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The Annual Report is published to record the activity of the International Center for Biotechnology (ICBiotech) and issued once in each fiscal year. It contains scientific articles, progress reports, letters, and announcement from the Center. This volume includes publications by the former participants in UNESCO courses. The editor welcomes the submission of appropriate articles from all persons who are concerned with the activity of the Center. All the contributions, however, will be reviewed by editors before their acceptance. The scientific paper herein should be treated as personal communications and not treated as original publications. The Annual Report is distributed upon request to the International Center for Biotechnology, Osaka University, 2-1 Yamadaoka, Suita, Osaka 565-0871, Japan (e-mail: info_icbio@icb.osaka-u.ac.jp).

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ACTIVITIES OF ICBiotech

ACTIVITIES OF INTERNATIONAL CENTER FOR BIOTECHNOLOGY FOR FY2013

The International Center for Biotechnology (ICBiotech) was founded in April 1995 as an independent institute in Osaka University with a mission to pursue academic advancement and collaborative research in biotechnology. ICBiotech has its origin from the “International Center of Cooperative Research Center in Microbial Engineering Japan (ICME)” which was established in the Faculty of Engineering, Osaka University in April 1978, through renaming to “International Center of Cooperative Research in Biotechnology (ICBiotech)” in April 1985 with the recognition of the wide acceptance and success of ICME’s activities and achievements.

ICBiotech is dedicated to promote international cooperation among Asian countries in the aspects of research and educational advancement in the field of Biotechnology by propelling academic interactions in Asian countries, and is committed to industrial biotechnology studies by means of microbial engineering and related sciences, focusing on the sustainable utilization of abundant natural resources in Southeast Asian countries.

ICBiotech serves as the seat of education and research in Asia, with the support of the Ministry of Education, Culture, Sports, Science and Technology (Monbu-kagaku-sho, MEXT), the Japan Society for the Promotion of Science (JSPS), the Japan Science and Technology Agency (JST), the Japan Student Service Organization (JASSO), and the auspices of the United Nations Educational, Scientific and Cultural Organization (UNESCO), with the cooperation of Department of Biotechnology, Graduate School of Engineering, Osaka University, and researchers from prestigious universities nationwide and abroad.

In 2002 Mahidol University-Osaka University Collaborative Research Center for Bioscience and Biotechnology: MU-OU:CRC was set up at Faculty of Science, Mahidol University as a collaborative research center to accomplish multidisciplinary research in the field of Bioscience and Biotechnology.

The activities of the ICBiotech include:

1. Research and Education

The main area of research is industrial biotechnology rooted in microbial engineering, whilst centering on the sustainable use of agricultural and forest resources in bioresource-rich countries such as those in Southeast Asia. Research is underway in the field of cell engineering with the objectives of analyzing the cellular functions of bacteria, fungi and plants, and developing and using functions of these cells for management and rational use of biological resources that exist on our planet. ICBiotech covers three areas of Biotechnology:

- 1) Discovery of new functions from biological resources.
- 2) Bio-conversion and process engineering of biological resources.
- 3) Conservation of biological resources.

For under graduate and post graduate courses, ICBiotech is involved in the education activities of Department of Biotechnology, Graduate School of Engineering as collaborating laboratories and currently covers several fields of biotechnology in education and research: Molecular Microbiology laboratory chaired by Prof. Takuya Nihira and Applied Microbiology laboratory chaired by Prof. Kazuhito Fujiyama.

2. Participating in FrontierLab@OsakaU 'Scientific Empowerment Program for International Students' which was created for international students to conduct thematic studies and achieve results under the guidance of supervisors while acquiring skills necessary for continuing research in one of Osaka University's internationally renowned science and technology laboratories for a period of up to 12 months.
3. Acting as collaborating laboratories with Department of Biotechnology, Graduate School of Engineering, Osaka University for 'International Program of Frontier Biotechnology', a five-year program for master's and doctor's degrees. The aim of this program is to expose graduate students (privately financed as well as the Japanese Government Scholarship students) to state-of-the-art research skills and in-depth knowledge of advanced biology, chemistry and physics to harness the potential of biotechnology.
4. Having been administrating and implementing the "UNESCO Biotechnology School in Asia" (2012-) at Department of Biotechnology, Graduate School of Engineering, Osaka University, taking over the long-termed "International Post-Graduate University Course in Microbiology" (1972-2003) and Postgraduate Inter-University Course in Biotechnology (2004-2007) with total of 459 alumni spreading all over Asia.
5. Undertaking a JSPS Asian CORE Program entitled as 'Next-Generation Bioproduction Platform Leveraging Subtropical Microbial Bioresources'. This project aims to develop next-generation bioproduction platform by interaction between excellent researchers from Japan, Thailand, Vietnam, Laos and Cambodia, together with fostering young researchers from those countries for future in the field of industrial biotechnology. The program is based on the result from preceding MEXT/JST project carried out in FY2006-2008, which took over the termination in 2004 of the JSPS multilateral program in the field of biotechnology.
6. Involving as a research group at Japan side for a JICA-JST Project in Thailand: Thailand-Japan Collaboration for the Research and Development of Therapeutic Products against Infectious Diseases. The Research Institute for Microbial Diseases (RIMD), Osaka University, acts as the Japanese host coordinator for the project. The Project is implemented under the "Science and Technology Research Partnership for Sustainable Development (SATREPS)" promoted by Japan International Cooperation Agency (JICA) and JST in collaboration.
7. Serving as the secretariat for the UNESCO Regional Network for Microbiology and Biotechnology in Southeast Asia in accordance with a proposed memorandum resulting from a Consortium Meeting of the Project "Tropical Bio-Resources and Green Chemistry Strategy" (Osaka 2003).
8. Working as a member of the global network "Microbiological Resource Centers" (MIRCENs) operated by UNEP, UNESCO and ICRO; and as an original member of the "Regional Network for Microbiology in Southeast Asia" operated under the auspices of UNESCO through the Fund-In-Trust of the Japanese Government (J-FIT).

