●Development Stage

(Fiscal Year 2006-2008)

# Kurume Area

Development of advanced tailor-made medical care (prevention, diagnosis and treatment) and establishment of Kurume medical bio-cluster through commercialization

Kurume Research Park Co., Ltd.
1-1 Hyakunenkoen, Kurume City, Fukuoka 839-0864 Japan
TEL: +81-942-37-6366

Life Sciences
IT
Environment
Nanotech Materials
Others

## Project Promotion

Project Director·····Keiichiro Haga
Chief Scientist·····Kyogo Itoh (Professor, Kurume University)
Science and Technology Coordinator···Yoshifumi Ikeda
Hidekazu Aratani
Other: one (1) coordinator

## Core Research Organizations

Kurume University, Kyushu University, Biotechnology & Food Research Institute of Fukuoka Industrial Technology Center

## Major Participating Research Organizations

Industry···GreenPeptide Co., Ltd, ImmunoDia Co., Ltd.,
Seitai Shigen Laboratory, Inc., Up-Well Ltd., Ito Life Science Inc.,
GNI Ltd., Omu Milk Products Co., Ltd., Chlorella Industry Co., Ltd.,
Kumamoto Flour Milling co., Ltd., NaU Data Institute Inc.,
Fukuoka Soy-Sauce Brewing Cooperation,
Fukuoka Institute of Bioindustry and Development Co., Ltd.,
ISHIKAWA IRON WORKS Co., LTD., OFFICE K Company, Ltd.,
Genenet CO., LTD., Bisoken Inc., DOJINDO Laboratories
Academia···Kurume University, Kyushu University, Fukuoka University,
University of Occupational and Environmental Health,
Kyushu Institute of Technology, Yamaguchi University,
Kyoto University, Kansai Medical University, University of Yamanashi
Government···Biotechnology & Food Research institute of Fukuoka Industrial Technology Center,
Fukuoka Forestry Research and Technology Center,
Fukuoka Agricultural Research Center

## Aim of research and development

In Kurume area, "development of tailor-made medicines & diagnostic agents as well as functional foods for prevention of diseases" were carried out for three years from FY 2003 to 2005. As a result, many achievements such as patent application, technology transfer, proto-type development and founding of venture companies from universities by enforcement of joint research led by Kurume University, were accomplished.

In this project, the development of tailor-made medical care (prevention, diagnosis, treatment) in response to individual gene and immune characteristics as well as functional foods with preventive effect on vascular lesion are carried out by the collaboration of industry-academia-government with the base of past three years' achievement done by Kurume University School of Medicine. Furthermore, the clinical development system which local biotech companies can utilize, are organized, and are finally lead to medical bio-cluster formation in Kurume.

In addition, a wide range of feasibility studies is carried out to incubate research seeds and to prove the practical use. A broad industry-academia-government networks including collaboration of medical science and engineering or agriculture are more strengthened ,and some of the studies are applied to other ministires'funds for further development.

## Contents of research

(Joint research)

1. Development of therapeutic peptide vaccine for patients with hepatitis C virus infection
   - Non-clinical studies and manufacturing examinations of tailor-made type peptide vaccine are conducted. And also, the next generation-evolutionary developments of "combination therapy of peptide vaccine/PEG-interferon/ribavirin" and "therapeutic peptide vaccine available for all patients with HCV infection are clinically studied as a translational research. In addition, this project aims at the approval submission of the external diagnostic agents as a needle-less diagnostics.

2. Development of tailor-made peptide vaccine against advanced cancer
   - This project aims at the development of tailor-made peptide vaccine against advanced cancer to expand the application of immune-activating peptide vaccine, and translational research with novel peptides including clinical trial for patients with advancing HLA-A24 positive pancreas cancer or HLA-A2 positive prostate cancer recurrence.

3. Development of novel tailor-made therapeutics for hepato-cirrhosis by using pharmacogenomics
   - The primary culture method of hepatocyte is established by using liver function of patients with hepato-cirrhosis. The gene knockdown by siRNA is conducted to make the gene expression profile libraries. In addition, this project aims at the development of tailor-made medicines for patients with hepato-cirrhosis after the implementation of non-clinical studies, especially physicochemical studies, safety studies and manufacturing examinations.

4. Screening and development of functional food with inhibitory effect on the formation of advanced glycation end-products (AGEs)
   - The vascular damage-preventive functional foods having an inhibitory activity on the intestinal absorption and formation of AGEs, especially toxic AGEs, are screened and developed. At the same time, this project aims at the development of tailor-made functional foods by using nutrigenomics technology through the screening of AGEs sensitive gene.

(Feasibility studies)

A wide variety of eight (8) feasibility studies of wide range of life science research topics is conducted on an annual basis. The studies are classified into "the seeds finding type" and "the practical use verification type".