



Carbon and Nitrogen Uptake of two intertidal Foraminifera (*Ammonia tepida* and *Haynesina germanica*) depending on salinity

Michael Lintner, Julia Wukovits, and Petra Heinz

University of Vienna, Department of Palaeontology, Vienna, Austria

Benthic foraminifera are abundant marine protists who play an important role in transporting energy in form of organic matter to a higher trophic level. Due to the aquatic lifestyle, environmental factors such as water temperature, salinity and pH are key indicators of carbon turnover through foraminifera.

In this study the influence of the salt content on the feeding activity of foraminifera will be considered in more detail. Two species, *Ammonia tepida* and *Haynesina germanica*, were collected at the mudflats in northern Germany (Friedrichskoog) at the beginning of May 2018 and cultured in the laboratory at 20 ° C and a light / dark rhythm of 16: 8h. A lyophilised green algae powder derived from a *Dunaliella tertiolecta* culture, which was previously enriched with the isotopes ¹³C and ¹⁵N, was used as food source. Laboratory feeding experiments were carried out at a salinity of 11, 24 and 37 PSU. To determine a time course, experiments were run at 1, 5 and 14 days for each salinity. The quantification of the recorded isotopes in the foraminifera biomass was carried out by mass spectrometry.

The results show, that *Ammonia tepida* has strongly higher uptake of added food material compared to *Haynesina germanica*. Furthermore, for *Ammonia tepida* the food uptake increases with increasing salinity. On the other hand, *Haynesina germanica* prefers moderate salt contents and has the highest feeding rates at a salt content of 24 PSU, which corresponds to the salinity of the sampling location. These results imply that the salinity-dependent uptake of food in *Haynesina germanica* is more influenced than that of *Ammonia tepida*. *Ammonia tepida* seems to be more tolerant to fluctuations of salinity than *Haynesina germanica*.