

Identification of nucleoporins in the binucleated protozoan *Tetrahymena thermophila*

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SUMMARY

The structure of the nuclear pore complex (NPC) has never been understood in binucleated ciliated protozoa. To disclose nucleoporins of *Tetrahymena thermophila*, we selected 23 new nucleoporin-like genes from the database and identified their 21 product proteins as nucleoporin. We then identified the locations of these nucleoporins in the nuclear rim. The majority of the nucleoporins were located in the rim of both the macro- and micronucleus. However, some nucleoporins were located in the rim of either the macronucleus or the micronucleus. The latter macro- and micronuclear-specific nucleoporins were all functional components of a nuclear transport mechanism. These results mean that the structures of the NPC in *T. thermophila* are differentiated according to the nuclei and that these distinct NPCs may control nuclear transport qualitatively and/or quantitatively between two the nuclei.