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Genetics: When is a king not a king?

Scientific Reports

April 24, 2014

The whole draft genome sequence based on DNA contained within a blood sample previously attributed to the French king Louis XVI suggests that the sample is highly unlikely to belong to the king. The findings, published in Scientific Reports this week, highlight the potential insights into historical periods that genetic sequencing can offer.

A decorated gourd, dated to the French Revolution period, contained a handkerchief that was thought to have been dipped in the blood of Louis XVI after his beheading in 1793. However, recent genetic analyses of living descendants of the French king have challenged this identification.

Carles Lalueza-Fox and colleagues report the full genome of the DNA contained in the gourd at low coverage. They find that the ancestry of the sample does not seem to be compatible with Louis XVI's known ancestry. Additionally, although Louis XVI was known to be very tall ? he was often described as the tallest person at Court, for example, and the length of his coronation cloak also indicated that he was tall ? the genome doesn't seem to contain an excess of alleles contributing to height. The genome also suggested the bearer was very likely to have had brown eyes, whereas Louis XVI is known to have had blue eyes.

The data offer more accurate inferences on ancestry and phenotype than those obtained by traditional forensic methods. Higher quality genomes based on this sample, as well as other possible genomes of Louis XVI's Bourbon dynasty relatives could help to provide a more definitive answer to the question of whether the blood sample contained within the gourd belongs to Louis XVI.

DOI:10.1038/srep04666 | Original article

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