

The 21st century COE (Center of Excellence) Program
"Advanced approach to personalized medicine based on oriental philosophy"
 (東洋の知に立脚した個の医療の創生)

The 21st century COE (Center of Excellence) Program is the grant to form a global research base in specialized and high potential fields supported by the Ministry of Education, Culture, Sports, Science and Technology of Japan (文部科学省). In 2003, from Toyama Medical and Pharmaceutical University, the research titled "Advanced approach to personalized medicine based on oriental philosophy" was selected for COE program.

Institute of Natural Medicine (和漢薬研究所) and Graduate School of Medicine (especially Department of Japanese Oriental Medicine: 和漢診療学講座) are positioned as a COE in Japan for the research and education of traditional medical and pharmaceutical sciences with foreign universities and research institutes.

Project Leader: Katsutoshi Terasawa (Professor, School of Medicine)

Project Members: (Institute of Natural Medicine) Masao Hattori, Ikuo Saiki, Katsuko Komatsu, Kinzo Matsumoto, Tadato Tani; (Graduate School of Medicine) Seiji Hayasaka, Ichiro Kato, Sigeru Saito, Yutaka Shimada, Masahiko Toyoda, Koichi Tsuneyama; (Graduate School of Pharmaceutical Sciences) Yasushi Kuraishi

Project Summary:

1. Clinical study for diagnosis and molecular basis of personalized medicine based on oriental philosophy

Holistic patterns of symptom and individual pathogenic alterations, so called "Sho (証)" diagnosed by Kampo medicine (漢方医学), are investigated by proteomics using plasma of patients with different disease states. It is one of the strategies to study "Oketsu (瘀血)", a state of insufficient blood circulation and blood stasis resulting in autoimmune, allergic inflammatory and thrombopoietic diseases, for the purpose of understanding and establishing the personalized medicine.

2. Basic study on pathogenesis and molecular mechanism of various diseases to achieve the personalized medicine.

It is important to investigate the expression of genes associated with various diseases including rheumatoid arthritis and atopic dermatitis, in order to clarify the scientific basis of Kampo medicine. The production of knock-in and knock-out animals leads to a specific characterization of the constitution (responder/non-responder) for Kampo medicines. Biochemical and molecular studies of "Oketsu" are performed based on the characters such as blood rheology and NO responsiveness. It is necessary to introduce the bio-informatics for clinical study on time-relapse state of diseases.

3. Basic study on traditional medicines (ethnomedicines):

Sources, qualities, use and effects of traditional medicinal resources in the world are examined. The database on traditional drugs and their formulations is constructed.

The goals of the project of Toyama Medical and Pharmaceutical University COE program are to construct personalized medical treatment based on both western and oriental philosophy, to maintain useful traditional medical resources and to use them efficiently.