9. Promoting international cooperative researches in biotechnology with the Southeast Asian countries related to Biotechnology, under the support of Monbu-kagaku-sho Grant-in-Aids for International Scientific Research. In addition, ICBiotech cooperates in developing international organization and conducting academic seminars related to biotechnology.

10. Publishing Annual Reports of ICBiotech periodically.

Steering Committee

Chairman Prof. Takuya Nihira (Director of ICBiotech)

Committee Members

Prof. Kazuhito Fujiyama (ICBiotech)
Prof. Satoshi Harashima (Graduate School of Engineering)
Prof. Shigenori Kanaya (Graduate School of Engineering)
Prof. Eiichiro Fukusaki (Graduate School of Engineering)
Prof. Tsuyoshi Inoue (Graduate School of Engineering)
Prof. Kazumasa Hirata (Graduate School of Pharmaceutical Sciences)
Prof. Masahito Taya (Graduate School of Engineering Science)
Prof. Toshihiro Horii (Research Institute for Microbial Diseases)

Staff

Director/Professor	Dr. Takuya Nihira
Professor	Dr. Kazuhito Fujiyama
Adjunct Professor	Dr. Michihiko Ike (Department of Environmental Engineering)
Collaborative Professor	Dr. Amaret Bhumiratana (Mahidol University, Thailand) Dr. Watanalai Panbangred (Mahidol University, Thailand) Dr. Skorn Mongkolsuk (Mahidol University, Thailand)
Visiting Professor	Dr. Toshiomi Yoshida (Osaka University) Mr. Junji Tayama (Osaka University)
Visiting Associate Professor	Dr. Michiho Ito (Kyoto University)
Visiting Research Scholar	Dr. Choi Un-Suk (Kyungnam University, Korea) Dr. Niran Roongsawang (BIOTEC, Thailand)
Associate Professor	Dr. Shigeru Kitani
Lecturer	Dr. Ryo Misaki
Assistant Professor	Dr. Hiroshi Kinoshita Dr. Takao Ohashi
Administrative Official	Ms. Nozomi Yokoi
Administrative Assistant	Ms. Fumiko Tomomatsu Ms. Yukiko Seto Ms. Chiyoko Katayama
Technical Assistant	Ms. Shizuka Kawakami Ms. Hitomi Yumioka



**Completion of new building,
International Research Complex for Biotechnology**

May 20, 2013

The renovation of old ICBiotech building and construction of new building have completed. ICBiotech has moved to the newly built building from May 20, 2013. Now the newly built building is named α building and renovated building is named β building. ($\alpha+\beta$ complex, 4,100 m²), and moving-in from the 1978-established old building (1,000 m²). The Complex is a major base for 2 existing laboratories, collaborative laboratories, Research Alliance Laboratories, and Center for International Affairs in Graduate School of Engineering, so that the stage is set for planning and operating more productive international exchange programs. Opening Ceremony was held on August 2, 2013 at Icho Kaikan, Osaka University.

I. COOPERATIVE RESEARCH STATION (CRS) IN SOUTHEAST ASIA

The ICBiotech, Osaka University launched out the Cooperative Research Station (CRS) in Southeast Asia at Chalermprakiat Building, Faculty of Science, Mahidol University in 2002 through the generous support by Mahidol University. The CRS' space and equipments are made available for Southeast Asian and Japanese researchers to undertake cooperative onsite researches on the development of the abundant natural biological and genetic resources and their sustainable utilization in Southeast Asian countries through JSPS core university program (ended in 2005), JST Special Coordination Funds for Promoting Science and Technology (2006-2009) and JSPS Asian CORE Program (2009-2014). The CRS also functioned as a lecturing and research station of the UNESCO International Post-graduate Inter-University program, which Osaka University operated in coordination with Thai universities. The CRS is considering support to the alumni of Osaka University and provision of university information for recruitment of students for study in Osaka University.

Mahidol University (MU) and Osaka University (OU) together established the Mahidol University-Osaka University Collaborative Research Center (MU-OU:CRS) for Bioscience and Biotechnology at Faculty of Science, Mahidol University in 2002, to strengthen the research cooperation in these fields which are amongst the most active fields of study and research in both universities.

