

# Contractile cytoplasm of *Peranema trichophorum* and its possible involvement in gliding motility

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## SUMMARY

*Peranema trichophorum*, a euglenoid flagellate, shows a unique unidirectional gliding locomotion on the substratum at speeds up to 30  $\mu\text{m/s}$ , which is the highest among all gliding microorganisms. When compressed and crushed between the slide and cover slip in a solution containing 0.1% Triton X-100 and 3 mM EGTA, a mass of elastic and fibrous cytoplasm was released from the anterior tip of the cell. The ejected cytoplasm was highly viscous and easily stretched by water flow. It became vigorously contracted by adding  $> 5 \text{ mM Ca}^{2+}$  with a speed similar to that of the cell gliding. These findings suggest the possible involvement of the cytoplasmic contractility in gliding motion of *P. trichophorum*.