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KINETICS AND IMMUNOGLOBULIN SUBTYPING OF MATERNALLY-DERIVED ANTIBODIES AFTER VACCINATION OF GILTS WITH A *SALMONELLA* TYPHIMURIUM LIVE VACCINE

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Introduction

SALMOPORC (IDT Biologika GmbH) is a *S. Typhimurium* live vaccine for pigs licensed for oral (piglets) and subcutaneous (sows) application. The antibody kinetics evoked by each administration route have been studied so far, but knowledge about the maternal transfer of antibodies, the transferred immunoglobulin classes and their respective kinetics during the first weeks of a piglet's life is lacking. This was therefore aimed to be investigated by this study.

Material & Methods

Seven pregnant gilts were subcutaneously vaccinated twice 6 and 3 weeks prior farrowing with 5×10^6 CFU of the vaccine SALMOPORC. Further 8 gilts received physiological NaCl (s.c.) at the same time points (control). Blood samples were taken from the gilts prior to each vaccination and after farrowing as well as weekly from two piglets per litter from their 1st until the 5th week of life. Colostrum was collected during farrowing. The samples were serologically analysed by ELISAs detecting *Salmonella*-specific LPS antibodies (Swine Salmonella Ab [IDEXX]) and the isotypes IgM, IgA and IgG [in-house ELISAs]). Statistics were performed using the Wilcoxon-Mann-Whitney-Test ($p < 0.05$).

Results

The vaccination of the gilts led to significantly increased *Salmonella* specific antibodies in serum and colostrum at farrowing. These antibodies were transferred to the offspring and showed decreasing amounts in the piglets. The antibodies were still detectable until 5 weeks after farrowing. The antibodies belonged primarily to the isotypes IgG and IgA.

Discussion & Conclusion

Salmonella-specific antibodies were induced by immunization of gilts with SALMOPORC and transmitted to the offspring by colostrum milk. Transfer of IgA and IgG might be of superior importance in providing immune protection during the first weeks of life. STM-specific IgM antibodies seem of minor importance.