FISH analysis of the telomere sequences of *Paramecium tetraurelia*

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SUMMARY

To know dynamics of chromosome positioning in micronuclei of *Paramecium tetraurelia*, we examined the localization of telomere sequences, using fluorescence *in situ* hybridization (FISH). We found two major patterns of the localization of telomere FISH signals. One was that FISH signals appeared as dots arranged in a circle and in the center of the circle ("circular signals") and the other was that FISH signals appeared as scattered dots ("scattered signals"). The "circular signals" were observed in most of cells 0, 2 and 18 h after the onset of conjugation. Micronuclei in these cells are considered to be in interphase. Merged images of FISH signals and DAPI staining showed that telomere sequences are localized around a DNA region in the interephase micronuclei. On the other hand, the "scattered signals" were observed in all of cells 5, 8 and 10 h after the onset of conjugation. Micronuclei in these cells are thought to be in M-phase. Furthermore, some of cells 12 and 15 h after the onset of conjugation (around the stage of macronuclear development) had both 2 nuclei with "circular signals" and 2 nuclei with "scattered signals," which probably correspond to new micronuclei and developing anlagen, respectively.