

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

<b>Title of project</b>	The physicochemical field for genetic activities
<b>Head Investigator Name</b>	Yasushi Hiraoka
<b>Abstract of Research Project</b>	Storage, expression, and inheritance of genetic information are fundamental activities for eukaryotic cells. In addition to the sequence of nucleotides, spatial organization of DNA molecules within the nucleus contains potentially important, and yet mystifying information. Such information includes physical properties, shapes, and spatio-temporal positioning of DNA and its related regulatory molecules, comprehensively providing the “physicochemical field” that ensures arranged storage, timely expression and faithful transmission of genetic materials. In this project, we analyze the structure and function of DNA and protein complexes that are formed transiently and locally within the nucleus in order to understand molecular bases of the physicochemical field. Understanding of the physicochemical field underlying the genetic activities will provide a tool to control and reconstitute various cellular functions.
<b>Term of Project: 2008–2012</b>	