

Identification of mitochondrially localized DNases in *Tetrahymena thermophila*

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SUMMARY

The ciliated protozoan *Tetrahymena thermophila* has a unique apoptosis-like nuclear degradation event during conjugation, called programmed nuclear death (PND) or nuclear apoptosis. In this process, mitochondria serve important roles to execute PND. Nucleases of at least two types derived from mitochondria are likely to be involved in different stages of PND: a nuclease which interacts with AIF and functions in the early stage, and a nuclease which works in the final resorption stage. This study presents two approaches to identify such mitochondrial nucleases, using 1) interaction with a recombinant AIF carrying His-tag and 2) SDS-DNA PAGE and mass spectrometry. Based on this information, we discuss distinct biological roles of those nucleases in PND.