

Principal Researcher	Shigeyuki Yokoyama			Number of Reserchers	1	
Research Institution • Department • Title	Professor, Graduate School of Science, The University of Tokyo			Location of Institution	Bunkyo-ku, Tokyo	
Title of Project	Structure and function of supramolecular complexes in the genetic code and cellular signaling systems					
Abstract of Research Project	<p>The genome projects of various organisms, such as human, have been completed, which shed light on the blueprints of living organisms. However, to understand biological phenomena, not only genome analyses but also elucidations of the functions and three-dimensional structures of proteins and nucleic acids, which are the products of genetic information, are indispensable. Now, structural genomics projects have propelled comprehensive structure determinations of proteins as the individual components. On the other hand, understanding higher-order biological phenomena requires visualization and comprehension of the complex states of those components, the “supramolecular complexes”, which are actually functioning in the biological system. Previously, we pursued the machineries for the maintenance and the expression of the genetic information and the cellular signaling pathways as research targets, and solved many structures of the various components by X-ray crystal structure analyses. In this project, by determining the complex structures in the supramolecular in those systems, we approach the essence of life at an atomic resolution, using X-ray crystallography techniques.</p>					
References	<p>Ishitani, R., Nureki, O., Nameki, N., Okada, N., Nishimura, S., and Yokoyama, S. (2003) “Alternative Tertiary Structure of tRNA for Recognition by a Post-Transcriptional Modification Enzyme” <i>Cell</i> 113, 383-394.</p> <p>Ogiso, H., Ishitani, R., Nureki, O., Fukai, S., Yamanaka, M., Kim, J.-H., Saito, K., Shirouzu, M., & Yokoyama, S. (2002) “Crystal Structure of the Complex of Human Epidermal Growth Factor and Receptor Extracellular Domains” <i>Cell</i> 110, 775-787.</p>					
Term of Project	Fiscal years 2003-2007 . (5years)					
Budget Allocation (in thousand of yen)	FY2003	FY2004	FY2005	FY2006	FY2007	TOTAL
	29,900	21,600	19,200	14,900	13,400	99,000
Homepage Address	http://www.biochem.s.u-tokyo.ac.jp/lab/yokoyama.html					