

## **THE IDENTIFICATION OF THE MUMMIFIED HEAD OF THE FRENCH KING HENRY IV AND A PRESUMED BLOOD SAMPLE FROM THE FRENCH KING LOUIS XVI – SOLVING THE CONTROVERSIES THROUGH A GENEALOGICAL DNA APPROACH**

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In 2010, a mummified head was identified by a multidisciplinary study as belonging to Henri IV (1553-1610), King of France (Charlier et al. *BMJ* 341: 1326-1327). His body was removed from his grave in the Basilica of Saint-Denis during the French revolution and the mummified head had been conserved since then in successive private collections. In 2013, Charlier and co-workers (*Forensic Sci. Int.* 226: 38-40) reported a mtDNA sequence and a partial Y-STR profile for the head that matched for 5 out of 6 Y-STR loci with a Yfiler profile determined previously for a presumed blood sample from King Louis XVI, who died in Paris on the guillotine in 1793. The difference (deletion) for the sixth locus was explained as a mutation during the seven generations that both persons separate in their genealogy. These results were interpreted as a positive argument for the authenticity of the head and a confirmation of the donor of the blood sample. However, doubts have been raised not only about the initial identification in 2010 but also concerning the DNA results for the head of King Henri IV as a previous attempt for DNA identification was unsuccessful and matrilineal genealogical data revealed that the published mtDNA sequence of the head was also different from the sequence of Louis XVII, a maternal relative of King Henri IV. This mtDNA sequence was published previously by our lab in determining the authenticity of a presumed heart from Louis XVII, son of Louis XVI and Marie-Antoinette, and these results were also confirmed by the analysis of mtDNA from living maternal relatives. In order to settle the question whether the DNA results from the mummified head are authentic and the presumed blood sample is indeed from King Louis XVI, we collected DNA samples from three living males of the family of the House of Bourbon to which both kings belong. These samples are now used for the analysis of 42 Y-STRs (including PowerPlex® Y23) and the determination of the Y-haplotype for the House of Bourbons by Y-SNP typing. The results of this study will be presented in addition to some guidelines for future historic DNA studies.