THE COMBINATION OF TWO SALMONELLA-ANTIGEN TEST SYSTEMS FOR RELIABLE DIAGNOSTIC OF SALMONELLOSIS IN STOCKBREEDING PIGS


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Introduction: Salmonella enterica is a facultative intracellular pathogen that is capable of causing disease in a range of hosts. The genus Salmonella covers more than 2,400 different serotypes, whereof some specific clones have become very dominant in one or more host species and have been able to spread worldwide. Nevertheless, all serotypes must be considered potential human pathogens. During the last few decades, infections with Salmonella enterica have been recognized as a major hazard to humans in most developed countries, as according to the 1995 WHO report 88% of all food-borne diseases are caused by Salmonella. Due to intensified stockbreeding the risk of Salmonella transmitted to man by consumption of food of animal origin has increased (1,2). But beside the potential health hazard for man, important financial losses arise in meat processing plants because complete production charges have to be removed from the market when salmonellae are detected therein.

Materials and Methods: In this study we introduce the combined application of two enzyme-linked immunosorbent assay (ELISA) systems for the detection of anti-Salmonella antibodies in serum samples. An indirect ELISA was developed using lipopolysaccharide (LPS) from S. typhimurium and S. cholerae suis (SALMOTYPE® Pig LPS ELISA). Using this test system commercial swine herds are assigned to detect the Salmonella prevalence. The typical application area for SALMOTYPE® Pig LPS ELISA are the survey of the infection status of animals in breeding establishments as additional quality indicator and the fast raw material classification in slaughterhouses and meat-processing industries. The use of this ELISA enables the detection of common Salmonella serovares determined in the O-antigens 1, 4, 5 and 12. This screening method is easy to handle and provides safe and reliable information on the infection status of the animals. Application of
**SALMOTYPE**<sup>®</sup> Pig LPS ELISA kit contributes to enhancement of safety for producers and end consumers. Furthermore an ELISA using antigens from whole cell extract of *S. typhimurium* or *S. cholerae suis* for the differentiation between *Salmonella*-specific antibodies is available. After a screening procedure using SALMOTYPE<sup>®</sup> Pig LPS ELISA these kit allow the assignment of the sample serotype to one of these relevant infection causing pathogens, which might play an important role in prophylaxis and therapy of salmonellosis.

**Discussion:** The combination of the diagnostic ELISA kits, contemplated in this study, can be a helpful instrument in monitoring, prophylaxis and therapy of salmonellosis. The consequent application meets the requirements of the international efforts to reduce the introduction of *Salmonella* into foodstuff and is therefore eminently recommendable.