



## Grazing rates of bacterivorous protists inhabiting diverse marine planktonic microenvironments

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**ABSTRACT:** Bacterivory on aggregates and bulk seawater by three nanoflagellates and a microciliate was investigated. A new approach to measure bacterivory on the attached bacterial community is proposed. Macroaggregates containing attached fluorescently labeled bacteria (FLB) were obtained by adding labeled planktonic bacteria to rolling tanks filled with natural seawater, and they were used to measure protistan grazing rates on the bacteria attached to aggregates. Protistan grazing on free-suspended bacteria was measured according to the monodispersed FLB uptake technique. The four protists showed low grazing rates when feeding on free-suspended bacteria at the low densities usually found in seawater. Surprisingly, the analyzed protists also showed low grazing rates when feeding on aggregates despite the very high bacterial densities inhabiting them. The analysis of the influence of prey density on bacterial grazing rates suggests that feeding on bacteria attached to aggregates involves a relevant additional effort when compared to feeding on free-suspended bacteria. The paradox between these results and the very high abundance of protistan communities usually found in aggregates is discussed attending to the view of aggregates as biological reactors. Therefore, marine macroaggregates can be considered as microniches able to support the maintenance of a protistan community without food limitation, as well as to attract protistan colonizers by generating a water layer enriched in organic matter and bacteria.

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