

【Abstract of 2008 Grant – in – Aid for Scientific Research on Innovative Areas
(Research in a proposed research area)】

Title of project	Molecular Science of Fluctuations toward Biological Functions
Head Investigator Name	Masahide Terazima
Abstract of Research Project	Biological molecules are always fluctuating by the thermal motion even during their functions. Why can such biological molecules perform selective and efficient reactions for the functions of life? Information on static structures of these molecules is not enough to answer to this question. Studies from a view point of fluctuation and dynamics should be essential. In this research area, we create and establish a field of "fluctuation and molecular science of biological molecules" by clarifying a relationship between fluctuations and biological reactions. For this purpose, scientists in a variety of fields (physics, chemistry, pharmaceutical, medical etc.) collaborate together to develop new detection methods, regulation methods of energy and structural fluctuations, and to use fluctuations for controlling biological functions.
Term of Project: 2008–2012	