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# Contribution of Zn isotope ratios in the understanding of Neandertals subsistence strategy: a case study from Gabasa, Spain

**KLERVIA JAOUEN**[1], VANESSA VILLALBA MOUCO[2,3,4], GEOFF M SMITH[5], MANUEL TROST[6], JENNIFER LEICHLITER[7], TINA LUEDECKE[8], PAULINE MEJEAN[1], STEPHANIE MANDROU[1], JÉRÔME CHMELEFF[1], DANAE GUISERIX[9], NICOLAS BOURGON[6], MARIA FERNANDA BLASCO SANCHO[10], JÉSSICA MENDES CARDOSO[1], CAMILLE DUQUENOY[1], ZINEB MOUBTAHIJ[6], DOMINGO C SALAZAR GARCIA[11,12], MICHAEL RICHARDS[13], THOMAS TÜTKEN[14,15], JEAN-JACQUES HUBLIN[16], PILAR UTRILLA[4] AND LOURDES MONTES[4]

[1]Géosciences Environnement Toulouse/CNRS
[2]Institute of Evolutionary Biology
[3]Max Planck Institute for the Science of Human History
[4]University of Zaragoza
[5]University of Kent
[6]Max Planck Institute for Evolutionary Anthropology
[7]Johannes Gutenberg University
[8]Max Planck Institute for Chemistry
[9]ENS-Lyon
[10]Ayutamiento de Zaragoza
[11]IKERBASQUE
[12]University of Valencia
[13]Simon Fraser University
[14]Institute of Geosciences, Johannes Gutenberg University Mainz
[15]Universität Mainz, Department of Analytical Palaeontology
[16]Collège de France

Presenting Author: klervia.jaouen@get.omp.eu

Traditionally, the isotopic tool of choice to characterize ancient diets is the nitrogen isotope ratio. In Middle Paleolithic Europe, this type of analysis showed that Neandertals were purely carnivorous. However, other tracers such as plant microremains and micro-DNA in dental calculus suggest that Iberian Neandertals may have frequently consumed plants. Due to poor preservation of collagen at Paleolithic sites in the region, nitrogen isotope ratios cannot be used to confirm this conclusion. Zinc isotope ratios ($\delta^{66}$Zn) have recently proven to be a promising method for reconstructing the trophic level in the absence of organic matter preservation. We conducted zinc (Zn), but also strontium (Sr), carbon (C) and oxygen (O) isotope and trace element analyses in dental enamel on a Pleistocene food web in Gabasa, Spain. Our data shows an extremely low, carnivore-like $\delta^{66}$Zn value for the Neandertal's tooth, which contradicts the hypothesis of substantial plant consumption. We will discuss the possible origin of such a $\delta^{66}$Zn value, comparing it to that of sympatric carnivore and herbivore species from Gabasa, hominins from other sites and the abovementioned other tracers (C, O, Sr isotope and trace element ratios).