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COMPARISON OF VIRULENCE-ASSOCIATED GENE PROFILES OF 408 *STREPTOCOCCUS SUIS* STRAINS FOUND IN 138 GERMAN PIG FARMS IN 2015-2017

K. Lillie-Jaschniski[1], J. Rohde[2], S. Hartung[1], M. Köchling[1], N. Mertens[1].

[1]IDT Biologika GmbH, Dessau-Rosslau, Germany; [2]Institute for Microbiology, University of Veterinary Medicine, Foundation, Hannover, Germany.

Introduction

In order to reduce antimicrobial usage in the suckling period or in the nursery, autogenous vaccines against *Streptococcus suis (S.suis)* play an increasing role in prophylaxis. To produce a vaccine out of the relevant agents, isolation of strains out of altered regions/organs is the first step to success. The assessment of virulence-associated genes can also help to decide which strains to choose.

Material & Methods

The 408 *S.suis* strains were analysed by multiplex PCR to identify the serotype (*cps* type) 1,2,7 and 9, as well as to identify four genes of virulence-associated factors: sortase (srtD), muramidase released protein (mrp), suilysin (sly) and extracellulare protein (epf). The used PCR can't distinguish serotype 1 from serotype 14 and serotype 2 from serotype1/2.

Results

All of the cps1,2 and 9 strains contained at least one virulence factor gene. Only cps1 (29%) and cps2 (29%) strains where mrp+, sly+, epf+, srtD+. Only 95% of the cps 7 strains were mrp+. 40% of the non typable strains showed no virulence-associated gene. For 182 isolates the location of detection was declared. In the CNS and the joints most isolates contained more than one virulence factor, whereas in the pulmonary tract and serosa a high percentage (14% and 22%) of the isolates had no virulence-associated genes.

Discussion & Conclusion

The results show, that it is very important to have a deeper look at the virulence potential of strains being choosen for the production of autogenous vaccines. If the isolates were isolated from CNS or joints, they most likely harbour at least one virulence-associated factor. Isolates from the respiratory tract and serosa however often have different virulence profiles than the affore mentioned isolates. Therefore, one cannot simply equate the isolate from one location with an isolate from a different location for use in an autogenous vaccine.