

Abstract

Filamentous aeroterrestrial green algae genus *Klebsormidium* occurs in a very wide range of freshwater and terrestrial habitats. Recent results of molecular investigations led to the finding that the diversity within this genus is far greater than expected on the basis of the morphological features, and that the traditional phenotypic species concept is insufficient. I tried to differentiate phylogenetic lineages within the genus *Klebsormidium* by their different biogeographical distribution and environmental preferences. Since no study dealing with the biogeographic pattern of aeroterrestrial algae was so far undertaken, another aim of this work was to test validity of the protist ubiquity model in aeroterrestrial habitats. I studied this issue based on the chloroplast *rbcL* molecular marker.

Based on the obtained data I found that the geographic definition of particular *Klebsormidium* lineages turns out to be unusable because of the cosmopolitan occurrence of almost all genotypes. However, the data obtained from the substrate specificity study shows that clear ecological preferences exist within the genus *Klebsormidium* and could be simply used to define different lineages within the genus.