DNA analysis of a horseracing legend

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Phar Lap's skeleton in the Museum of New Zealand Te Papa Tongarewa. Scientists are hoping to sequence its DNA. Credit: Michael Hall, courtesy of the Museum of New Zealand Te Papa Tongarewa

A new chapter in the story of Phar Lap is about to be added by the University of Sydney as it leads an attempt to sequence the famous horse's DNA.

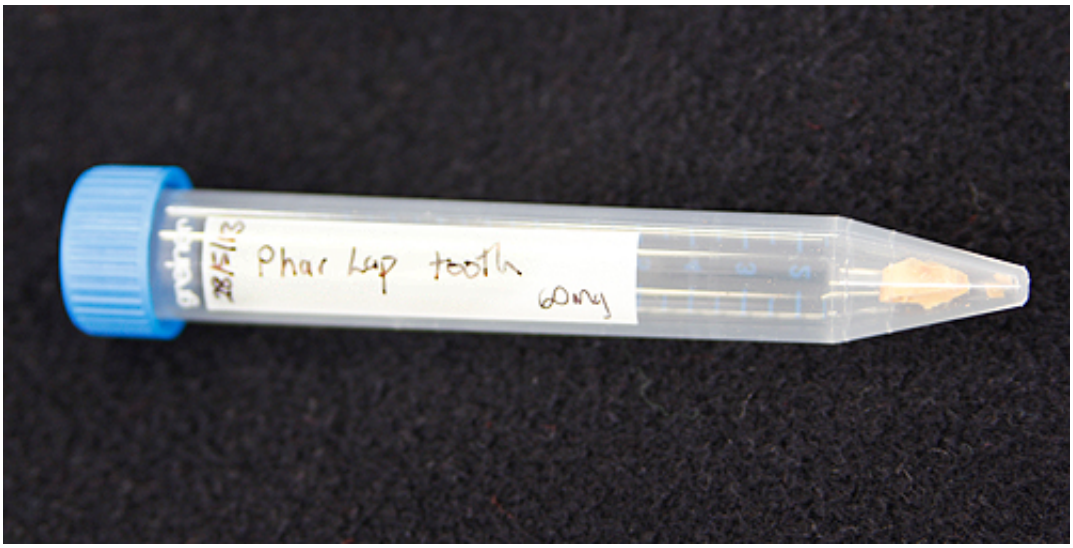
"Phar Lap's heart is in Canberra, his hide is in Melbourne, and his skeleton in the Museum of New Zealand Te Papa Tongarewa. Now the

museum has agreed to a 60mg piece of tooth from that skeleton coming to Sydney so we can unravel his genetic history," said Dr Natasha Hamilton, the team leader from the University's Faculty of Veterinary Science. Professor Claire Wade, also from the faculty, will be in charge of the genetic analysis.

The DNA extraction will be performed at the Australian Centre for Ancient DNA (ACAD), at the University of Adelaide, before being analysed at the University of Sydney.

"We are doing this out of scientific curiosity and all our data will be made publicly available. The DNA sequence will tell us if Phar Lap's genetic make-up looks like star racehorses of today, including whether he is a sprinter or a stayer (genetically better suited to running long distances)," Dr Hamilton said.

"We believe that no other southern hemisphere racehorses have had their whole genome sequenced before. By contrast, in Europe this research is quite popular and DNA analysis has been performed on notable horses such as Eclipse, racing's first superstar and an ancestor of 95 percent of today's thoroughbreds, and Hyperion, a popular sire from the 1930-50s who is found in numerous pedigrees."



The fragment of Phar Lap's tooth given to the researchers for this project.

The information will be used in current Faculty of Veterinary Science research such as international studies to understand the basis of genetic diversity in different breeds of horses, the structure of the thoroughbred breed and the genetics underlying the physiology of exercise across all horse species.

The skeleton was treated by being boiled in a corrosive solution which will have fragmented the DNA.

"There is a possibility that we will not be able to get much usable DNA, as they were obviously not thinking about the possibility of future DNA extraction when they prepared Phar Lap's skeleton in the 1930s," said Professor Alan Cooper, ACAD Director.

Professor Claire Wade said that despite this limitation current whole genome sequencing methods can work with small pieces of DNA, so the researchers are hopeful they will be able to generate usable information.

The fragmentation of the DNA also means it would not be usable in other projects that require large amounts of good quality DNA such as cloning.

"So, sorry punters, there is no hope of Phar Lap II running around a few years from now," Dr Hamilton said.

This is not Phar Lap's first association with the University of Sydney. According to research quoted by Museum Victoria the horse was named by Aubrey Ping, a medical student at the University in the 1920s.

Provided by University of Sydney