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EXPRESSION OF LISTERIOLYSIN S AND INTERNALIN A IN *LISTERIA MONOCYTOGENES* ISOLATES FROM FREE-RANGE PIGS AT SLAUGHTERHOUSE

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Introduction

L. monocytogenes is a major zoonotic pathogen that causes listeriosis, a severe disease in humans with a high case-fatality rate. This microorganism possesses several virulence factors with hypervirulent and hypovirulent clones being identified. *L. monocytogenes* is a ubiquitous bacterium previously isolated along the pork production chain; however, there is scarce information about the molecular characterization of *L. monocytogenes* isolates from swine abattoirs, in particular in pigs from free-range systems. The aim of this study was to identify the virulence factors listeriolysin O (LLO) and S (LLS) and the expression of internalin A (InIA) in 64 *L. monocytogenes* isolates from free-range pigs slaughtered in Spain.

Material & Methods

L. monocytogenes strains were serotyped using a commercial Listeria Antisera Set and subjected to a PCR assay which targets LLO (*hly*) and LLS (*lIsA*) genes. In addition, bacteria were grown overnight and routinely processed to determine the protein expression of InIA by Western blot analysis.

Results

Thirty-five (35/64; 54.7%) isolates were identified as serotype 4b, 28 (28/64; 43.7%) isolates as serotype 1/2a and one strain was nontypeable. All isolates belonging to serotype 4b were obtained from tonsils and abrasive sponges; however, the three isolates recovered from meat samples belonged to serotype 1/2a. The *lIsA* gene was identified in 56.2% (36/64) of *L. monocytogenes* isolates (mostly in strains from serotype 4b but also from serotype 1/2a). Marked differences were found at the protein level for InIA. Interestingly, InIA-truncated forms were identified in the three isolates coming from meat samples.

Discussion & Conclusion

Our results highlight a high prevalence of serotype 4b as well as the role of pig tonsils as a niche for *L. monocytogenes*. In addition, the *lIsA* gene was identified for the first time in strains belonging to serotype 1/2a (lineage II).