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# ABSENCE OF *Equus hydruntinus* IN THE IBERIAN BRONZE AGE FAUNAL ASSEMBLAGE: THE MITOCHONDRIAL DNA EVIDENCE FROM THE MIRADOR CAVE (ATAPUERCA, SPAIN)

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## Résumé

*Equus hydruntinus* had a broad distribution in Europe during the Pleistocene, with a decline starting after the Last Glacial Maximum. During the Holocene, the European *Equus hydruntinus* populations were highly fragmented, becoming extinct at different times. Based on scarce Iberian faunal remains from Neolithic to Bronze Age, it has been suggested that the Iberian Peninsula kept a residual *Equus hydruntinus* population. Nevertheless, different reanalyses of the faunal remains and stratigraphical conditions, have cast doubts about their chronological timeframes and even their taxonomic association. Furthermore it has been proposed that *Equus hydruntinus* was not present in Iberian Peninsula during the Holocene. On the other hand, two new Iberian Holocene faunal remains have been described as *Equus hydruntinus*. This taxon has been identified in a recent study on the faunal assemblage from the Mirador cave (Atapuerca, Spain), from Neolithic and Bronze Age cultural contexts. Two teeth were recovered from stratigraphic layers associated to each cultural period, and morphological and metric dental criteria were applied on them.

In order to corroborate the *Equus hydruntinus* presence in Mirador cave site, we have carried out genetic analysis from the two faunal remains. Mitochondrial DNA control region extractions and phylogenetical analyses were performed. Comparative sequences included extant

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members of the genus *Equus* (including sequences from modern and ancient individuals) and extinct *Equus* species, paying special attention to the *Equus hydruntinus* relationships.

We obtained DNA only from the Bronze Age tooth, and the phylogenetic analyses clustered its sequence among ancient and modern *Equus caballus* populations. The Mirador Bronze Age sequence clustered to the Lusitano group C, an haplogroup defined after Lusitano horse mitochondrial DNA analyses, and documented in the past exclusively in the Iberian Neolithic - Bronze Age horse populations.

This new study highlights the complexity in the taxonomic identification of *Equus hydruntinus* based on biometrical analysis, a question previously detected in other publications. Moreover our results reinforce the proposal that this equid was not present in Iberia during the Bronze Age times.

**Mots-Clés:** Iberian Peninsula, *Equus hydruntinus*, Neolithic, Bronze Age, Mitochondrial DNA, ancient DNA