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Clonal analysis and virulence-associated traits of native *Escherichia coli* from urethra of gilts and natural/artificial pregnant sows

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Statements of the Problem: The reproductive performance of sows is a key factor in the herd's productivity. Urinary tract infections (UTI) are a common problem in females, causing repeat breeding with a delayed return to estrus, which reduces the animal's welfare and the litter performance; *Escherichia coli* being associated to these infections. Diverse studies described a unique microbiota in the UT in bitch. Others authors concluded that the composition of the UT bacterial communities could have an important role in the health condition of the host.

Methodology: We performed the isolation and clonal association (rep-PCR, Box and Eric primers) of *E. coli* from the urethral microbiota of: healthy gilts-HG (n=9) and pregnant sows by natural breeding-NB (n=11) or artificial insemination-AI (n=11). Also, 12 virulence factors relevant for pyelonephritic strains were evaluated by PCR: hlyA, cnf, ibeA, iutA, kpsMT II, FimH, papC, sfa/focD, afa/draBC, traT, agn43, csgA.

Findings: Cultures revealed a slightly minor count (CFU/mL) for AI (3.7±0.59) group compared to HG (4.2±0.24) and NB (4.3±0.44). However, there were no differences for *E. coli* isolation (CFU/mL): 1.45±1.36, 2.87±1.53 and 2.61±1.84, for AI, NB and HG, respectively. The clonal analysis with both, Box or Eric primers, revealed a high similarity (>90%) between *E. coli* isolates from different animal groups. Positive reaction was found for: FimH (76%), agn43 (92%), traT (32%) and csgA (72%), these last ones showed a differential prevalence and were associated with *E. coli* from NB sows.

Conclusion & Significance: These results indicate that the management conditions could affect the characteristics of the urethral microbiota in sows and, therefore, the risk for urinary tract diseases.

Biography

Sergio E Pasteris has his expertise in the study of lactic acid bacteria (LAB) metabolism as well as in the isolation and evaluation of its beneficial properties to design probiotics for amphibian culture. Taken into account the development of resistant bacteria, some LAB strains represent an alternative instead chemotherapeutics to prevent epizootics in bullfrog systems breeding. Since bullfrog is a carrier of the etiological agent of chytridiomycosis, probiotics by using native LAB from bullfrog skin are being developed to be applied during the ex situ breeding of endangered amphibian species.

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