

Research project IZS VE 15/11

Development of a suspension array serology assay to detect antibodies to bovine respiratory viruses

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Bovine respiratory diseases are mainly caused by bovine respiratory syncytial virus (BRSV), bovine parainfluenza 3 (BPIV3), bovine viral diarrhoea virus (BVDV) and bovine herpesvirus 1 (BHV-1). The etiological diagnosis is currently based on the serological detection of specific antibodies by multiple ELISA tests. On the contrary, the application of suspension array technology allows the simultaneous detection of multiple antibodies in a single assay.

The aim of this project is therefore to implement a multiplex serology test using 6 recombinant antigens (BRSV and BPIV3 F proteins, BVDV E2 and NS3, BHV-1 gB and gE) produced in a eukaryotic system. We will evaluate test performance in comparison to commercially available and "in-house" ELISA tests, developed with the produced antigens. By parallel analysis of IgM/IgG presence, we expect to discriminate ongoing/recent infections from past immunizations and to exploit suspension array quantitative outputs as an alternative to virus neutralization (VN) titration.