GENETIC IDENTIFICATION OF THE PUTATIVE REMAINS OF THE FAMOUS ASTRONOMER NICOLAUS COPERNICUS

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We report the results of mitochondrial and nuclear DNA analyses of skeletal remains exhumed in 2005 at Frombork Cathedral in Poland, that are thought to be those of Nicolaus Copernicus (1473–1543). The analyzed bone remains were found close to the altar Nicolaus Copernicus was responsible for during his tenure as priest. The mitochondrial DNA (mtDNA) profiles from 3 upper molars and the femurs were identical, suggesting that the remains originate from the same individual. Identical mtDNA profiles were also determined in 2 hairs discovered in a calendar now exhibited at Museum Gustavianum in Uppsala, Sweden. This calendar was the property of Nicolaus Copernicus for much of his life. These findings, together with anthropological data, support the identification of the human remains found in Frombork Cathedral as those of Nicolaus Copernicus. Up-to-now the particular mtDNA haplotype has been observed only 3 times in Germany and once in Denmark. Moreover, Y-chromosomal and autosomal short tandem repeat markers were analyzed in one of the tooth samples, that was much better preserved than other parts of the skeleton. Molecular sex determination revealed that the skeleton is from a male individual, and this result is consistent with morphological investigations. The minimal Y-chromosomal haplotype determined in the putative remains of Nicolaus Copernicus has been observed previously in many countries, including Austria, Germany, Poland, and the Czech Republic. Finally, an analysis of the SNP located in the HERC2 gene revealed the C/C genotype that is predominant in blue-eyed humans, suggesting that Copernicus may have had a light iris color.