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Microbiome partitioning of coexisting nematode species in shared microhabitats: insights of a metagenetic analysis

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Local species diversity and coexistence of ecologically similar species can be attained through differentiation of their ecological niche. Resource partitioning is a potential mechanism for niche differentiation and, along with different tolerances to abiotic conditions, can facilitate species coexistence. In this study, we characterise the microbiome of 10 marine bacterivorous nematode species of different phylogenetic relatedness, which co-occur in nature in intertidal habitats, using high-throughput sequencing. We investigate microbiome diversity and composition of nematodes collected from 6 types of phytal substrates – microhabitats (including 3 algal species and cordgrass, fresh and decomposing) in the field. A large microbial diversity and a high intraspecific variability of the nematode microbiomes was revealed. The microbiome of species sharing their microhabitats showed a significant overlap, suggesting that resource differentiation within a microhabitat is rather limited at a single moment in time. Microbiomes were also not strongly related with the microhabitat. But temporal divergence in resource use may occur, as suggested by temporally divergent microbiome composition of nematodes associated with *Ulva* sp. Potential ecological interactions of nematodes and bacterial or archaeal taxa belonging to their microbiome may also play a role in niche differences, either by facilitating resource utilisation or by affecting tolerances in abiotic conditions, their role deserving further study.

Keywords: Microbiome, next generation sequencing, metagenetics, resource partitioning, coexistence

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On the use of artificial substrates to evaluate environment differences using meiofaunal communities

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Meiofauna organisms are important components of coastal benthic systems and because meiofauna are strongly influenced by surrounding abiotic factors, changes in this trophic level, due to different environmental changes or impacts could become an important threat to the ecosystem. However, one of the major difficulties in the