Currently, MU-OU:CRS has co-ordinated a research projects under the jointly support of National Research Council of Thailand (NRCT), National Center for Genetic Engineering and Biotechnology (BIOTEC) and The Japan Society for the Promotion of Science (JSPS). Researchers from Mahidol University, Chulalongkorn University, Kasetsart University, King Mongkut's University of Technology Thonburi and BIOTEC participate in this project.

CRS is conducting researches on

1. Strain improvement of *Bacillus thuringiensis*.
2. Screening of actinomycetes for bioactive compound.
3. The soil metagenome for screening of potential polysaccharide-degrading enzymes.
4. Cell culture system for screening of bioactive compounds from Streptomycetes and environmental fungi.
5. Quorum sensing interference: Novel biocontrol strategies for pathogenic bacteria.

II. UNESCO COURSES

"UNESCO International Post-Graduate University Course in Microbiology" (1973-2003) plus the "UNESCO Postgraduate Inter-University Course in Biotechnology" (2004-2007) was one of the two long-term training courses held in Japan launched in response to the recommendations concluded at a UNESCO General Conference Meeting. After the operation of 33 batches for developing human resources in Asia, total 459 young researchers from all over Asian countries are now playing active and leading roles in current biotechnology research and education in the region to contribute to the development of their own country, and consequently to Asian countries, and the establishment of the closer and stronger network in the region.

1. UNESCO Training Project – One-month Lab Revisit Program

This project was conducted in July-September 2013, under the Official Development Assistance Grants for UNESCO Activities of MEXT, based on the result of the Conference Series. Participants were alumni of the previous UNESCO courses on Microbiology and Biotechnology, or those nominated by the senior alumni in their home laboratories.

Purpose

1. To provide the opportunity for the alumni and related young researchers to visit laboratories in Japanese universities to be exposed to leading-edge of research, to upgrade research skills, and to facilitate exchange of researchers.
2. To rebuild the networks among researchers between Japan and Asian countries in the field of biotechnology.
3. To strengthen the network among the alumni of our UNESCO courses beyond generations and countries.

List of Participants (FY2013)

Group A (Stayed July 31- Sep. 5, 2013)

Name	Country	Affiliation	Host University	Past UNESCO Course
Jigjiddorj Enkh-Amgalan	Mongolia	Mongolian Academy of Sciences	Prof. Fujiyama, Osaka U	UM25
Ju Chu	China	East China U of Sci. and Technol.	Prof. Atomi, Kyoto U	UM18
Mohammad Riazul Islam	Bangladesh	U of Dhaka	Prof. Sonomoto, Kyushu U	UB01
Merkuria Karyantina	Indonesia	Slamet Riyadi U	Prof. Fujiyama, Osaka U	Nominated by Dr. K. Rahayu (UM02)
Chaiyong Koaykul	Thailand	KMUTT	Prof. Kino-oka, Osaka U	Nominated by Dr. A. Khantachawana (UO02)
Patipark Kueanjinda	Thailand	Chulalongkorn U	Prof. Kino-oka, Osaka U	Nominated by Dr. S. Chanprateep (UM25)
Noppon Lertwattanasakul	Thailand	Kasetsart U	Prof. Fujiyama, Osaka U	UNESCO Thai Committee
Sarintip Sooksai	Thailand	Chulalongkorn U	Prof. Nihira, Osaka U	UM20
Panlada Tittabutr	Thailand	Suranaree U	Prof. Minamisawa, Tohoku U	Nominated by Dr. N. Teaumroong (UM17)

Group B (Stayed July 31- Aug. 11)

Name	Country	Affiliation	Host University	Past UNESCO Course
Anggraini Barlian	Indonesia	ITB	Prof. Kino-oka, Osaka U	UNESCO Indonesian Committee
Sofia Mubarika Haryana	Indonesia	Gadjah Mada U	Prof. Fujiyama, Osaka U	Nominated by Dr. D. Widiyanto (UM18)
Fidel Rey P. Nayve Jr.	Philippines	BIOTEC, UPLB	Prof. Nihira, Osaka U	Nominated by Dr. R. Ehora (UM15)

Thao Kim Nu Nguyen	Vietnam	VNU	Prof. Nihira, Osaka U	Nominated by Dr. D. V. Hop (UM15)
Savitr Trakulnaleamsai	Thailand	Kasetsart U	Prof. Fujiyama, Osaka U	UM17

UM: International Post-Graduate University Course in Microbiology

UB: Postgraduate Inter-University Course in Biotechnology

Schedule

July 31	<i>Arrival</i>
August 1	Paperwork, Self-introduction, Special lecture by Dr. Sumida (JBA), Lab tour
August 2	Opening ceremony, Tour of International Research Complex for Biotechnology, Interactive with Osaka U Students
August 3	JSPS-NRCT Joint Symposium, Reception dinner
August 4	JSPS Asian CORE Program YSS2013 Osaka
August 5	JSPS Asian CORE Program YSS2013 Osaka, JSPS Vietnam-Japan Workshop
August 6	<i>Move to assigned laboratory/professors</i> (Group B)
August 9	Submission of final report, Presentation of activities
August 11	<i>Go back to home country</i> (Group A)
September 3	<i>Move back to Osaka U</i>
September 4	Submission of report, Presentation of training activities, Interactive activities with Osaka U students
September 5	<i>Go back to home country</i>

