

## **Genotypic and phenotypic characterisation of Methicillin-Resistant *Staphylococcus intermedius* and *pseudintermedius* (MRSI and MRSP) isolated from dogs and cats in Japan**

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*Staphylococcus (S.) intermedius* and *pseudintermedius* are two species responsible for skin infections in dogs and cats. Both species can rarely cause infections in humans, usually following infected animal contacts. Recently, Methicillin-Resistant *S. intermedius* (MRSI) and *S. pseudintermedius* (MRSP) have emerged as significant nosocomial pathogens in companion animals. Their rising incidence makes them an alarming problem since there is the limited therapeutic option for animals, or even for human. The aim of this study is to investigate MRSI and MRSP presence in *S. intermedius* and *S. pseudintermedius* and to compare their genotypes and phenotypes characteristics.

Two hundreds *S. intermedius* and *pseudintermedius* isolated in Japan from cats and dogs were tested for methicillin resistance. Positive isolates were characterised for virulence genes, biofilm formation and antibiotics resistance. Besides, the strains were typed by SCC*mec*-typing, *spa*-typing, PFGE and MLST.

Out of the 200 tested strains, 27 were methicillin-resistant. PFGE results showed that most positive strains are not closely related. However they are shared between 4 main groups according to MLST and SCC*mec*-typing. Most strains showed strong biofilm formation. Finally, MRSI and MRSP were resistant to nearly 80% of the antibiotics. Virulotyping and *spa*-typing are currently on-going.

In conclusion, results obtained showed that MRSI and MRSP are present in the studied animals and don't seem to form a homogeneous group. Phenotypic features as strong biofilm formation and high antibiotics resistance probably help bacteria to infect and persist in animals and veterinary hospital. Moreover, such strains could represent a risk for pets owners and veterinarians.