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## **PL-II. THE HUMAN GENOME PROJECT IN JAPAN: CURRENT STATUS AND PROSPECTS**

Nobuyoshi SHIMIZU

Department of Molecular Biology, Keio University School of Medicine, Shinjuku-ku, Tokyo 160, Japan

The human genome consists of 3 billion basepairs (bp) of DNA which are distributed on 24 different chromosomes. Mapping of the estimated 50,000-100,000 genes and sequencing of the entire human genome has become a major interest in medical genetics and human molecular biology. To achieve this goal, a complete understanding of the genetic blue print of human beings, human genome projects have been established in several different countries and the international cooperation is under way. At this congress, I have presented a brief history of the development of the human genome program in Japan and a summary of the current status of the organization and administration of the Monbu-sho (the Ministry of Education, Science and Culture: MESC) component of the genome program. The MESC's current human genome program consists of five selected topics: 1. human genome mapping, 2. human genome function, 3. DNA technology, 4. bioinformatics, and 5. nonhuman genomes. I have commented on the relationship of this pro-

gram to other governmental genome programs such as Riken project, Yoken project, Genosphere project, and the Human Frontier Science Program. I also discussed some prospects for the future directions of these programs and the applications of genome information.

As a human genome project in my laboratory at Keio University, I have presented the Keio strategy for the physical mapping and fine structure analysis of the smallest human chromosomes, 21 and 22, which contain DNA of approx. 50 Mbp. Although our work is only at the beginning stage, the Keio strategy has proven to be feasible. I have presented a number of new techniques and clone libraries which will be used for isolation of disease-related genes.

#### *Related publications*

- Sakai, K., Hirai, M., Minoshima, S., Kudoh, J., Fukuyama, R. and Shimizu, N. 1989. Isolation of cDNAs encoding a substrate for protein kinase C: Nucleotide sequence and chromosomal mapping of the gene for a human 80K protein. *Genomics* **5**: 309-315.
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