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Thoroughbred mares as reservoir hosts of *Leptospira*.

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Introduction: Equine leptospirosis can result in abortion, stillbirth, neonatal death, placentitis and uveitis. Horses may also act as asymptomatic reservoir hosts of infection (1). In this study, PCR and culture were used to assess urinary shedding of pathogenic *Leptospira* from asymptomatic mares.

Methods: Serum and urine from thirty-seven asymptomatic mares on a single farm were tested by the microscopic agglutination test (MAT) and PCR, respectively. A second urine sample was collected from mares that were PCR positive on previous test for repeat PCR and culture. A positive culture was genotyped by whole genome sequencing and serotyped with reference antisera.

Results: Of 37 equine sera tested by MAT, 35/37 (94.6%) were seropositive (titer $\geq 1:100$). The most frequent highest-reacting titer was with serogroup Australis (28.6%), followed by Pomona (20%), Djasiman (8.6%), Grippotyphosa (5.7%) and Icterohaemorrhagiae (2.8%). Three urine samples, designated H2, H8 and H9, were positive by PCR for lipL32. Of these, two (H8 and H9) were PCR positive for lipL32 in a repeat sample, and one (H9) was culture positive. The recovered isolate was genotyped as *L. kirschneri*. Serotyping identified the isolate as belonging to serogroup Australis. The recovered isolate is therefore classified as *L. kirschneri* serogroup Australis strain H9. All equine sera were seronegative when tested by the MAT using the autochthonous strain H9.

Conclusions: In this study, urinary shedding of pathogenic *Leptospira* in asymptomatic mares was demonstrated by PCR and culture. An isolate excreted in urine from an asymptomatic mare was typed as *L. kirschneri* serogroup Australis, indicating horses can act as reservoir hosts of leptospires. *L. kirschneri* serogroup Australis was also isolated from acute case in human from Africa. Leptospirosis reproductive problems are associated with subfertility, estrus repetition, and, less commonly, late-term abortions. A primary agent of subclinical equine leptospirosis is hypothesized to be serogroup Australis as its role is increasingly recognized in the etiology of infection with a worldwide distribution (1). Whether this is the case for strain H9 remains to be determined but our findings justify additional studies to identify species and serovars of *Leptospira* associated with subclinical carriage, whether in urine samples or samples such as uterine swabs from the genital tract.