

# Mating substances in *Paramecium caudatum*: preparation of mating reactive ciliary membrane fractions

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## SUMMARY

In *Paramecium*, conjugation is triggered by mixing the cells of odd (O) and even (E) complementary mating types. The first step in conjugation processes is mating agglutination, which results from cell-to-cell sexual recognition. The substances involved in this event are called mating-type substances. Indirect evidence suggests that they are intrinsic proteins of the ciliary membrane. It is hypothesized that the E substance comprises the O substance and *Mt* gene product (Tsukii, 1988). However, no report to date has described the isolation of mating-type substances. Our objectives are identification of mating-type substances and subsequent clarification of their genetic information. For this study, we prepared mating reactive ciliary membrane fractions using a new method. The banding pattern of SDS-PAGE showed that polypeptide bands of four types were detected through comparison between the E and O mating type ciliary membrane fractions. Furthermore, these fractions have the ability to induce mating agglutination. However, the ciliary membrane fractions prepared from both mating types induced mating agglutination in only the E type of living cells. A possible explanation is that the *Mt* gene product has a predisposition to separate from the mating substance complex, resulting in a change from the E type mating substance to O type.