Multi-tissue and multi-isotope ($\delta^{13}C$, $\delta^{15}N$, $\delta^{18}O$ and $^{87/86}Sr$) data for early medieval human and animal palaeoecology

Data Papers

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Multi-tissue and multi-isotope ($\delta^{13}C$, $\delta^{15}N$, $\delta^{18}O$ and $^{87/86}Sr$) data for early medieval human and animal palaeoecology

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Abstract. Human isotopic ecology at its core aims to study humans as a part of their environments, as animals within an ecosystem. We are complex animals with complicated foodways and mobility patterns that are hard to address without large multifaceted data sets. As biomolecular data from archaeological remains proliferates scientists are now at the stage where we are able to collate large bodies of data and undertake complex meta-analyses and address the complexities of human ecology and past socioenvironmental dynamics. Here we present a data set of 862 entries of new primary isotopic data (37 faunal bone, 235 human enamel carbonate with a subset of 18 for $^{87/86}Sr$, 347 human bone, 243 human bulk dentine) within a larger data set compiled from available legacy data. It contains a total of 8,910 isotopic entries from ancient humans and animals relating to diet and mobility from the late Roman period into the Middle Ages (c. 400–1200 AD). It includes carbon, nitrogen, oxygen, and strontium isotope ratios from human bone, human dentine, faunal bone, and human bioapatite from thousands of individuals, and hundreds of sites found across 26 modern countries in western Europe. Studies have previously focused on only one of these aspects, compiling data sets for one tissue, or common isotopic pairing, or focusing on a particular site or region at a smaller scale for multi-isotope multitissue studies. This is the largest and first multitissue, multi-isotope, multiproxy data set of its kind from premodern populations. In publishing this data set, we hope to inspire more synthetic and meta-analytical work on human isotopic ecology. Insights from these data should lead to greater understanding of diet, agriculture, climate change, human–animal interactions, mobility/migration, and much more in the past. It is hoped that these insights into past socioenvironmental dynamics will help inform current discourse on human–environmental interactions. There are no copyright or proprietary restrictions on the data; these data papers should be cited when these data are used in publications. Additionally, we would like to hear from other researchers who use these data sets in teaching or for their own research.

Key words: *bioapatite; carbon; collagen; dentine; diet; Europe; isotopes; medieval; mobility; nitrogen; oxygen; strontium.*

The complete data sets corresponding to abstracts published in the Data Papers section in the journal are published electronically as Supporting Information in the online version of this article at http://onlinelibrary.wiley.com/doi/10.1002/ecy.3349/suppinfo.

Open Research

Data are also available at the University of Cambridge's Apollo repository: https://doi.org/10.17863/CAM.58286.

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