2. UNESCO Biotechnology School in Asia (JFIT Project)

The “UNESCO Biotechnology School in Asia” was launched in October 2012. This program is an activity of the “UNESCO Extra-budgetary Program for Human Resources and Research Network in Sciences and Technology” supported by the Japanese Fund-In-Trust (JFIT). The course is a program of the scientific training for young Asian university-graduates in the field of Biotechnology and related areas resulting in achieving master degree, and the participants are expected to make significant contributions to an educational or scientific institution in the coming years in their home countries. It aims also to strengthen the network activities among the biotechnology scientists in the region.

Opening Ceremony of the UNESCO Biotechnology School in Asia

August 2, 2013 from 9:00 am, at Ichō Kaikan, Osaka University

Opening	Prof. Takuya Nihira	(Director, ICBiotech)
Welcome address	Dr. Toshio Hirano	(President, Osaka U)
Address	Dr. Hubert Gijzen	(Director, UNESCO Jakarta)
Address	Ms. Taka Horio	(Assistant Secretary General of Japanese National Commission for UNESCO, MEXT, Japan)
Address	Prof. Dr. Djoko Santoso	(Director General, Ministry of Education and Culture,

Government of Indonesia)

Address H.E.Mr. Thanatip Upatising (Ambassador, Royal Thai Embassy)
 Address Prof. Sakarindr Bhumiratana (President, KMUTT, Thailand)
 Address Ms. Maria Teresa L. Taguiang (Consul General, Philippine Consulate General)
 UNESCO Postgraduate Course: History and Future Prof. Takuya Nihira
 Self-Introduction 11 UNESCO Participants
 Closing Prof. Watanalai Panbangred (Mahidol U, Thailand)
 Photo session

List of 1st cohort students (Aug/Oct 2012 - July/Sep 2014)

Nationality	Name	Allocated University	Assigned Supervisor
Cambodia	Sivlin Ung	KMUTT, Thailand	Dr. Kanokwan Poomputsa
Cambodia	Yanvary Chhon	KMUTT, Thailand	Dr. Paitip Thiavetyan
Cambodia	Mab Ban	Mahidol U, Thailand	Dr. Manop Supantharika
Cambodia	Darith Sieng	Mahidol U, Thailand	Dr. Chuenchit Boonchird
Laos	Phongphayboun Phonepaseth	Chulalongkorn U, Thailand	Dr. Ekawan Luepromchai
Laos	Souphaline Liko Soulyavong	ITB, Indonesia	Dr. I Nyoman P. Aryantha
Vietnam	Ngoc Quang Truong	Kasetsart U, Thailand	Dr. Savitree Limtong
Thailand	Chalisa Jaturapaktrarak	Osaka U, Japan	Dr. Hisao Ohtake
Indonesia	Fitria Ayuningtyas	Osaka U, Japan	Dr. Masahiro Kino-oka
Philippines	Mark Anthony Alfredo Badua	Osaka U, Japan	Dr. Satoshi Harashima
Indonesia	Dwi Purno Widekdo	Osaka U, Japan	Dr. Kazuhito Fujiyama

Schedule

July 29	Self-introduction
July 30	Presentation: Frontier Biotechnology course
July 31	“Yeast genetic resources and yeast biology” (Prof. Kaneko, Dr. Maekawa) “How can biotechnology be used for sustainable use and better production of special plant products in tropical Asia” (Dr. Ito) “Urban environment and sustainability issues-discussions from Asian perspectives” (Dr. Hara)
August 1	“Research cooperation in compliance with the convention on biological diversity” (Dr. Sumida, JBA)
August 2	Opening ceremony, Interactive activities with Osaka U students
August 3	JSPS-NRCT Joint Symposium
August 4	JSPS Asian CORE Program YSS2013 Osaka
August 5	JSPS Asian CORE Program YSS2013 Osaka, JSPS Vietnam-Japan Workshop
August 6	Factory visit (Shimadzu Co.), Cultural visit (Prof. Fukusaki)
August 7	Biochemical Eng. and Process Eng. (Prof. Yoshida), Introduction of advanced experimental technique (Dr. Misaki)
August 8	Overview on ASEAN bio (Prof. Yoshida) “Contribution to the future by Shimadzu new technology”, “Shimadzu LCMS product portfolio” (Mr. Hirano, Shimadzu Co.)
August 9	Introduction of Ms research / Closing ceremony

III. JSPS ASIAN CORE PROGRAM: NEXT-GENERATION BIOPRODUCTION PLATFORM LEVERAGING SUBTROPICAL MICROBIAL BIORESOURCES (FY2009-2013)

Following the termination of the JSPS multilateral program in the field of Biotechnology under the framework of Core-University System conducted for the past 27 years since 1978, a scheme of collaboration of Japan Science and Technology Agency (JST) was carried out in FY2006-2008 as a program of “Solution of Research Issues Shared by Asian Region” under the framework of “Asian Science and Technology Cooperation Promotion Strategy” supported by the Special Coordination Funds for Promotion of Science and Technology (SCF) of MEXT.

