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Identification of a set of genes expressed during induction of conjugation in the ciliate *Blepharisma japonicum*

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Conjugation in *Blepharisma japonicum* is induced by interaction between cells of complementary mating-types I and II, when they are moderately starved. Specific genes activated during conjugation, and the way they regulate these processes, are not known. To identify genes activated during conjugation, we isolated genes expressed in conjugation-induced cells by using a cDNA subtraction method. So far we have identified such genes, including CDK family genes (*cdc2, Cdk2*), a 4-hydroxyphenylpyruvate dioxygenase (*4-HPPD*) homolog, and a cyclin dependent kinase regulatory subunit (*Cks*) homolog. In this study, we newly isolated two genes that had no significant homology from conjugation-induced type-II cells. We also isolated two genes from conjugation-induced type-I cells and showed that one of them had homology to the hsp-90 family. We examined the level of expression in some of these conjugation-specific genes (*cdc2, Cks, 4-HPPD, hsp-90*) in both mating types in the logarithmic growth phase, early stationary phase and during induction of conjugation. We found that *cdc2, Cks* and the *4-HPPD* homolog were specifically expressed in starved mating type-II cells, and their expression remarkably increased during induction of conjugation. Although the *hsp-90* homolog was expressed in both mating types, under all conditions, the expression level increased in conjugation-induced cells.