

Comparative Study on Sample Preparation in Carbon and Oxygen Isotope Analyses of Lake Ostracode Shells

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Abstract: Stable isotopic composition of fossil ostracode is used as an ideal proxy for paleo-lake sedimentary environments. Over the last three decades, measurements of the $\delta^{13}\text{C}$ and $\delta^{18}\text{O}$ values of ostracode shells have been extensively used in lake palaeoenvironmental reconstruction. Many methods for sample preparation have been applied in stable isotope measurements of ostracode shells from lake sediments. However, for stable isotope measurements of biocarbonate samples, different methods will probably affect the resolution, reproducibility and inter-laboratory comparison of the measurement results. In this paper, previous methods of sample preparation for biocarbonate isotopic measurements are compared, with their effects on $\delta^{13}\text{C}$ and $\delta^{18}\text{O}$ analyses evaluated. The results suggest that different methods will not result in remarkable differences in $\delta^{13}\text{C}$ and $\delta^{18}\text{O}$ measurements of lake ostracode shells. Therefore, sample cleaning procedure is considered unnecessary for such analyses.

Key words: Ostracode; Stable isotope; Sample preparation

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