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DETECTION OF *Streptococcus equi* DNA IN *Rhipicephalus bursa* TICKS FROM SOUTHERN ITALY

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Ticks are obligated ecto-parasites of wild and domestic animals and occasionally humans. They have veterinary interest because vectors of different viruses, bacteria and protozoa. Among the most common species in Italy and Europe there are *Ixodes ricinus* and *Rhipicephalus* spp. The tick-borne diseases epidemiologically relevant in our country are: Lyme disease, rickettsiosis, relapsing fever, tularemia, meningoencephalitis and ehrlichiosis.

Recently, the extensive characterization of the tick-associated microbiome faces the possible role of ticks in the transmission of additional pathogens, which are known to be transmitted by other arthropod vectors. Through the Denaturing Gradient Gel Electrophoresis (DGGE), we analysed the bacterial community of seven ticks belonging to three species from different areas of Italy: no. 2 *Rhipicephalus sanguineus* (Lombardia), no. 2 *Rhipicephalus bursa* (Campania) and no. 3 *Ixodes ricinus* (Marche). The samples were analysed selecting the highly variable V3 region of the bacterial 16S rRNA gene as target. The dominant DGGE bands were purified and sequenced allowing the identification of the bacteria present in each samples.

Burkholderia sp., *Coxiella*-like endosymbiont, unc. *Clostridium*, *Rickettsia peacockii*, unc. *Staphylococcus* and *Xanthomonas* sp. were detected, as already described in ticks. Moreover, *Streptococcus equi* subsp. *zooepidemicus/ruminatorum* was identified in *R. bursa* collected from buffalos living in rural areas of Southern Italy (the high genetic identity does not allow the distinction of these subspecies, that is usually achieved by biochemical tests on cultured bacteria). The DGGE outcome was confirmed by multiplex-PCR in other *R. bursa* samples collected from buffalos, ponies and goats from the same area. In particular, no. 6 positive samples over no. 15 analyzed were detected (no. 2 from buffalos and no. 4 from ponies).

S. equi is a complex-species including *S. e. equi*, *S. e. zooepidemicus* and *S. e. ruminatorum*: *S. e. equi* is the ethological agent of strangles, a highly contagious and serious infection of horses, whereas *S. e. zooepidemicus* and *S. e. ruminatorum* can cause several infections in both animals and humans. All these pathogens are known to be transmitted through direct contact.

The DNA detection of *S. e. zooepidemicus/ruminatorum* in *R. bursa* is particularly interesting since to our knowledge this pathogen was not previously detected in any tick species. Thus, in-depth studies are worthy to assess an effective competence of ticks as vectors of *S. equi* subspecies, since if a potential role of *R. bursa* in their transmission will be confirmed, new perspectives in the control of these zoonoses will be opened.

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