



## Resdescription of two synhymeniid ciliates, *Chilodontopsis simplex* Ozaki & Yagiu, 1941 and *Zosterodasys transverses* (Kahl, 1928) Foissner *et al.*, 1994 (Alveolata, Ciliophora, Phyllopharyngea)

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### Abstract

The morphology and infraciliature of two synhymeniid ciliates, *Chilodontopsis simplex* Ozaki & Yagiu, 1941 and *Zosterodasys transverses* (Kahl, 1928) Foissner *et al.*, 1994, collected from coasts of Qingdao, China, and Incheon, South Korea, respectively, have been investigated using live observation and protargol impregnation method. *Chilodontopsis simplex* is characterized by: cell size 90–160 × 45–95 μm in vivo, oval to long elliptical in outline; 59–78 somatic kineties, 11–13 nematodesmal rods; synhymenium constricted to ventral side, composed of 45–90 dikinetids, running across cell width; single contractile vacuole located in posterior cell end. The marine population of *Zosterodasys transverses* is briefly described, linked to the previously reported 18S ribosomal RNA gene (Genbank accession number EU286812), and compared to the freshwater population.

**Key words:** marine ciliated protozoa, Synhymeniidia, silver staining, *Chilodontopsis*, *Zosterodasys*

### Introduction

Synhymeniid ciliates, such as *Chilodontopsis* and *Zosterodasys*, could represent an important evolutionary link between two major ciliate groups, Phyllopharyngea and Nassophorea, according to recent molecular phylogenetic studies (Gong *et al.* 2009; Kivimaki *et al.* 2009). Morphologically, both *Chilodontopsis* and *Zosterodasys* are characterized by having a hypostomial fringe or synhymenium which is composed of a row of dikinetids confined to oral area. Nevertheless, the synhymenium in *Zosterodasys* is thickly ciliated (vs. sparsely ciliated), extending from right postoral cell surface to left preoral cell surface (vs. extending from only slightly right postoral region onto left preoral cell surface), contrasting to that in *Chilodontopsis* (Aleksperov 1985; Deroux 1978; Fernandez-Leborans & Aleksperov 1996; Foissner *et al.* 1994; Gong *et al.* 2007; Lynn 2008; Song & Wilbert 1989).

Until now, morphology and infraciliature of many synhymeniids have not been well documented, and fewer morphotypes have been linked to molecular markers. Here we redescribe two populations of synhymeniid species, *Chilodontopsis simplex* and *Zosterodasys transverses*, of which the former's infraciliature is revealed for the first time, and the latter is morphologically characterized, aiming to link the morphometrics to the previously reported 18S rRNA gene sequence (accession number: EU286812; Gong *et al.* 2009). The results of this study may be helpful in better understanding the morphological character evolution of the synhymeniids and of related taxa.

### Materials and Methods

*Chilodontopsis simplex* was collected from a seawater pond in Huangdao, Qingdao (Tsingtao), China (36°08'N; 120°43'E) in May 2003, and studied using glass slide method as described in Gong *et al.* (2005). *Zosterodasys*