



## **Mg/Ca temperature calibration for the benthic foraminifers *Bulimina inflata* and *Bulimina mexicana***

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*Bulimina inflata* Seguenza 1862 and *Bulimina mexicana* Cushman 1922 are cosmopolitan, shallow infaunal benthic foraminifers which are common in the fossil record throughout the Neogene and Quaternary. The closely related species share a similar costate shell morphology that differs in the presence or absence of an apical spine. In the present study, we evaluate the temperature dependency of Mg/Ca ratios of these species from an extensive set of core-top samples from the Atlantic and Pacific oceans. The results show no significant offset in Mg/Ca values between *B. inflata*, *B. mexicana*, and two other costate morphospecies when present in the same sample. The apparent lack of significant inter-specific/inter-morphotype differences amongst the analysed costate buliminds allows for the combined use of their data-sets for our core-top calibration. Over a bottom-water temperature range of 3-14°C, the *Bulimina inflata/mexicana* group shows a sensitivity of  $\sim 0.12$  mmol/mol/°C which is comparable to the epifaunal *Cibicidoides pachyderma* and higher than for the shallow infaunal *Uvigerina* spp., the most commonly used taxa in Mg/Ca-based palaeotemperature reconstruction. *B. inflata* and *B. mexicana* might thus be a valuable alternative in mesotrophic settings where many of the commonly used species are diminished or absent, and particularly useful in hypoxic settings where costate buliminds may dominate foraminiferal assemblages. This study was financially supported by the Max-Kade-Foundation and contributes to project P25831-N29 of the Austrian Science Fund (FWF).