

## Host genotype: a new target for control of *Staphylococcus pseudintermedius* skin infections in dogs?

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**Background and aim.** *Staphylococcus pseudintermedius* is part of the bacterial skin flora in healthy dogs, and also the most common cause of canine bacterial skin infections. Antibiotics are widely used to treat these infections, but in recent years treatment has been compromised by the emergence of multi-drug resistant isolates such as methicillin-resistant *S. pseudintermedius* (MRSP). The primary aim of this study was to identify host DNA markers responsible for *S. pseudintermedius* carriage and infection. Such markers could potentially be used to select dog lineages resistant or less susceptible to *S. pseudintermedius* colonization and ultimately MRSP colonization and infection. A secondary aim was to determine associations between *S. pseudintermedius* carrier status and the occurrence of skin infection.

**Animals.** 63 Labrador dogs living in Sweden (n=31) and Denmark (n=32). Dogs had previously been DNA typed as part of another project ([www.eurolupa.eu](http://www.eurolupa.eu)).

**Method.** Typical *Staphylococcus* carrier sites (perineum and gingiva) were screened by culture and PCR for presence of *S. pseudintermedius* on three occasions within two months. Depending on the frequency of *S. pseudintermedius* isolation, dogs were categorized as (i) non-carriers, (ii) intermittent carriers, or (iii) permanent carriers. Genotypic (DNA) data from dogs and presence of clinical signs associated with skin disease were analyzed for all participating dogs to search for any relation to *S. pseudintermedius* carrier status.

**Results and conclusion.** 52%, 32%, and 16% of dogs were permanent, intermittent, and non-carriers of *S. pseudintermedius*, respectively. Genotypic data on the included dogs were not correlated to their carrier status. Female dogs were significantly ( $p=0.03$ ) more likely to be permanent carriers than male dogs, but there was no statistical association between clinical signs of skin disease and carrier status. The inconclusive results of the study are likely influenced by a relatively low sample size and the difficulties in making a firm definition of *S. pseudintermedius* carrier status in dogs.