

Abstract

Oxymonads (Excavata, Preaxostyla) are a group of anaerobic endobiotic flagellates living primarily in guts of xylophagous insects (cockroaches and termites). Some representatives of the genus *Monocercomonoides* belonging to the morphologically simplest family Polymastigidae have been described also from the guts of vertebrates. Oxymonads are a group of protist in which mitochondrion has not been proven yet. In this work, we have sequenced gene for SSU rRNA of two strains of *Monocercomonoides* and performed phylogenetic analysis of oxymonads. Five selected strains *Monocercomonoides* isolated from different hosts and distantly related on the phylogenetic tree were studied by using light (DIC and protargol staining) and transmission electron microscopy. The aim was to find differences between these strains. We have focused primarily on the morphology of the nucleus, appearance of the endoplasmic reticulum and structure of the fibre R1. We were able to distinguish the strains by the position of karyosome (central and parietal) and the number of microtubules in the R1 fibre (6-12) and we assume that they represent separate species. The phylogenetic position and appearance of the strains NAU3 were so different that it may represent a new genus. Mitochondria or double-membrane bounded organelles have not been observed in any strain.