

Phylogeny, cryptic diversity, and benefits of investigating marine lobose amoebae (Amoebozoa)

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Marine Amoebozoa are less well-known than the freshwater ones due to their generally smaller size, absence of several charismatic model taxa that have not (yet) been found in the sea, and difficulties of cultivation. Yet, most of the key Amoebozoan taxa comprise representatives that inhabit marine/brackish water or continental saline habitats. The number of the described species of marine amoebae is about 200 and counting. In this talk, we present an update on taxonomy and phylogeny of several naked lobose amoebae taxa from marine and continental saline habitats. Investigations of these organisms from remote and poorly accessible biotopes provide new data on their morphological and ultrastructural diversity demonstrating a number of novel, previously undetected lineages in marine plankton and deep benthos. While some of the species show ubiquitous distribution in the ocean, other taxa seem to be restricted in their distribution. In particular, we report the finding of a previously unknown marine lineage of amoebae that comprises at least two species seemingly restricted to the deep-sea biotopes. This lineage appears to comprise deeply-branching amoebozoans that superficially resemble *Variosea*, but have only SSU rRNA gene sequences of uncultured amoebozoans among close relatives. A number of novel phylogenetic lineages of amoebae may be isolated from the habitats where one does not really expect to find a lot of amoebae diversity. We will illustrate this by the first results of the investigation of marine amoebae associated with different floating substrates in plankton of the Bay of Villefranche. Here, several new species of Vannellida, Dactylopodida and Himatismenida have been found, as well as new amoebae that clarify morphological diversity of several discosean lineages poorly represented in the phylogenetic tree. Besides morphological and molecular studies, ecological investigations to determine the salinity tolerance ranges in different strains of naked lobose amoebae, may demonstrate a significant cryptic diversity even among morphologically identical strains. We revealed examples of euryhaline and stenohaline species that may prompt for the potential of their distribution in biosphere.