

Migration back to Africa took place during the Palaeolithic

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Pestera Muierii (Romania) woman's skull . It is 35,000 years old and its complete mitogenome has been retrieved. Credit: E. Trinkaus and A. Soficaru

International research led by the UPV/EHU-University of the Basque Country has retrieved the mitogenome of a fossil belonging to the first Homo sapiens population in Europe

The UPV/EHU's Human Evolutionary Biology group has retrieved the

[mitochondrial genome](#) of a 35,000 year-old fossil of a woman found in the Pestera Muierii cave in Romania. She was among the first population of our species that inhabited Europe following the Eurasian expansion of Homo sapiens from Africa, and the [lineage](#) she belongs to reinforces the hypothesis of a back migration to Africa during the Upper Palaeolithic. The study has been published in *Scientific Reports*.

The palaeogenomics study led by Concepción de la Rúa has made it possible to retrieve the complete sequence of the mitogenome of the Pestera Muierii woman using two teeth. This mitochondrial genome corresponds to the now disappeared U6 basal lineage, and it is from this lineage that the U6 lineages descend. They now exist mainly in the populations of the north of Africa.

The study confirms the Eurasian origin of the U6 lineage and supports the hypothesis that some populations embarked on a back-migration to Africa from Eurasia at the start of the Upper Palaeolithic, about 40,000 to 45,000 years ago. The Pestera Muierii individual represents one branch of this return journey to Africa, of which there is no direct evidence owing to the lack of Palaeolithic fossil remains in the north of Africa.

"Right now, the research group is analysing the nuclear genome, the results of which could provide us with information about its relationship with the Neanderthals and about the existence of genomic variations associated with the immune system that accounts for the evolutionary success of Homo sapiens over other human species with whom it co-existed. What is more, we will be able to see what the phenotypic features of early Homo sapiens were like, and also see how population movements in the past influence the understanding of our evolutionary history," explained Prof Concepción de la Rúa.

More information: M. Hervella et al. The mitogenome of a

35,000-year-old Homo sapiens from Europe supports a Palaeolithic back-migration to Africa, *Scientific Reports* (2016). DOI: [10.1038/srep25501](https://doi.org/10.1038/srep25501)

Provided by University of the Basque Country

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