

## Organization of mitotic microtubule structures in the macronucleus in *Tetrahymena thermophila*

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### SUMMARY

Nuclear division is one of the most important events for cell growth. However, its pattern varies between species. In the ciliate *Tetrahymena*, the macronucleus divides without chromosome condensation or typical mitotic spindle formation, and the nuclear envelope remains intact. Previously, using immunofluorescence methods, a characteristic structure composed of microtubules has been demonstrated inside the dividing macronucleus of *Tetrahymena pyriformis*, and a dynamic reorganization of these microtubules has been suggested. To understand the molecular mechanism of its formation and the function of this microtubular structure, we visualized microtubules inside the dividing macronucleus of *T. thermophila* in which genes had been manipulated. In addition, we examined the stability of the microtubules by reversibly depolymerizing them with cold treatment. The results suggest that stabilized microtubules exist inside the dividing macronucleus before its elongation along the longitudinal axis of the cell. In future, we are going to study the localization of microtubule-organizing centers in the dividing macronucleus to reveal in detail how these microtubule structures are organized.