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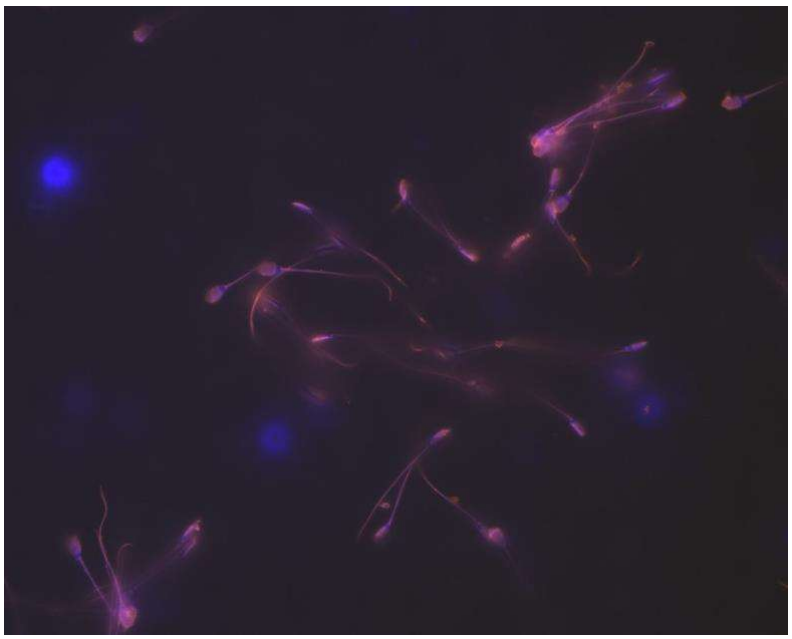
One Health

L'Animal et l'Homme, une même santé



30. Isolation and preliminary characterization of five lytic bacteriophages against *Pseudomonas aeruginosa* causing canine otitis externa

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Multi-drug resistant (MDR) *Pseudomonas aeruginosa* is a common bacteria isolated in canine chronic suppurative otitis externa. The presence of this bacteria is often correlated with a non-response to the medical treatment. Its virulence factors, including biofilm formation, make it a fearsome pathogen. The use of bacteriophages seems to be a promising alternative to treat MDR infections. The objectives of this study were to isolate and characterize lytic *P. aeruginosa* phages from wastewater. The enrichment method was used to isolate bacteriophages from Belgian wastewaters active against *P. aeruginosa.* Host range and efficiency of plating were performed on about fifty strains of *Pseudomonas* spp. coming from different species (dogs, cats, horses and reptile) and organs (ear canal, skin, tracheal and broncho-alveolar lavage, nose, fluid, eye). An efficiency of plating was performed for phages showing total and partial lysis. A total of five lytic *P. aeruginosa* phages were isolated from Belgian wastewaters. The phages showed a wide spectrum of lysis on *Pseudomonas* spp. Further studies are required to analyze the genome of these phages, but also their effect on the biofilm, before considering using a phage cocktail in MDR *P. aeruginosa* suppurative otitis externa.

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31. What is behind? Accidentology in racehorses in jump races

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Jump races are known as having the highest incidents and fatal injuries rates amongst equestrian disciplines. However, what is really behind those numbers? The racing industry has been granted a social license for now, but animal welfare compels us to better understand the different processes that lead to a horse being injured. We hypothesize that the risk of accidents associated to jump racing can be modelled using (1) the data of all horses entered in racing, in France, (2) the input obtained by reviewing the integrality of the races occurring all over the country for two years and, (3) spatio-temporal analysis. Racehorses' accidents during a race can result from cardiovascular conditions, spontaneous fractures, tendinopathies, a fall or a pathology inherent to a previous fall, etc. Determining the temporality of an accident with its causal or predisposing factors is of utmost interest for defining preventive measures. This research uses new technologies such as video analysis and GIS (Geographic Information System) combined with statistical scrutiny in order to better consider the context of occurrence of accidents/incidents at jump racing. Each horse fall and fatalities were analyzed using open-source software allowing to work in stop motion and multiple plans enabling to focus on each momentum. Subsequently, the information's were linked with veterinarians' files when available. Our preliminary results highlight the value of this new process to answer fundamental questions: which kind of incidents/pathologies can occur before a fall? What are the direct consequences of a fall, or do the incident at racing result from lesions developed during training? Etc.