

Abstract

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Exploration of anthropological specimens by GC-MS and chemometrics.

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Anthropological specimens combine a variety of unfavorable characteristics, rendering their evaluation an analytical challenge. Their remarkable status is primarily based on two characteristics: (i) these very rare samples of human origin are testimonies of human history and are, therefore, available only in minute amounts for analytical purposes, and (ii) the analysis of these samples is extremely limited by the decomposition of molecules, which are easily detected in living organisms, such as nucleic acids and proteins, but are subject to rapid post-mortem decay. In this article, we review the methods and results of archaeometry, emphasizing the role of MS combined with chemometrics. Focusing on experimental results for fatty acid profiles, specimens from mummies from different civilizations were compared. Considering in particular the Tyrolean Iceman, the application of chemometric methods to GC-MS data recovers essential information about the preservation and the storage conditions of mummies.