

Studies on immaturin, a sexual rejuvenescence molecule in *Paramecium*, by polyclonal antibody

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SUMMARY

The life history of *Paramecium* is characterized by well-defined stages of clonal development: conjugation, reproduction of a new generation, sexual immaturity, maturity, senescence and clonal death. The period of sexual immaturity is strongly related to the total number of cell divisions after conjugation. We isolated a polypeptide corresponding to the sexual rejuvenescence polypeptide, immaturin, from immature cells and produced a polyclonal antibody (NH3545) against the polypeptide. Indirect immunofluorescence observations, using Alexa Fluor 488-conjugated goat anti-rabbit IgG fragment as a second antibody showed that NH3545 reacted with immature cells, but not with mature cells. This indicates that NH3545 recognizes antigens that are specifically present in immature cells. It would be very interesting to examine the identity of the antigen molecules, functional inhibition of immaturin activity and dynamic changes in the antigen molecules during clonal aging. Detection of homologous antigens in other organisms, especially in human cells, is also an attractive experiment for the future.