

Cytokinesis of *Tetrahymena*—the latest results and questions—

Osamu NUMATA

(Grad. Sch. Life Environ. Sci., Univ. Tsukuba)

SUMMARY

We suggested that cytokinesis of *Tetrahymena* is occurred by constriction of contractile ring just under the division furrow. In animal cells, the contractile ring is consists of actin filaments and type 2 myosin filaments. We investigated the existence of actin and type 2 myosin in contractile ring, and we got the following results. Latrunculin B which is an inhibitor of actin polymerization couldn't inhibit cytokinesis in *Tetrahymena*. Adf/cofilin regulates actin depolymerization and is an essential component of contractile ring in animal cells. However knockout of *Tetrahymena* Adf/cofilin gene showed no effects on cytokinesis. Concerning type 2 myosin, there is no type 2 myosin gene in the *Tetrahymena* gene expression database (<http://tged.ihb.ac.cn/Default.aspx>). We tried to knockout *Tetrahymena* Myo13 gene because Myo13 was similar to type 2 myosin. Knockout of Myo13 showed no effects on cytokinesis. Those results indicated that cytokinesis of *Tetrahymena* is different from that of animal cells. Therefore, we examined properties of four actins in *Tetrahymena*, and we found the existence of Latrunculin B resistant actin in *Tetrahymena*. From those strange facts, we suggests that the contractile ring in *Tetrahymena* is consists of Latrunculin B resistant actin and novel myosin.