Principal Researcher	Kazuyoshi Endo	**Number of Reserchers**	2
Research Institution • Department • Title	Associate Professor, Institute of Geoscience, University of Tsukuba	**Location of Institution**	Tsukuba City

Title of Project	An exhaustive exploration of the genes involved in molluscan shell formation: a primer for a genome project
Abstract of Research Project	This project aims at exploring exhaustively the genes responsible for theskeletal (shell) formation in molluscs. Aspects covered include (1) regulatory pathways to skeletogenesis, (2) control of biomineralization, and (3) genetic basis of shell morphogenesis. Each of the genes and gene products in question are subjected to expression and functional analyses so as to make clear the mechanisms of shell formation. The resulting picture of shell development will be seen in light of evolution (Evo-Devo) from both biological and paleobiological viewpoints to better understand evolutionary processes of shell morphology. Another aim of this study is to nucleate a national center for a molluscan genome project. More specifically, we use the pulmonate snail Lymanea stagnalis as a model system to carry out cDNA/EST analysis, microarray analysis, reverse genetic analyses through RNA interference and gene electroporation, as well as forward genetic analysis, to eventually find out all the genes relevant to shell formation in this species. To this end, this project is proceeded in collaboration with Dr Shigeru Kuratani of the Laboratory of Evolutionary Morphology, RIKEN Center for Developmental Biology, Kobe.
References	(1) Endo, K., Sarashina, I., and Asami, T. Lymnaea stagnalis as a Model Organism for Studies of Calcium Carbonate Biomineralization, In Kobayashi, I. (ed.) Biomineralization: formation, diversity, evolution and application, Tokai Univ. Press. (2003, in press); (2) Sarashina, I. and Endo, K. The complete primary structure of Molluscan Shell Protein 1 (MSP-1), an acidic glycoprotein in the shell matrix of the scallop Patinopecten yessoensis, Marine Biotechnology, 3, 362-369 (2001).
Term of Project	Fiscal years 2003-2007 . (5years)

Budget Allocation (in thousand of yen)	FY2003	FY2004	FY2005	FY2006	FY2007	TOTAL
	44,900	9,200	9,200	9,200	9,200	81,700

Homepage Address	None