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BOOK OF ABSTRACTS

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P4.49 - PLASMID PROFILING OF *STAPHYLOCOCCUS PSEUDINTERMEDIUS* ASSOCIATED WITH SKIN AND SOFT TISSUE INFECTIONS IN COMPANION ANIMALS

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ABSTRACT

The increasing antimicrobial resistance (AMR) of staphylococci causing skin and soft-tissue infections (SSTIs) in companion animals is a public health concern. In this study, we analyzed the plasmid content and the associated antimicrobial resistance profiles in relevant clonal lineages of *S. pseudintermedius* causing SSTIs in companion animals.

The study focused on 41 *S. pseudintermedius*, representing predominant and emerging clonal lineages associated with SSTIs in dogs and cats collected in Lisbon (Portugal), previously characterized regarding antimicrobial resistance and clonality[1]. Plasmid DNA was extracted, digested with XbaI restriction enzyme and restriction patterns analyzed in agarose gel electrophoresis. Plasmids were classified according to their predicted molecular weight as low (≤ 3 kb), medium (3 - 10kb), or high-molecular weight (≥ 23 kb) plasmids. Each unique restriction pattern was assigned to a plasmid profile. A subset of 15 strains was further analyzed by hybrid WGS (MinION, Illumina).

Twenty-five out of the 41 (61%) representative *S. pseudintermedius* isolates carried one or more plasmids, most of medium or high molecular weight, that corresponded to eleven plasmid profiles. Strains from relevant MLST sequence-types (ST) carried plasmids, namely ST71 (17/24), ST241 (3/3), ST157 (1/4), ST118, ST258, ST265 and ST551 (each 1/1). No plasmids were detected among ST45 strains (3/3). Ongoing WGS data analyses will allow deeper insight into S. *pseudintermedius* genomes and to establish relations between antimicrobial resistance phenotypes and the mobilome.

The rapid transfer of mobile genetic elements such as the plasmids studied here could boost the increasing AMR in *S. pseudintermedius* and other related species, such as *S. aureus*.

References:

1. Morais C, *et al*. (2023). *Front.Microbiol.*14:1167834. doi:10.3389/fmicb.2023.1167834

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