

Kurume Area

Development of tailor-made type medicines & diagnostic agents and functional foods for prevention of diseases

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Project Promotion

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Major Participating Research Organizations

Industry... GreenPeptide Co., Ltd., ImmunoDia Co., Ltd., Ito Life Science Inc., Chlorella Industry Co., LTD., Bisoken Inc., DOJINDO Laboratories, Genenet Co., LTD., KYUSHU MEDICAL Co., Ltd., ASTEC Co., LTD., Omu Milk Products Co., Ltd., MIZUHO MEDY Co., Ltd., Central Uni Co., Ltd., Kyurin Pacell, Fukuoka Soy-Sauce Brewing Cooperation, Biocom Systems, Inc., KYUDO CO. LTD., shin nihon seiyaku Co., Ltd.
Academia... Kurume University, Kyushu University, Kyushu Institute of Technology, Fukuoka University, Nakamura Gakuen University
Government... Biotechnology & Food Research institute of Fukuoka Industrial Technology Center, Fukuoka Forestry Research and Technology Center, National Institute of Advanced Industrial Science and Technology (AIST)

Core Research Organizations

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

Aim of research and development

Kurume area aiming at the establishment of medical bio-cluster by industry-academia-government cooperation, the development of tailor-made type medicines & diagnostic agents with few risks of side effects in response to individual immune characteristic based on the newest molecular biology, are promoted. This project also aims at development of functional foods leading to prevention of a lifestyle-related disease as the core results of clinical studies in Kurume University School of Medicine. Furthermore, the joint research projects are carried out to create bio venture companies and new commercialization in local companies.

In addition, research themes leading to the commercialization in local companies were found out by science & technology coordinators, and totally eighteen feasibility studies were carried out in universities or public institutes by using advantage of Fukuoka prefecture where there are many universities of science and technology.

Contents of research

(Joint research)

1. Development of tailor-made type peptide vaccine for prevention of liver cancer recurrence
To prevent the recurrence of liver cancer by hepatitis C virus (HCV) which cause the most of liver cancer in Japan, this project aimed at the development of tailor-made peptide vaccine, which was able to treat viral hepatitis by inducing killer T cell which specifically attack HCV infected cell, by using different HCV derived antigen peptides every patients.
2. Development of new diagnostic agents and remedies against hepatitis C virus (HCV)
A part of the patient with HCV infection shifts from chronic hepatitis to hepato-cirrhosis and liver cancer. This project aimed at the development of new diagnostic method based on a specific anti-HCV peptide antibody and medicine using monoclonal antibody to realize a simple, high sensitive and low-cost diagnosis for HCV infection.

3 Development of foods for specified health use by using bio-active substances in Ganoderma lucidum

An inhibitory effect of physiologically active components specific to Ganoderma lucidum on prostate hypertrophy by inhibitory action of male hormone were confirmed and translational research was carried out for the purpose of developing the functional foods for the prevention of the hormonal diseases increasing in aging society, and this project aimed at the authorization acquisition of foods for specified health use.

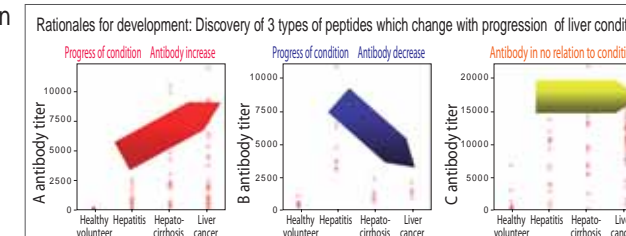
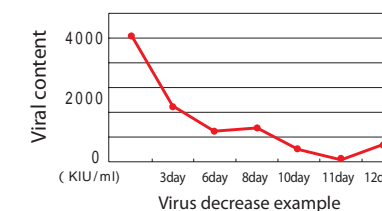
(Feasibility studies)

A wide variety of eighteen feasibility studies (annually six research themes of life science in three years) was carried out

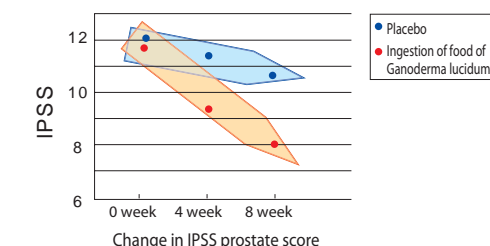
The main study results

(Joint research projects)

1. Confirmation of decrease in quantity of HCV virus and safety study with peptide vaccine (The first vaccine remedy in the world)
The peptide vaccine made progress to practical use as medicines by confirming decrease in virus contents and safety by clinical study. As a result, venture company from university was established.
2. Practical use of the diagnosis kit for HCV infection and prediction of condition of patient's progression.
As anti-peptide antibodies specific for HCV infection and antibodies related to condition of a patient's progression were discovered, a university-launched venture company was established for practical use of the diagnostic agents of infection diagnosis and prognosis predictability.
3. Confirmation of a dysuria improvement effect of functional foods from Ganoderma lucidum by clinical study and planning the commercialization.
A dysuria improvement effect and safety of functional foods from Ganoderma lucidum were confirmed by clinical study for volunteers, and both non-clinical and clinical studies were almost completed. The sales as a health food and application of food for specified health use are planned.



Peptide antibodies which change with progress of liver condition



(Feasibility studies)

Many feasibility studies were carried out and the development of new small interfering RNA (siRNA) transfer agents were almost accomplished. The technology to extract lactoferrin from raw milk was established, and finally obtained lactoferrin and its derivative apolactoferrin were succeeded in practical use as functional foods or cosmetics. As the result of this study, venture companies were established from university.

