



## BACTERIAL DISEASES

BBD-060

### MOLECULAR CHARACTERIZATION OF VIRULENCE IN *HAEMOPHILUS PARASUIS*

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#### Introduction

*Haemophilus (H.) parasuis* can be a commensal in the upper respiratory tract or a facultative infectious agent. Typical pathological findings are characterized by fibrinous inflammation. Glässer's disease, has to be distinguished from solitary bronchopneumonia, and strains are highly variable regarding serotype, virulence and antibiotic resistance. This causes massive problems in diagnostics, therapy and vaccination. The aim of the present study was to characterize molecular markers of *H. parasuis* in association with virulence of field isolates.

#### Material & Methods

138 strains of *H. parasuis* were collected from herds in Germany (Lower Saxony and Hesse). *H. parasuis* was cultured, serotyped and screened by PCR regarding 10 potential virulence genes. Samples were obtained from individual pigs during necropsy. According to the overall disease status of the pigs (clinic, pathology, microbiology), they were classified into four degrees: from 0 (without any symptoms) to 3 (high-grade of *H. parasuis*-specific findings) led to an assessment of the virulence of the examined strains. Associations between serotypes, resistance, virulence factors, evidence in the organs, category of the age of the pigs and category of illness were examined via Pearson's  $\chi^2$  test.

#### Results

The severity of disease levels within herds varied from definite cases of commensalism to cases with specific, high degree clinical and pathological symptoms. Five of the ten virulence factors were significantly associated with the pathological outcome, the degree of participation of *H. parasuis* in the disease and the age of the pigs. However, associations with serotypes and resistance to antibiotics could not be detected.

#### Discussion & Conclusion

Inclusion of virulence factors into *H. parasuis* diagnostics can significantly improve the diagnostical output. This additional information can help to decide, whether *H. parasuis* has to be classified as the causative agent or just a commensal in a current case.