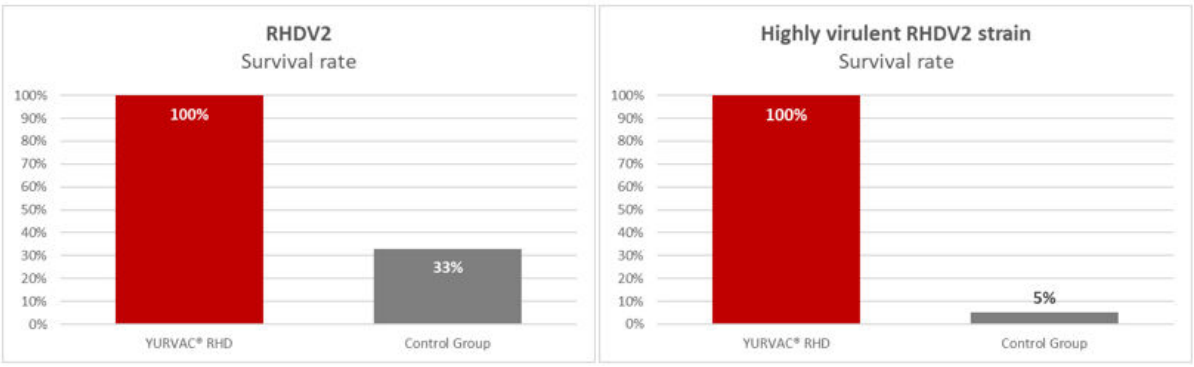

Figure 1. Survival rate after RHDV2 challenge one-week post-vaccination.

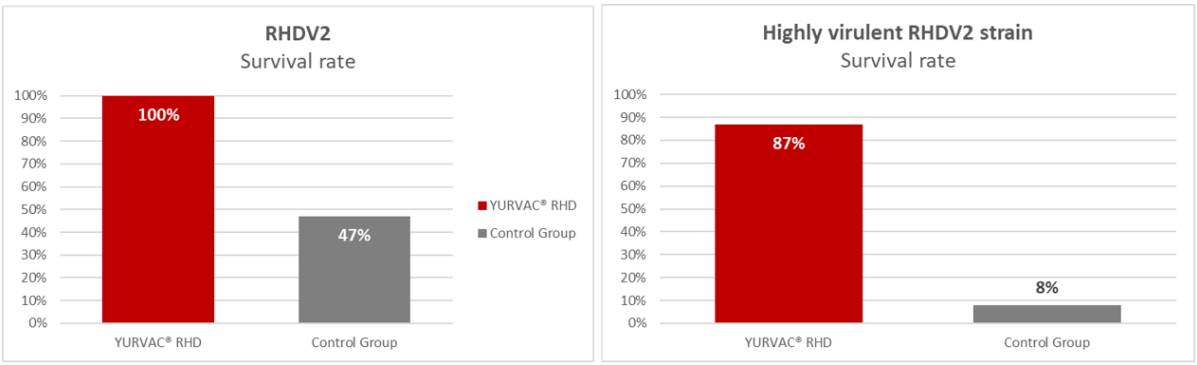

Figure 2. Survival rate after RHDV2 challenge one-year post-vaccination.

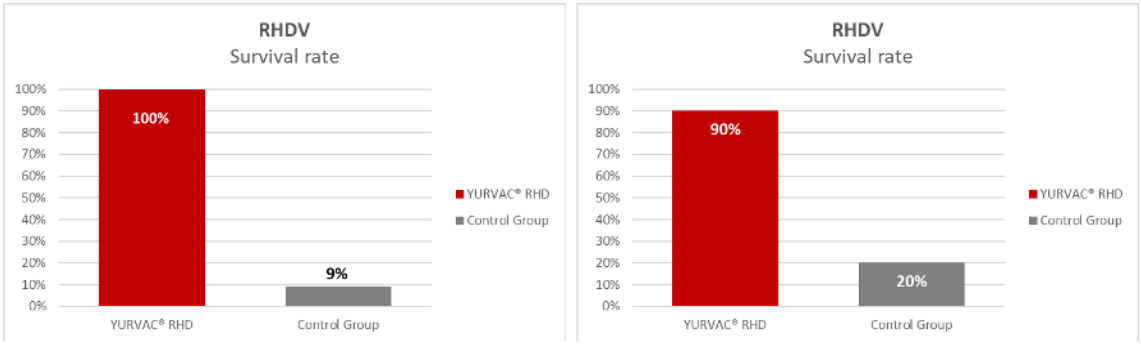

Figure 3. Survival rate after RHDV challenge two-weeks post-vaccination and one-year post-vaccination.

Conclusion

The results confirmed the efficacy of YURVAC® RHD against the classical RHD strain (RHDV), the variant RHD strain (RHDV2) and the highly virulent strains of RHDV2.

References

1. European Pharmacopoeia. Section 5.2.7 “Evaluation of efficacy of veterinary vaccines and immunosera”.