

Geochemical comparison of pink and white *Globigerinoides ruber*: Investigating habitat niches and their paleoclimatic significance

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Globigerinoides ruber have been important to paleoclimate studies in that they were used as proxies for surface reconstructions of temperature and hydrography and they provided stratigraphic controls for age models. The pink and white chromotypes of *G. ruber* have traditionally been separated in paleoclimatic reconstructions. We evaluated the relationship between chromotype and shell geochemistry ($\delta^{13}\text{C}$, $\delta^{18}\text{O}$, Mg/Ca, and $\Delta^{14}\text{C}$) for pink *G. ruber* and genetically identical white *G. ruber sensu stricto* (s.s.) in the subtropical Atlantic Ocean. Geochemical analyses were performed on core top samples from the western and eastern Atlantic basins.

In contrast with previous work, no distinct geochemical offset was found between the two chromotypes in $\delta^{13}\text{C}$, $\delta^{18}\text{O}$, or Mg/Ca space. In addition, we compared pink *G. ruber* and white *G. ruber* (s.s.) $\delta^{13}\text{C}$ and $\delta^{18}\text{O}$ in a down core record spanning from the present interglacial to the last glacial maximum. This comparison also indicated no significant geochemical offset between the two chromotypes. Based on these comparisons, we concluded that pink *G. ruber* and white *G. ruber* (s.s.) yield visually indistinguishable geochemical signatures in open basin, low accumulation sites and thus, may not need to be separated in paleoclimate reconstructions if the white chromotype is insufficiently abundant for the analyses prescribed.