

## Abstract

Fornicata is a recently established group of anaerobic protists that belongs to supergroup Excavata. Three main groups of Fornicata are Diplomonadida, Retortamonadida and *Carpediemonas*-like-organisms (CLOs). Most of these protists live as endobionts of various animals, several free-living representatives have been described as well. Fornicates are typical excavates, though some excavate features have been reduced in Diplomonadida. Diplomonads are unique with doubled (diplozoic) cell structure of most representatives. Several hypotheses explaining the evolution of diplozoic diplomonads were proposed, but none of them has been widely accepted. Fornicata are closely related to Parabasalia and Preaxostyla forming together clan Metamonada. Since Metamonada were considered to be primarily amitochondriate, they were classified among Archezoa. However, the kingdom Archezoa was rejected after the discovery of mitochondrial genes and reduced mitochondria in most supposedly archezoal protists. Within Fornicata, reduced mitochondria – called mitosome – was found in the parasite *Giardia intestinalis*.

*Giardia intestinalis* is a well known parasite of humans and other mammals. Besides epidemiology, there are many other interesting aspects of this protist that are intensively studied, e.g. its high genetic diversity, unusual reproduction, relationship between the two nuclei or complex cell division associated with cytoskeletal structure remodeling.

**Key words:** Fornicata, Diplomonadida, Retortamonadida, CLO, diplozoic, Metamonada, mitosome, *Giardia intestinalis*.