Detection of Lawsonia intracellularis in formalin-fixed Porcine Intestinal Tissue Samples: Comparison of Immunofluorescence and In-situ Hybridization, and Evaluation of the Effect of Controlled Autolysis - DTU Orbit (08/12/2018)

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Two methods, an immunofluorescence assay (IFA; with a Lawsonia intracellularis-specific monoclonal antibody) and fluorescent in-situ hybridization (FISH; with a specific oligonucleotide probe targeting 16S ribosomal RNA of the bacterium), were compared for their ability to detect L. intracellularis (the cause of porcine proliferative enteritis [PE]) in formalin-fixed samples of intestinal tissue. Of 69 intestinal samples with gross lesions of PE, 63 were positive by both FISH and IFA, but six were positive only by IFA. This indicated that the sensitivity of FISH was 91% that of IFA. However, both methods had a specificity of 100%. Fifty normal porcine intestines were negative by both tests. IFA was much less susceptible than FISH to the effects of autolysis. Thus, three of nine samples from pigs with PE were FISH-negative after being kept at 20°C for 4 days, and seven were FISH negative after 2 weeks; after 4 weeks at this temperature, however, six of the nine samples were still IFA positive. After being kept at 4°C for 12 weeks, the majority of samples (≥66%) were positive by both methods.