

Cleaning procedure effects on elements/Ca of planktonic foraminifera tests

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Although trace elements of foraminifera shells are widely used for reconstructing chemical and physical properties of past ocean water masses, there is still some debate about the effects of cleaning procedures, with implications for inter-laboratory comparisons and the construction of databases.

Nowadays, two types of cleaning procedures are in use, the main difference between them being the presence of a reductive step. Our results show, for instance, that the method with the reductive step can lead to ~30% additional weight loss when applied on *Globigerinoides ruber*, with different impacts on trace elements (Mg/Ca, Mn/Ca, Cd/Ca and Ba/Ca show lower values in samples cleaned with a reductive step, whereas Li/Ca, B/Ca, Fe/Ca and Sr/Ca are not significantly affected).

But contrasted conclusions have been reached by different authors regarding the impacts of these cleaning methods on element/Ca ratios. This may likely reflect the fact that the impact of cleaning procedures could be species-dependent and could vary also with the preservation state of foraminifer shells. In order to address those issues we compare element/Ca data obtained by applying the two cleaning methods over the last ~24ka on three planktonic species (*Globigerinoides ruber*, *Pulleniatina obliquiloculata*, and *Globorotalia menardii*) picked from two sites located at different water depths (i.e. different preservation/dissolution states) in the south Indonesian archipelago, core MD98-2165 (water depth: 2100m) and core MD98-2166 (water depth: 3875m).