This project aims to develop next-generation bioproduction platform by interaction between excellent researchers from Japan, Thailand, Vietnam, Laos and Cambodia, together with fostering young researchers from those countries for future in the field of industrial biotechnology.

1. Purpose

Based on the result from preceding MEXT/JST project carried out in FY2006-2008, the project area is expanded widely to Thai neighbouring countries (Vietnam, Laos and Cambodia) in addition to Thailand, and research exchange will be carried out focusing on development of bioproduction platform using microbes.

Thailand, Vietnam, Laos and Cambodia belong to countries having subtropical climate, and thus have abundant bioresources, such as agro/marine resources. Especially, microbial resources as invisible bioresources are highly abundant, possessing diverse array of unexplored microorganisms which are not present in Japan. These novel useful bioactive compounds (such as antibiotics and bacteriocins), producers of useful industrial enzymes (phytase of soft biomass degrading enzymes), whole-cell catalyst to produce bioethanol or sugars through degradation of soft biomass or the biocatalyst replacing present toxic inorganic catalyst in industrial processes in converting hydrophobic compounds. On-site bioproduction platform using Southeast Asian bioresources is essential as the next-generation fundamental technology. This project aims to develop next-generation bioproduction platform by interaction between excellent researchers from Japan, Thailand, Vietnam, Laos and Cambodia, fostering young researchers from those countries for future in the field of industrial biotechnology.

2. Outline of Implementation System

Japanese academic consortium was formed from professional academic staffs belonging to top five Japanese universities (Osaka University, The University of Tokyo, Hokkaido University, Kyushu University and Toyama Prefectural University) who are excellent in several steps of industrial biotechnology. Similarly, Thai academic consortium was formed from representative researchers in the field of biotechnology from Thai top 4 universities (Mahidol University, Chulalongkorn University, Kasetsart University, and King Mongkut's University of Technology Thonburi) and BIOTEC (National Center for Genetic Engineering and Biotechnology). The international collaboration will be performed between the Japanese consortium and the Thai consortium to design and establish efficient way in the utilization of bioresources.

Major Members Involved in the Asian CORE Project (FY2009-2013)

Coordinator: Prof. Takuya Nihira (ICBiotech, Osaka University, Japan)

Counterpart country and core organization:

Prof. Watanalai Panbangred (Mahidol University, Thailand)

Dr. Duong Van Hop (Vietnam National University, Hanoi, Vietnam)

Mr. Hang Chan Thon (Royal University of Phnom Penh, Cambodia)

Mr. Sokunthia Thao (Royal University of Phnom Penh, Cambodia)

Dr. Sundara Souriuodong (BEI, Laos)

Research Area:

*Low Mr bioactive compounds

Japan: Takuya Nihira (Osaka U), Yasuhiro Igarashi (Toyama Pref. U), Kenji Sonomoto (Kyushu U), Kazumasa Hirata (Osaka U)

Thailand: Watanalai Panbangred (Mahidol U), Wonnop Visessanguan (BIOTEC)

Other countries: Duong Van Hop (Vietnam National U, Vietnam), Sokunthia Thao (Royal U Phnom Penh, Cambodia), Souriodong Sundara (BEI, Laos)

*Industrial enzymes

Japan: Kazuo Sakka (Mie U), Koso Asano (Hokkaido U)

Thailand: Khanok Ratanakhanokchai (KMUTT), Vithaya Meevootisom (Mahirol U)

*Yeast strain improvement

Japan: Satoshi Harashima (Osaka U), Kazuhito Fujiyama (Osaka U), Eiichiro Fukusaki (Osaka U)

Thailand: Chuenchit Boonchird (Mahidol U), Savitree Limtong (Kasetsart U)

*Whole cell catalyst

Japan: Hisao Ohtake (Osaka U), Yasuo Igarashi (U Tokyo, 2009-2012), Masaharu Ishii (U Tokyo, 2013)

Thailand: ThunyaratPongtharangkul (Mahidol U), Alisa Vangnai (Chulalongkorn U), Verawat Champreda (BIOTEC)

3. Seminar and Symposium

JSPS-NRCT Joint Symposium (JS) and Young Scientist Seminar (YSS) in Osaka on August 3-5, 2013 and Symposium in Vientiane on January 13, 2014 were held respectively.

