

## P2 10: Vaccination of goats with PPR-VAC confers a full protection against a PPR virulent challenge

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**Introduction:** Peste des petits ruminants (PPR) is a OIE-listed disease of sheep and goats, caused by PPRV, a Morbillivirus, from the *Paramyxoviridae* family. The disease, initially reported only in West Africa has now spread and is currently endemic in most of Africa (including the Maghreb), the Middle East, South Asia and China. Because of its high economic impact, PPR is considered one of the major livestock diseases. PPRV is mainly excreted through oculo-nasal discharge and spreads by contact between animals. Typical signs are fever, oculo-nasal discharge, diarrhea and dyspnea, associated with necrosis of the digestive and respiratory tracts. Morbidity and mortality rates reach up to 100% and 90% respectively. Goats are usually more susceptible than sheep.

**Material and Methods:** Twenty PPRV naïve goats were randomly allocated to 2 groups, balanced on weights. One group served as controls whereas the other vaccinated with a single dose of PPR-VAC (BVI, Gaborone, Botswana\*). Twenty one days later, the 20 goats were infected intranasally with a virulent PPRV strain (Morocco 2008). Monitoring of clinical signs, weight, viral excretion (real-time RT-PCR [1]) and serological response (competitive ELISA) were performed throughout the 14 days post challenge (dpc).

**Results:** Control goats presented typical and severe clinical signs of PPR: fever, anorexia, nasal and ocular discharge, nasal mucosa lesions, diarrhea and weight loss. The intensity of clinical signs was maximal at 11 dpc. At that time, 4 control goats were euthanized on ethical ground. All control goats excreted high titres of PPRV genome after challenge. Conversely, very few and mild clinical signs were observed in the vaccinated goats and they did not lose weight. Moreover, the vaccine completely prevented viral excretion in all vaccinates.

**Conclusions:** These results confirm the suitability of our challenge model for the clinical and virological assessment of PPRV infection.

Further, these results demonstrate that vaccination with PPR-VAC® fully protects against clinical signs and weight loss (clinical protection), and completely prevents viral excretion (epidemiological control).

### References

[1] O. Kwiatek, *et al.* Journal of Virological Methods **165** (2010) 168–177.

\*: PPR-VAC is manufactured by the Botswana Vaccine Institute in cooperation with Merial. Merial is now a part of Boehringer Ingelheim.