

Isolation of mastigonemes and analysis of the component proteins in *Peranema trichophorum*

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SUMMARY

Peranema trichophorum cells show unique unidirectional locomotion, gliding on the substratum at speeds up to 30 μ m/s, which is the highest among all protozoans. We have previously shown that mastigonemes on the anterior flagellum are involved in gliding motility of *P. trichophorum*. In this study, we attempted to elucidate the molecular machinery of this motility by analyzing the mastigoneme proteins of *P. trichophorum*. We first developed a new culture method, adding commercial milk to the *P. trichophorum* culture medium to obtain higher yields. Excretory substances were removed from the cell suspension by passing through a filter paper, followed by gentle centrifugation to collect the cells. We isolated flagella from the cell body by repeated cold shocks, and mastigonemes were successfully detached. The mastigonemes were collected as a pellet by centrifugation for 15 min at 20,000 *g*. SDS-PAGE showed a major band at 40 kDa. This is a candidate protein that is localized in the mastigoneme.