JSPS-NRCT Joint Symposium on Bioproduction Platform August 3, 2013 at Suntory Memorial Hall, Osaka University

Opening remark	Director, ICBiotech	Takuya Nihira
Address	Associate Dean, Osaka U	Toshihiro Tanaka
Address	Director-General, NRCT	Soottiporn Chittmittrapap
Address	Director, International Program Dept., JSPS	Hisashi Kato

1. Application of whole-cell matrix-assisted laser desorption ionization-time of flight mass spectrometry (MALDI-TOF MS) for rapid screening of novel bacteriocins
(**Amonlaya Tosukhowong**, Wonnop Visessanguan, Sittiruk Roytrakul, Takeshi Zendo, Janthima Jaresitthikunchai, Laphaslada Pumpuang, Kenji Sonomoto)
2. Isolation and structural elucidation of natural bioactive compounds from Thai microorganisms
(**Takuya Nihira**, Shigeru Kitani, Yasuhiro Igarashi, Watanalai Panbangred)
3. Current research on screening bioactive compounds from bacteria and actinomycetes at VTCC
(**Duong Van Hop**, Nguyen Kim Nu Thao, Nguyen Quynh Uyen, Nguyen Phuong Hien, Bui Thai Hang, Phan Thi Phuong Hoa, Hiroshi Kinoshita, Takuya Nihira, Kenji Sonomoto, Yasuhiro Igarashi)
4. Phytases and polysaccharide hydrolases from microbes and metagenomes
(Duangnate Isarangkul, Patcharaporn Pandee, Jitsupang Rodbumrer, Kenneth Gregory Anthony van Driel, Pijug Summpunn, Jirapan Chaichanan, Podchane Usook, Hind Hameed Khudhair, Suthep Wiyakrutta, Poramaet Laowanapiban, Kevin Sherman, Midori Otani, Escobin-Mopera L., Teruo Sone,

- Kozo Asano**, Vithaya Meevootisom)
5. Overview of *Paenibacillus curdlanolyticus* B-6 cellulolytic/xylanolytic system: A novel multienzyme complex for biomass utilization
(**Kazuo Sakka**, Makiko Sakka, Tetsuya Kimura, Yuh Shiwa, Hirofumi Yoshikawa, Akihiko Kosugi, Rattiya Waeonukul, Patthra Pason, Chakrit Tachaapaikoon, Khanok Ratanakhanokchai)
 6. Screening and characterization of oleaginous yeasts for lipid production from crude glycerol
(**Savitree Limtong**, Pirapan Polburee, Wichien Yongmanitchai, Takao Ohashi, Kazuhito Fujiyama)
 7. Breeding of superior yeast strains displaying multiple stress tolerance for cost-effective bioethanol production
(Chuencit Boonchird, Thipa Asvarak, Choowong Auesukaree, Yu Sasano, Hiromi Maekawa, Minetaka Sugiyama, Yoshinobu Kaneko, **Satoshi Harashima**)
 8. Biocatalysis in organic solvent -Development of whole-cell biocatalysts for production of water-insoluble chemicals
(**Kohsuke Honda**, Thunyarat Pongtharangkul, Alisa S. Vangnai, Pranee Inprakhon, Jirarut Wongkongkatep, Hisao Ohtake)
 9. Comparative metagenomic analysis of microcosm structures and lignocellulolytic enzyme systems of symbiotic biomass degrading consortia
(Sarunyou Wongwilaiwalin, Thanaporn Laothanachareon, Wuttichai Mhuantong, Sithichoke Tangphatsornruang, Lily Eurwilaichitr, Yasuo Igarashi, **Verawat Champreda**)

Closing remark Professor, Mahidol U
Reception Dinner at La Scena

Watanalai Panbangred

JSPS-NRCT Young Scientist Seminar 2013 Osaka ***Next-Generation bioproduction leveraging subtropical microbial bioresources***

Under the framework of the JSPS Asian CORE Program (2009- 2013)

Bioresources: Potential & Applications

August 4-5, 2013 at Suntory Memorial Hall, Osaka University

Hosted by: International Center for Biotechnology, Osaka University

In Association with: JSPS (Japan Society for the Promotion of Science), NRCT (National Research Council of Thailand)

Executive Committee: Chairman, Director Prof. Dr. Takuya Nihira
(International Center for Biotechnology, Osaka University)
Prof. Dr. Kazuhito Fujiyama, Dr. Shigeru Kitani, Dr. Ryo Misaki,
Dr. Hiroshi Kinoshita, Dr. Takao Ohashi

<August 4 (Sun)>

9:30 Opening remark Prof. Dr. Takuya Nihira and Prof. Dr. Watanalai Panbangred
Oral presentation

Group 1-A Chairpersons: Mr. Hirofumi Akiyama and Dr. Piseth Khiev

9:45 **O-1** Mr. Takao Fukuda (Toyama Pref. U) Genomics-driven screening of new secondary metabolites from a human pathogenic actinomycete *Gordonia*

10:00 **O-2** Mr. Hirofumi Akiyama (Toyama Pref. U) Natural product screening from thermophilic Gram-positive bacteria

10:15 **O-3** Dr. Piseth Khiev (Royal U Phnom Phen, Cambodia) Constituents from Cambodia traditional medicinal plants and their immune modulating activities

10:30 **O-4** Mr. Tatsuya Ueguchi (Osaka U) Isolation of new compounds from marine-derived Thai actinomycetes

