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NASAL COLONIZATION OF METHICILLIN RESISTANT STAPHYLOCOCCUS AUREUS IN ARGENTINIAN FATTENING PIGS

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Introduction: Methicillin-resistant *Staphylococcus aureus* (MRSA) is a human pathogen responsible for nosocomial and community-associated infections. Livestock-associated methicillin-resistant *S. aureus* (LA-MRSA) have been widely reported as nasal colonizers of pigs in many geographical areas. In a previous longitudinal study done in pigs from Argentina in 2011, methicillin resistance was detected only in coagulase negative *Staphylococcus*. We aim to evaluate the MRSA nasal colonization in pigs from Argentina.

Materials and Method: 42 nasal swabs from swine aged 25, 77, 100, 110 and 154 days were screened for MRSA, from two Buenos Aires Province farms between June and July 2019. A nasal swab from both nostrils of each animal was inoculated into an enrichment tryptic soy broth containing 6.5% NaCl and seeded on a chromogenic agar (CHROMagar™ MRSA). Two suspicious colonies were confirmed as *S. aureus* by conventional tests. Antibiotic susceptibility was determined by disk diffusion method according to CLSI, *mecA* gene and PVL by PCR, *SCCmec* by multiplex PCR and MLST according to previously described (www.pubmlst.org).

Results: Both *S. aureus* isolates from two 154-day pigs were MRSA, *mecA* positive, PVL negative, *SCCmec* type V and CC1 (Clonal Complex 1) by MLST. Both strains were also resistant to tetracycline, erythromycin, clindamycin, chloramphenicol and ciprofloxacin but susceptible to gentamicin, rifampin, nitrofurantoin and linezolid.

Discussion and Conclusion: This is the first report of MRSA colonization in healthy pigs from Argentina. Both strains showed multidrug resistance phenotype, *SCCmec* type V and PVL negative and belonged to CC1 MRSA, which was previously reported in European farms. CC1, is a successful lineage associated with human infections, which includes PVL-positive CA-MRSA also known as USA400, and have been reported as the sixth most prevalent clone, both MSSA and MRSA, isolated from human invasive infections in Europe. Measures should be implemented at farm-level to prevent the spread of this zoonotic LA-MRSA clone from livestock to humans. We highlight the finding of LA-MRSA in Argentine pig farms and the emergence of the multidrug resistant CC1 MRSA lineage in swine.