

## Characteristics of symbiotic *Chlorella* in *Stentor polymorphus*

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### SUMMARY

The green ciliate *Stentor polymorphus* harbors *Chlorella*-like green algae as endosymbionts. There are little studies of the mechanism of symbiosis in this species in comparison with those of *Paramecium bursaria*. We succeeded in isolating the endosymbiotic algae of *S. polymorphus* collected from Shiga, Japan, and made algal-free hosts. In addition, we investigated some characteristics of the symbiotic algae; for example, chlorovirus infection to the isolated algae. The algae from *S. polymorphus* seemed to be able to use nitrates for growth, while endosymbiotic algae isolated from *P. bursaria* F36 (F36-ZK) could't. The algae could not become infected with the chloroviruses CVBW-330 and YK-1, which are capable of lysing F36-ZK. The release of algal products was also investigated in this study. The result indicated that some sugars are released from the isolated symbiotic algae. Furthermore, we accomplished in making algal-free hosts by cultivation in the dark for a month. Now we are examining the possibility of reinfection of the symbiotic algae.