Group 1-B Chairpersons: Dr. Thao Kim Nu Nguyen and Ms. Megumi Ishibashi

10:45 **O-5** Ms. Mitsuki Yoshida (Osaka U) Isolation of an anti-dengue virus compound from Thai actinomycetes

11:00 **O-6** Ms. Ivy Grace Umadhay Pait (Osaka U) Identification and heterologous expression of an indigoidine biosynthetic gene from *Streptomyces lavendulae* FRI-5

11:15 **O-7** Mr. Weerapong Woraprayote (Kyushu U/BIOTEC) Detection and characterization of novel

- antimicrobial peptides from *Weissella hellenica* BCC 7293
- 11:30 **O-8** Ms. Megumi Ishibashi (Osaka U) Development of analytical system for pesticides by supercritical fluid chromatography/mass spectrometry
- 11:45 **O-9** Dr. Thao Kim Nu Nguyen (VNU Hanoi, Vietnam) Screening for novel bioactive compounds from actinomycetes isolated in Vietnam
- 12:00 **Introduction of Poster presentation**
- P-1** Dr. Kosonh Xaphakatsa (Biotechnol. & Ecology Inst., Laos) The contribution of wild orchid family as the medicinal plant for the potential of social economic development, genetic resource protection and their sustainable usage in Laos
- P-2** Ms. Vilaysoth Nokeomany (Biotechnol. & Ecology Inst., Laos) Antimicrobial activity of actinomycetes isolated from different habitats in Laos
- P-3** Mr. Sophon Hap (Royal U Phnom Phen, Cambodia) Isolation of indigenous actinobacteria and screening for their natural bioactive secondary metabolites
- P-4** Ms. Sayaka Hana (Toyama Pref. U) Biosynthesis of *anteiso*-methyl group in actinomycetes polyketides
- 12:30 **Lunch & Poster Presentation**

Keynote lecture

- 14:00 **K-1** Prof. Dr. Eiichiro Fukusaki (Osaka U) Application of metabolomics to high resolution phenotype analysis

Group 2 Chairpersons: Mr. Taku Orita and Dr. Arjaree Nilavongse

- 14:30 **O-10** Ms. Thanaporn Laothanachareon (BIOTEC, Thailand) Construction of polysaccharide-degrading enzyme library from *Aspergillus aculeatus* for biotechnological applications
- 14:45 **O-11** Mr. Kevin Sherman (Hokkaido U) An inositol liberating phytase from *Klebsiella pneumoniae* 9-3B
- 15:00 **O-12** Dr. Arjaree Nilavongse (Mahidol U, Thailand) Fecal derived metagenomic library for screening of lipolytic enzyme
- 15:15 **O-13** Ms. Puangpen Limsakul (Mie U) Identification of a copper-dependent lytic polysaccharide mono-oxygenase active on xylan from *Paenibacillus curdolanolyticus* B-6
- 15:30 **O-14** Mr. Taku Orita (Mie U) Characterization of cellulases in glycoside hydrolase family 9 encoded in the large cellulase gene cluster of *Clostridium josui*
- 15:45 **O-15** Ms. Yuka Hasegawa (Osaka U) Development of nucleotide sugar production system using fission yeast
- 16:00 **Coffee Break**

Group 3 Chairpersons: Mr. Rodney Honrada Perez and Mr. Yohanes Novi Kurniawan

- 16:30 **O-16** Mr. Hiroyuki Ohashi (Osaka U) Production and characterization of α 1,3-galactosyltransferases from fission yeast
- 16:45 **O-17** Mr. Daryong Kim (Osaka U) Cloning and characterization of *PEP4* gene in a Thai-isolated thermotolerant yeast *Pichia thermomethanolica* for efficient recombinant protein secretion
- 17:00 **O-18** Mr. Rodney Honrada Perez (Kyushu U) Functional analysis of the genes involved in the biosynthesis of the circular bacteriocin, enterocin NKR-5-3B (Ent53B)
- 17:15 **O-19** Ms. Naho Matsumoto (Kyushu U) Elucidation of regulatory mechanisms in multiple bacteriocin production by *Enterococcus faecium* NKR-5-3
- 17:30 **O-20** Mr. Yohanes Novi Kurniawan (Osaka U) Characterization of regulatory genes involved in secondary metabolism of *Streptomyces lavendulae* FRI-5
- 17:45 **O-21** Mr. Suandi Pratama Sultan (Osaka U) Characterization of regulatory genes involved in the production of avermectin, an anthelmintic agent

<August 5 (Mon)>

Group 4-A Chairpersons: Ms. Borimas Krutsakorn and Ms. Ying Wang

- 9:30 **O-22** Ms. Nanami Takano (Hokkaido U) Oligosaccharide (DFA III) production from dahlia tuber with actinomycete *Nonomuraea* sp.
- 9:45 **O-23** Ms. Nabilah Sari Mustafa (Osaka U) Heterologous production and characterization of *Arabidopsis* polygalacturonase produced in the fission yeast
- 10:00 **O-24** Ms. Ying Wang (Kyushu U) Development of bioprocess with designed biomass: High L-lactic acid production efficacy from cellobiose and xylose mixture by *Enterococcus mundtii* QU 25
- 10:15 **O-25** Mr. Takenori Kanazawa (Osaka U) Development of an integrating vector in an oleaginous yeast

