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FIRST ORAL IMMUNIZATION OF WILD BOAR AGAINST AFRICAN SWINE FEVER VIRUS

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Abstract: African swine fever (ASF) is currently the most significant threat for the European swine industry. Since 2014, ASF has reached to Estonia, Latvia, Lithuania, Poland, Romania, Moldova, Czech Republic and Hungary. The main reasons for this fast spread are related to the high abundance of wild boar (*Sus scrofa*) through Europe, the free and continuous movement of infected-wild boar populations among countries and the lack of vaccines to prevent ASF infection. The main objective of this study is to determine (i) the immunization capacity of an attenuated ASF virus (ASFV) genotype II non-haemadsorbing (non-HAD) isolated in Latvia during 2017 (LV17/WB/RIE1) in wild boar by oral administration, and (ii) its protection against a highly virulent challenge strain. To carry out this objective, we immunized a group of twelve wild boar by oral route with 10^4 $TCDI_{50}$ LV17/WB/RIE1. To evaluate the potential transmission of this attenuated vaccine candidate, three animals were directly exposed by contact. Regarding clinical course, we didn´t find any lesions or skin reaction associated to this attenuated vaccine candidate. Four animals vaccinated and two animals in contact showed mild fever (40-40.8°C), which coincided with the peaks of viremia. Short viremia (4 days) was detected in two vaccinated animals after 21 days post-vaccination (dpv), while two animals in contact showed viremia at 10 days post-contact (dpc). Antibody responses were detected by ELISA test in 66.67% of the vaccinated animals and in 100% of the animals in contact at 15.6 ± 4.2 dpv/dpc. Complementary antibody detection by IPT is ongoing. All animals with detectable viremia developed immune response. Challenge was performed by direct contact with a group of four wild boar inoculated by intramuscular route with 10 TCDI50 of Armenia/07 virus, a highly virulent strain. All vaccinated animals (direct and indirect immunized) plus two more wild boar (used as control challenge) were exposed to this virulent strain since 33 dpv. The results of the challenge infection are in process (40 dpv and 7 days post-challenge) and will be finished before the presentation of this study in the congress. This candidate vaccine is capable of inducing an immune response in wild boar by oral administration. Currently, there is no effective vaccine against ASF tested in wild boar and this experiment represents a considerable progress for the control of the infection in the wild cycle.