Principal Researcher	Takashi Aoki	**Number of Researchers**	3
Research Institution • Department • Title	Professor, Graduate Course of Fisheries Sciences, Tokyo University of Fisheries	**Location of Institution**	Minato-ku, Tokyo

Title of Project	Development of DNA microarray for characterization of gene network systems of fish and shellfish
Abstract of Research Project	Microarray is a new technology that consist of hundreds to thousands of genes robotically arrayed on specially-treated glass slides. The ability to survey the expression pattern of thousands of genes at once has major implications for understanding gene networks of biological systems of live organisms. The objective of our study is the development of methods for characterization of various gene expression in different stress factors by using microarray. For microarray analysis, thousands of DNA sequence information will be necessary. Previously, we analyzed and identified expressed sequence tags (ESTs) of Japanese flounder liver, spleen , kidney, skin, and peripheral blood leukocytes (PBL) cDNAs and kuruma shrimp haemocytes. In this study, we will use these cDNAs for microarray analysis for studies on gene expression profiling of fish and shrimp 1) during development and maturation, 2) response to chemical compounds, 3) response to different environmental conditions, and 4) response fduring pathogen invasion. It is also expected that microarray analysis can be of great help in the development of a method for selective breeding of aquaculture species and in the assessment of environmental pollution, antimicrobial substances, and fish vaccines.
References	Aoki, T., B.-H. Nam, and I. Hirono (1999) Sequence of 596 cDNA clones (565,977 bp) of Japanese flounder *Paralichthys olivaceus* leukocytes infected with hirame rhabdovirus. Marine Biotechnology, 1, 477-488. Rojtinnakorn J, I. Hirono, T. Itami, Y. Takahashi, and T. Aoki (2001) Gene expression in hemocytes of kuruma prawn, Penaeus japonicus, in response to infection with WSSV by EST approach. Fish Shellfish Immunol. 13, 69-83.
Term of Project	Fiscal years 2003-2007 . (5years)

Budget Allocation (in thousand of yen)	FY2003	FY2004	FY2005	FY2006	FY2007	TOTAL
	17,200	15,900	15,900	15,900	15,900	80,800

Homepage Address	None