

### DC13: Bead-based DNA assay for the detection of *Streptococcus suis* in tonsillar specimens of pigs

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*Streptococcus suis* is an important swine pathogen in nearly all countries with an extensive pig industry. In pigs it is associated with meningitis, arthritis, endocarditis, septicemia, pneumonia and sudden death. In certain parts of Asia *S. suis* is a common cause of bacterial meningitis in humans. Attempts to control *S. suis* in pig farming are hampered by the lack of sensitive diagnostic tools and effective vaccines.

To provide a basis for adequate control measures, a bead-based suspension array was developed that targets six genes using multiplex PCR followed by target specific primer extension (TSPE) and subsequent hybridisation to beads. Assays were designed using AlleleID and Primer-Plex on consensus sequences of four serotype specific capsular polysaccharide (cps) genes (cps1I, cps2J, cps7H, cps9H), the extracellular virulence factor EF (epf) and a general *S. suis* marker (glutamate dehydrogenase; gdh). The proof-of-principle of the assay was demonstrated with chromosomal DNA of reference strains: each PCR was capable of producing the desired amplicon, also when performed in a sixplex reaction. Upon hybridisation of the TSPE products, all multiplex PCR products produced signals on the appropriate beads.

This assay will be evaluated with field samples, using DNA isolated from tonsillar specimens of pigs. Ultimately, this expandable assay may be applicable for studying epidemiology and transmission, and could contribute to efforts aimed at control and eradication of *S. suis* in pig farming, thereby contributing to human health.

### DC14: Antimicrobial susceptibility of *Bordetella avium*, *Ornithobacterium rhinotracheale* and *Riemerella anatipestifer* strains from wild and domesticated birds in Hungary

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The emergence of multi-drug resistance is now becoming one of the major medical and veterinary concerns. Animals are considered potential reservoirs of multidrug-resistant Gram-negative organisms. The indiscriminate overuse of antibiotics in veterinary medicine has contributed to the selection of resistant pathogens. At the same time, the food production industry increasingly demands the minimal use of antibiotics in food production animals. Thus, up to date data on the antimicrobial susceptibility of bacterial isolates is essential for a sensible and effective use of antibiotics in practice.

Respiratory tract infections are causing considerable economic loss in the poultry industry around the world. *Bordetella avium*, *Ornithobacterium rhinotracheale* and *Riemerella anatipestifer* are among the several pathogens associated with respiratory disease. Antimicrobial susceptibility of 20 *B. avium*, 38 *O. rhinotracheale* and 55 *R. anatipestifer* strains were determined by Kirby-Bauer disk diffusion method. Most strains were resistant to nalidixic acid, lincomycin, sulphamethoxazole trimethoprim and sulphonamides, and were susceptible to ampicillin, amoxicillin and doxycycline. As expected, strains isolated from wild birds were susceptible to considerably more antibiotics than strains from domesticated poultry species. Recent isolates showed greater resistance than strains from the 1980s, indicating the spread of resistance in these bacterium species. No plasmids were isolated from *O. rhinotracheale* strains, while 50 % of the examined *R. anatipestifer* strains yielded a ~9000 bp sized plasmid.