

The genomic history of western mediterranean Balearic archipelago

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The Balearic Islands had a rich prehistory and history since the first colonization ~2500 BCE. The islands underwent a distinct dynamic compared to that observed on the European mainland, especially during the Late Antiquity and Medieval periods. To study the population dynamics associated with the historical changes, we generated genome-wide data from individuals spanning 3,000 years of history. Our results show that the initial settlers of the islands were genetically similar to the Beaker groups in Western Europe and Iberia. This genetic profile persisted until the Iron Age. The introduction of central Mediterranean and North African-related ancestries to the Archipelago occurred during the Carthaginian/Punic dominance. However, the most significant genetic shift took place during Roman times, marked by the arrival of genetic ancestries from the Near East and North Africa. In Late Antiquity, we observed increased mobility, with outlier individuals displaying diverse ancestries. The onset of Islamic domination in the Archipelago coincided with the introduction of West African ancestry in Menorca. Finally, the "Christianization" of the islands correlated with a decrease in North Africa and Near-Eastern ancestries. Our comprehensive study intertwines archaeology, history, and genetics providing a holistic view of the interplay between human populations and historical transitions in the Balearic Archipelago over 3000 years.

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