

Principal Researcher	Masahiro Hirama			Number of Researchers	3	
Research Institution · Department · Title	Professor, Department of Chemistry, Graduate School of Science, Tohoku University,			Location of Institution	Sendai	
Title of Project	Research on Total Synthesis of Ciguatoxins, Antibodies, and Mode of Action					
Abstract of Research Project	<p>More than 20,000 people suffer annually from ciguatera seafood poisoning in subtropical and tropical regions. The extremely low content of the causative neurotoxins, designated as ciguatoxins, in fish has hampered the isolation, detailed biological studies, and preparation of anti-ciguatoxin antibodies for detecting these toxins. The complicated and huge, 3 nanometers long, molecular structure of ciguatoxins has impeded chemists from completing their total synthesis. Our highly convergent strategic approach has enabled the first total synthesis of ciguatoxin CTX3C, which will provide the only practical supply for further studies. We are also planning to prepare anti-ciguatoxin-antibodies for detecting intoxicated ciguateric fish, and to investigate the VSSC-ligand interaction at the molecular level as well as the activation and gating mechanism of VSSC.</p>					
References	<p>Masahiro Hirama, Tohru Oishi, Hisatoshi Uehara, Masayuki Inoue, Megumi Maruyama, Hiroki Oguri, Masayuki Satake, " Total Synthesis of Ciguatoxin CTX3C " , <i>Science</i>, 294, 1904-1907, 2001.</p>					
Term of Project	Fiscal years 2002-2006. (5years)					
Budget Allocation (in thousand of yen)	FY2002	FY2003	FY2004	FY2005	FY2006	TOTAL
	18,000	17,000	17,000	17,000	17,000	86,000