Tokushima Health And Medicine Cluster

Life Sciences IT Environment Nanotech/Materials

KNOWLEDGE CLUSTER INITIATIVE

Creating new industries in health- and medicine-related fields, by exploiting techniques for searching for disease-linked proteins and genome in collaboration with industry, academia and government

Overview

In order to create a health and medicine cluster in the Tokushima area, we wil exploit the unique protein/gene information analysis technologies of The University of Tokushima and other institutions. This Knowledge Cluster Initiative aims to create a concentration of research-support industries, in key fields (like pharmaceutical development and medical rehabilitation) which are essential in the post-genome era.

Cluster Headquarters

- ○ President ····· Kamon Iizumi(Governor, Tokushima Prefecture)
- ○ Vice President ····· Toshihiro Aono(President, The University of Tokushima)
- ○ Project Director ····· Hideaki Kohri
- ○ Chief Scientist (CS) ····· Masayuki Shibuya(Vice-president, The University of Tokushima)
- ○ Technology Transfer Director ····· Hiromu Satake(Professor, Center for Cooperative Research, The University of Tokushima)
- ○ Science and Technology Coordinators Mamoru Kubo, Hiroshi Tomita

Core Organization Tokushima Industrial Promotion Organization

Participating Research Organizations (Bold: Core Research Organization)

Industry···APRO Life Science Institute, Inc., ALOKA CO.,LTD.NEC Soft, Ltd., Otsuka Pharmaceutical Co.,Ltd. Sumitomo Precision Products Co.,Ltd., FUJITU LIMITED, Hokkaido System Science Co.,Ltd., BioSolution, Co.,Ltd.

Academia···**The University of Tokushima,** Hokkaido University

Project Director
Hideaki Kohri, *Ph.D.*

Creating a Bio-Oriented *Castle Town*

Our R&D concept is the development of technologies for searching for disease-linked proteins and genome, and the promotion of activities in related industries. These practical applications are achieved in combination with proteomics and genomics technologies.

On the proteomics side, development of a protein chip has progressed to the practical application phase, and we have filed a basic patent for a transcription chip. We have also successfully developed transcription factor detection and identification technologies which employ quantitative detection techniques and mass spectrometry. As one technology for analyzing disease proteomics, we are currently preparing to commercialize LIMS (Laboratory Information Management System, a high volume data analysis system).

On the genomics side, we have progressed to practical applications and commercialization in some parts of our lab-on-a-chip development, and some participating companies have begun to offer contract services for "*in situ* hybridization". We are getting closer to practical methods of identifying disease-susceptible genes, and our goal is to gather gene information that can be used in drug development and diagnosis.

In the future, we will have to link the development results of participating researchers, and propose interdisciplinary research topics which will stimulate synergistic effects. We also intend to cooperate with other regions as we move forward in the realization of "Proteomics Factory Tokushima."

Hideaki Kohri *is an adviser for Otsuka Pharmaceutical Factory, Inc.*

Outline of the Joint Research by Industry, Academia and Government

In the Tokushima area, our goal is to develop technologies for analyzing disease-related protein and gene information. There are two sides to this effort: the proteomics side, centered on The Institute for Enzyme Research at The University of Tokushima, and the genomics side, centered on the Institute for Genome Research at The University of Tokushima. Four joint research projects are being pursued using these two approaches.

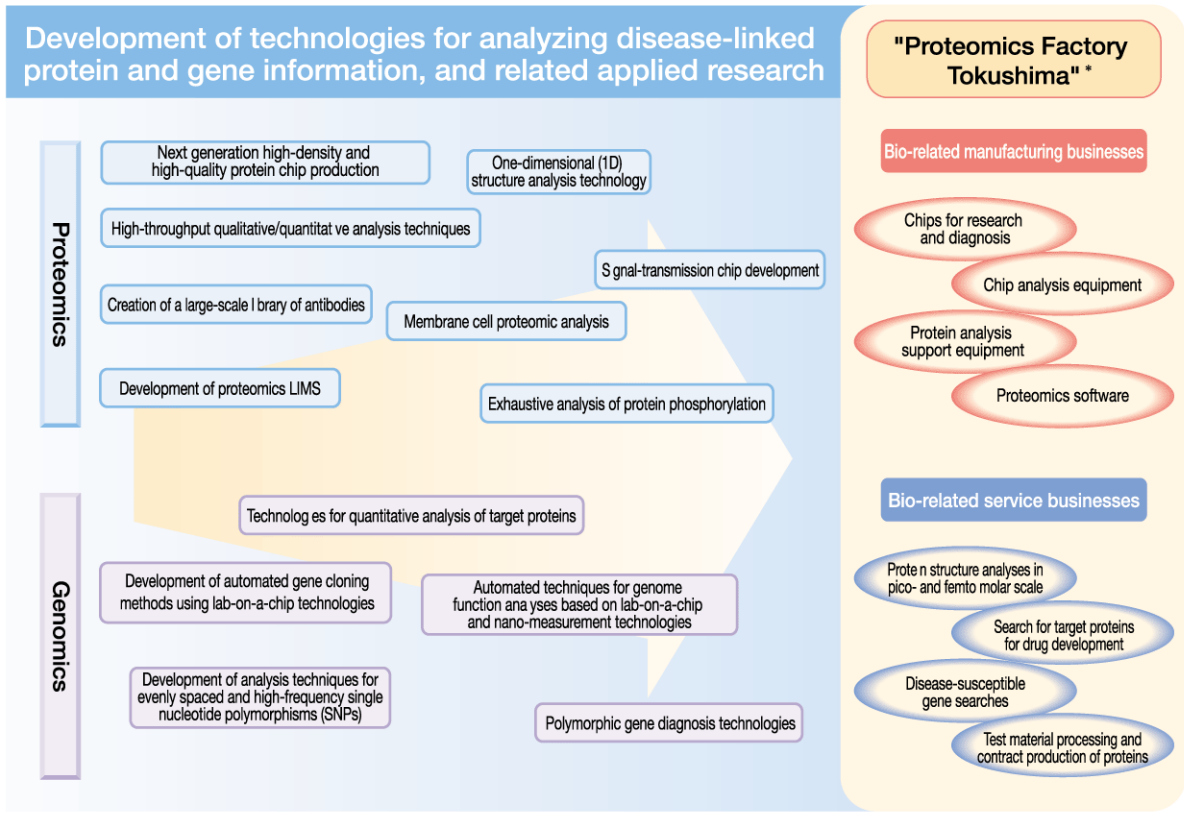
While stimulating cooperation between different fields, we shall develop chips and other analysis tools, and search for the information needed to develop new pharmaceuticals and diagnostics.

●Proteomics

- Development of high-density and high-quality protein chip technology and transcription chip technology. The transcription chip is a useful tool for identification and qualification of transcription factors which regulate gene expression. These chips will promote basic technologies in the proteomics field.
- Development of disease proteomics by mass spectrometry techniques. These technique enable us to search for new target proteins for drug development and the creation of related businesses.

●Genomics

- Development and total automation of ultra-sensitive diagnostic techniques based on nano-measurement technologies and lab-on-a-chip methods (by which technologies used in bioresearch are put together in microchannel chips made by laser machining technologies).
- Using mice and humans to elucidate the genotype that determines a constitution which is particularly susceptible to becoming diabetic. This will spur development of theories and methods regarding disease susceptible genes, as well as pursuit of new gene-targeted pharmaceuticals.



*The group of companies involved in proteomics (protein analysis) in Tokushima.