

# ARE DROMEDARIES A POSSIBLE HOST OF PESTE DES PETITS RUMINANTS VIRUS (PPRV)

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The recent spread of the Peste des petits ruminants virus (PPRV) to northern Algeria and Morocco approaching Gibraltar, together with continuous and increased circulation of PPRV in other parts of Africa and Asia have increased the chances of the virus entering Europe, particularly through Spain, Italy, Portugal and France. PPR is a highly contagious viral disease of small ruminants, caused by a morbillivirus with severe morbidity and mortality. Each year it affects 30 million animals and causes an estimated animal loss of between 1.2 and 1.7 billion US (Baazizi *et al*, 2017). The World Organisation for Animal Health (OIE) and the Food and Agricultural Organisation of the United Nation (FAO) have set a target to eradicate PPR from the globe by 2030 (Anonymous, 2017). PPR pathogenesis in goats that are highly susceptible to PPRV infection has been thoroughly investigated over the last decades, but whether dromedaries sharing often the same premises with goats contribute to the PPRV spread is scarcely understood.

This was the reason, why researchers from the Central Veterinary Research Laboratory (CVRL) in Dubai conducted an infection trial with the pathogenic strain Kurdistan/2011.

## Material and Methods

Six dromedaries of different gender and age were intranasally infected (Fig 1) with the goat PPRV Kurdistan/2011.

For virus isolation we used 2 permanent cell lines which were Verodog SLAM tag and CHS-20.

Two days after infection (dpi), 2 dromedaries and 2 goats were housed together with the nasally infected 6 dromedaries to study the PPRV transmission. Serum, whole blood, oronasal, conjunctival and faecal swabs were collected in regular intervals and analysed for PPRV, PPRV-RNA and antibodies.

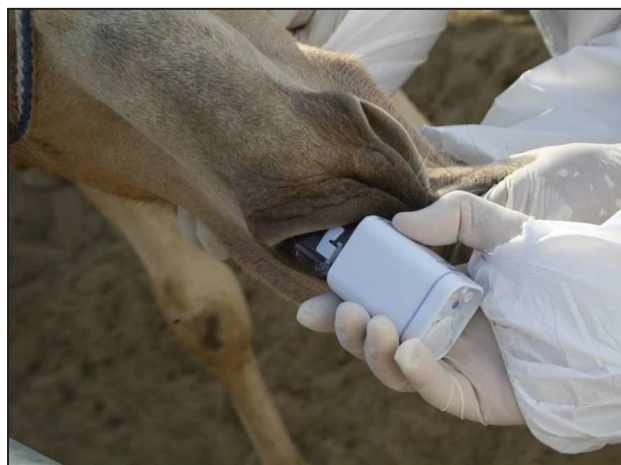
## Results

Experimentally infected dromedaries did not exhibit any obvious clinical signs and no increase of rectal temperature was observed. PPRV-RNA was detected in one of the 6 infected dromedaries, but none of the contact goats and dromedary were infected with PPRV. Also no virus was re-isolated from none of the swabs taken.

Sero conversion was formed in 4 of the 6 dromedaries for a short period of time.

## Discussion

For Old World camelids, PPR has recently been considered a novel disease, while the susceptibility of South American camelids has never been investigated so far. A comprehensive summary of the present situation of PPR in camelids is given by Wernery *et al* (2014). The results of our transmission experiment indicate that dromedaries are most likely dead-end hosts for PPRV. A similar observation was found by Schulz *et al* (2016 a and b) for South American camelids. Therefore, camelids (OWCs and NWCs) probably do not play a role in the spread of PPRV and do not have to be vaccinated.



**Fig 1.** Intranasal spray infection of dromedary with PPRV.

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Recently, reports have emerged from Saudi Arabia by Abd El-Hakim (2006) and Sudan by Khalafalla *et al* (2010) who reported outbreaks of PPR in dromedaries. This is in contrary to our findings.

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