

Studies of a polyclonal anti-immaturin antibody on sexual rejuvenescence by immaturin in *Paramecium*

Nobuyuki HAGA, Yui SASAKI and Tomoaki ABE
(Dept. Biol. Engn., Fac. Sci. Engn., Ishinomaki Senshu Univ.)

SUMMARY

A new generation of *Paramecium* begins immediately after the completion of the conjugation processes followed by three distinctive life cycle phases: sexual immaturity (about 50–60 fissions), maturity (several hundred fissions), and senescence (800–900 fissions). The length of the immaturity period and the whole life span are restricted by the total number of cell divisions after conjugation. We have isolated a polypeptide, named immaturin, which regulates the expression of sexual ability not only in immature cells but also in senescent cells, and produced a polyclonal anti-immaturin antibody (NH3545). Western blot analysis after SDS–PAGE indicated that NH3545 recognized a single polypeptide with the molecular mass of about 10-kDa in immature cells of both wild type and the early mature mutant cells. Functional inhibition of immaturin activity indicated that NH3545 strongly inhibits the immaturin activity of the rejuvenescence of mature cells. Indirect immunofluorescence experiments showed that immature cells had stronger fluorescent signals in the cytoplasm than that of mature cells. It would be very interesting to examine dynamic changes of immaturin during clonal aging and to detect homologous molecules in other organisms using NH3545 in the near future.