

Study reveals isolation, endogamy and pathogens in early medieval Spanish community

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Aerial view of the excavated area in the early medieval settlement of Las Gobas (Condado de Treviño, Spain). / GPAC (Grupo de investigación en Patrimonio Construido) Basque Country University. Credit: GPAC (Grupo de investigación en Patrimonio Construido) Basque Country University

An archaeogenetic study sheds new light on the isolated medieval community Las Gobas in northern Spain. Besides isolation and endogamy, researchers have also identified the variola virus, which can offer a new explanation of how smallpox entered Iberia.

Researchers from Sweden and Spain have conducted a comprehensive archaeogenetic study on a community that lived on the border between the northern Christian kingdoms and Al-Andalus during the early Medieval period. This dynamic era, especially in the Iberian Peninsula, was marked by religious competition, power struggles, and significant human mobility—factors that shaped the foundation of modern Europe.

The study, [published](#) in the journal *Science Advances*, focused on Las Gobas, a rural site in northern Spain's Burgos province, near the village of Laño. The community existed from the mid-6th to the [11th century](#) and is notable for its church and living areas carved into caves. The site also provides evidence of violence, likely from sword blows, found on some of the buried individuals. Forty-one burials were excavated, and 39 of them were subjected to archaeogenetic analysis.

The interdisciplinary research, led by Ricardo Rodríguez Varela from the Centre for Palaeogenetics (CPG) in Stockholm, integrated genetic, archaeological, and [historical data](#) to reveal the presence of an endogamous community in northern Iberia that remained relatively isolated despite centuries of turbulent regional history.



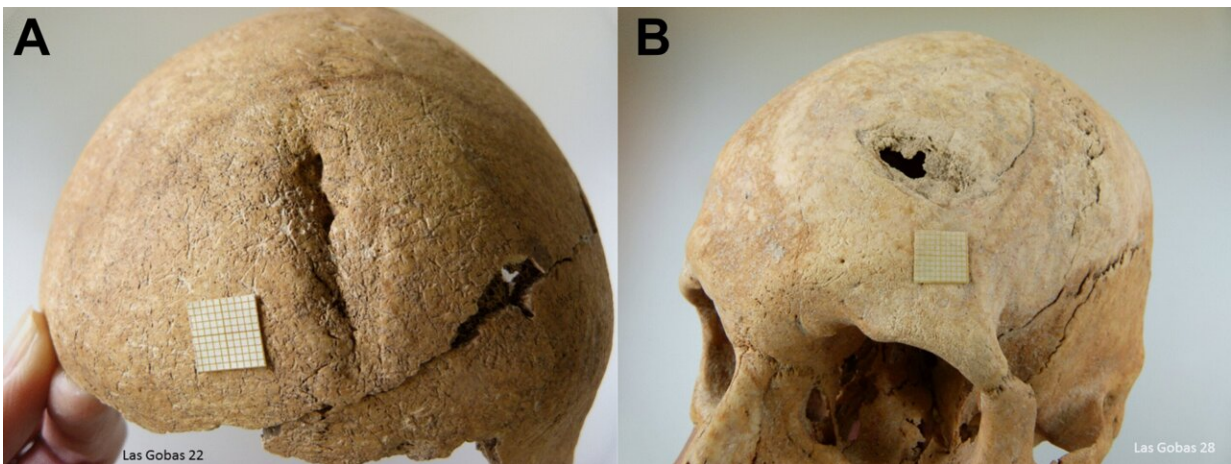
Aerial photo of the burials. Credit: Lourdes Herrasti

"Our findings indicate that this community stayed relatively isolated for at least five centuries," said Rodríguez Varela. Although Las Gobas is located just north of regions under Islamic rule, "we found relatively low levels of North African and Middle Eastern ancestry compared to other medieval individuals from the Iberian Peninsula, and we did not observe a significant increase in these ancestries after the Islamic conquest of Iberia," he concluded.

Zoé Pochon, also from CPG, highlighted the discovery of several

understudied pathogens in Las Gobas human remains. "For example, *Erysipelothrix rhusiopathiae*, a bacterium that causes [skin disease](#) through contamination of open wounds, often infects humans via [domestic animals](#), suggesting that animal-keeping was important for this community."

She also identified the variola virus, the causative agent of smallpox, in an individual from one of the more recent burials. This specific strain is similar to those found in Scandinavia, Germany, and Russia, underscoring the pan-European presence of smallpox during the Middle Ages.



Skulls showing signs of violence. Credit: Lourdes Herrasti

Anders Götherström, the senior author of the study and also based at CPG, emphasized the exhaustive nature of their research: "It is amazing how much information we were able to gather on this group of people through our archaeogenetic investigation. An endogamous group, familiar with violence, appears to have established itself in Las Gobas

during the 6th or 7th century. By the 10th century, smallpox seems to have affected Las Gobas, likely spreading through Europe rather than via Islamic routes, as was previously theorized for how smallpox entered Iberia."

This study provides new insights into the complex social, genetic, and health dynamics of a long-isolated community in early Medieval Spain.

More information: Ricardo Rodríguez-Varela et al, Five centuries of consanguinity, isolation, health and conflict in Las Gobas: A Northern Medieval Iberian necropolis, *Science Advances* (2024). [DOI: 10.1126/sciadv.adp8625](https://doi.org/10.1126/sciadv.adp8625). www.science.org/doi/10.1126/sciadv.adp8625

Provided by Stockholm University

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