

Morphology and Gene Sequence of an Endemic, New Colepid (Protozoa, Ciliophora) from the Ancient Lake Biwa, Japan

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SUMMARY

Endemism is difficult to prove in micro-organisms. However, the ancient freshwater lakes (Lake Baikal, Lake Tanganyika, Lake Biwa, Lake Ohrid) provide a unique opportunity to look for endemic flagship species. Indeed, some unique protists have been described from all the lakes cited, but mostly algae, while ciliates have been poorly researched. We investigated some samples from Lake Biwa for ciliates and found two undescribed flagship species which are likely endemic to the region or even to the Lake. Here, we report on a new colepid which belongs to a group of ciliates with highly conspicuous cortical scales. We used live observation, silver impregnation, scanning electron microscopy, and molecular biology (SSU rDNA) to characterize the new species. Morphologically, the new colepid differs from most other members of the group by the lack of spines near to the anterior and posterior end of the cell. Genetically, it is far away from the common, likely cosmopolitan *Coleps hirtus* (U97109) and two *Coleps* sp. (DQ 487194 and X 76646). Thus, our ciliate likely represents not only a new species but also a new genus. Interestingly, colepids without spines have been described also from Lake Baikal (Obolkina 1995) and Lake Tanganyika (Dragesco and Dragesco-Kerneis 1991). Thus, this group of ciliates provides strong support for ciliate endemism.