Plant Inventory Research Aimed at Discovery and Detailed Chemical and Biological Activity Analysis of Medicinal Resources

Project Leader
WATANABE Takashi, Dr. Pharm.
Professor, Complementary Medicine and Pharmacological Engineering

Faculty Members Involved in this Project
WATANABE Takashi, Dr. Pharm.
Professor, Complementary Medicine and Pharmacological Engineering

1. Objective

This project is aimed at:

Our project aims to identify useful plants that can be expected to have pharmacological effects related to incurable diseases and lifestyle-related diseases through searches of the plant inventory during next five years in the rich biodiversity region of plants. We have investigated over 5,000 species of vascular plants from subalpine, temperate, and tropical regions, and have conducted interviews about the use of medicinal plants as a complementary medicine in developing countries. This study will be focused on the development of a system of new activity assessment and safety evaluation using the LUPINES* platform, which combines resources including the plant database and GIS.

*abbreviated Local Useful Plants with Intelligent Networks of Exploring Surface

2. Project Outline

To that end, the project will consist of the following phases:

(a) Conducting an inventory of rare plant resources by GIS (Geographic Information System), and evaluating their of usefulness and safety as complementary medicines in the plant rich zone
(b) Conducting a study of the correlation between the growth environment and the genetic characteristics of plant resources in a regional vegetation system
(c) Evaluation of chemical constituents and bio-activity of clinically important materials obtained from plant resources

3. Expected Performance

In this project, the successful candidate would be expected to:

(a) Work independently with the plant inventory system to discover potential natural medicine resources
(b) Perform chemical analyses and bioactivity evaluations of important medicinal resources
(c) Support the health industry with the development/design/creation/testing of supplements as support for resistance to lifestyle-related diseases
(d) Monitor the safety of food and supplements

4. Required Skills and Knowledge

The successful candidate for this project will have the following knowledge and skills:

(a) Knowledge of the basic GIS system, plant inventory and social research
(b) Human relations skills for the inventory of plant resources in communication with local stuff in the field

work

(c) Basic knowledge of soil analysis, chemical analysis and bioactivity analysis procodures

References

1) Takashi Watanabe, Ryosuke Murai, Hari Prasad Devkota, Shoji Yahara and Zabta Khan Shinwari, Overseas CSR Model for the Social Development using Medicinal Plant Resources through Botanical Inventory, *Journal of Society for Social Management Systems 2012,* Serial No. SMS12-9548, 1-9., 2012.
* http://management.kochi-tech.ac.jp/?content=ssmspaper

2) Takashi Watanabe, Stephan William Gale, Minoru Okada, Patterson Tofu, Fred Pitisopa and Tetsuo Koyama, Plant Inventory Research in the Solomon Islands, with Special Reference to Medicinal Plant Resources (1) The Use of Medicinal Plant Resources in Complementary Medicine by Custom Doctors on Malaita Island, *Journal of Japanese Botany,* **85**(1) 30-45. , 2010.

3) Khem Raj Josh, Hari Prasad Devkota, Takashi Watanabe and Shoji Yahara (2013), Thotneosides A, B and C: Potent Antioxidants from Nepalese Crude Drug, Leaves of *Aconogonon molle*, *Chemical and Pharmaceutical Bulletin*, *in press*

4) Hari Prasad Devkota, Masato Watanabe, Takashi Watanabe, and Shoji Yahara (2013), Diplomorphanins A and B: New C-Methyl Flavonoids from *Diplomorpha canescens, Chemical and Pharmaceutical Bulletin*, **61**(2) 242–244.

See our admission guidelines:
http://www.kochi-tech.ac.jp/kut_E/graduate/admission.html

Contact

E-mail: watanabe.takashi@kochi-tech.ac.jp