Application of fluorescent in situ hybridization for specific diagnosis of Pneumocystis carinii pneumonia in foals and pigs - DTU Orbit (27/12/2018)

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Fluorescent in situ hybridization, immunohistochemistry, and Grocott's methenamine-silver nitrate staining were compared as diagnostic methods for Pneumocystis carinii pneumonia in formalin-fixed lung tissue from foals and pigs. An oligonucleotide probe targeting 18S ribosomal RNA of P. carinii was designed for in situ hybridization, and a commercially available monoclonal antibody was used for immunohistochemistry. Samples from six foals and 10 pigs with P. carinii pneumonia, as verified by Grocott's methenamine-silver nitrate staining, were examined concurrently with samples from seven animals with pneumonia caused by other pathogens. Fluorescent in situ hybridization showed distinctive positive reactions for P. carinii in all test samples. The immunohistochemical procedure, however, only revealed P. carinii in the foals. The number of P. carinii organisms observed by fluorescent in situ hybridization and immunohistochemistry far exceeded the number of organisms stained by Grocott's methenamine-silver nitrate staining. The results show that fluorescent in situ hybridization targeting ribosomal RNA can provide a specific diagnosis of P. carinii pneumonia in foals and pigs.

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