Rhodospiridium toruloides DMKU3-TK16 for lipid engineering
10:30 **O-26** Ms. Borimas Krutsakorn (Osaka U) *In Vitro* production of *n*-butanol with thermophilic enzymes

Group 4-B Chairpersons: Mr. Pham Huynh Ninh and Mr. Takuya Noguchi

10:45 **O-27** Mr. Takuya Noguchi (Kyushu U) Development of bioprocess with designed biomass: Butanol production without catabolite repression from mixed sugars and elucidation of the mechanism of xylose metabolism

11:00 **O-28** Ms. Ming Gao (Kyushu U) Development of bioprocess with designed biomass: Novel butanol fermentation with acetate as substrate by *Clostridium saccharperbutylactonicum* N1-4

11:15 **O-29** Mr. Pham Huynh Ninh (Osaka U) Direct use of recombinant *Escherichia coli* having thermophilic enzyme as whole cell biocatalyst in continuous bioconversion system

11:30 **O-30** Mr. Nguyen Huu Tri (U Tokyo) Carbon utilization in a chemolithoautotroph *Hydrogenophilus thermoluteolus* TH-1

11:45 **O-31** Mr. Akkaraphol Srichaisupakit (Osaka U) Identification of protein glycosylation operon from *Campylobacter jejuni* JCM 2013

12:00 **Lunch**

Keynote lecture

12:50 **K-2** Prof. Dr. Satoshi Harashima (Osaka U) Recent advances in breeding technologies for microorganisms -More than just a trend-

Group 5 Chairpersons: Mr. Saeed Kaboli and Ms. Shiho Ogata

13:20 **O-32** Mr. Mario Rovani Hendriyanto (Osaka U) Characterization of genes involved in the biosynthesis of virginiamycin M, a streptogramin type A antibiotic

13:35 **O-33** Ms. Fitria Ningsih (Osaka U) Characterization of genes involved in the biosynthesis of virginiamycin S, a streptogramin type B antibiotic

13:50 **O-34** Ms. Shiho Ogata (Kyushu U) Elucidation of the biosynthetic mechanism of leaderless bacteriocin, lactacin Q

14:05 **O-35** Mr. Toshihiro Suzuki (Osaka U) Lactic-acid stress causes vacuolar fragmentation and impairs intracellular amino-acid homeostasis in *Saccharomyces cerevisiae*

14:20 **O-36** Ms. Waranya Natesuntorn (Osaka U) Genom-wide construction of a series of segmental aneuploids for genome analysis and breeding in *Saccharomyces cerevisiae*

14:35 **O-37** Mr. Saeed Kaboli (Osaka U) Genome-wide mapping for unexplored essential regions harboring synthetic lethal interactions in *Saccharomyces cerevisiae*

14:50 **O-38** Ms. Juthaporn Sangwallek (Osaka U)

15:05 **Coffee Break**

15:30 Vietnam-Japan Joint Symposium

Dr. Hoang Le Tuan Anh (Vice head, Department of Structural Research, Institute of Marine Biochemistry)

Mr. Yoshinori Sumimura (Assoc. Prof., Global Collaboration Center, Osaka University)

Dr. Masayoshi Arai (Assoc. Prof., Graduate School of Pharmaceutical Sciences, Osaka University)

List of Participants to JSPS-NRCT Joint Symposium and YSS 2013

<Thailand>

NRCT: Soottiporn Chittmittrapap (Secretary General)
Pimpun Pongpidjayamaad (Director, Office of International Affairs)
Woramanee Mongkolson (Officer, Office of International Affairs)

Mahidol U: Watanalai Panbangred (Professor)
Chuenchit Boonchird (Associate Professor) Arjaree Nilavongse (Lecturer)

Chulalongkorn U: Alisa Vangnai (Associate Professor)
Kasetsart U: Savitree Limtong (Professor) Wichien Yongmanichai (Lecturer)

KMUTT: Khanok Ratanakhanokchai (Associate Professor) Chakrit Tachaapaikoon (Assistant Professor)

BIOTEC: Morakot Tanticharoen (Professor) Verawat Champreda (Researcher)
Amonlaya Tosukhowong (Researcher) Thanaporn Laothanachareon (Researcher)

<Vietnam I>

VNU Hanoi: Duong Van Hop (Director, IMBT) Thao Kim Nu Nguyen (Researcher)

<Vietnam II>

IMBC: Hoang Le Tuan Anh (Vice head, Dept. of Structural Research)
Nguyen Xuan Cuong (Vice head, Dept. of Medical Materials)

<Cambodia>

Royal U Phnom Penh: Sokunthia Thao (Head of Department)
Piseth Khiev (Lecturer) Sophon Hap (Lecturer)

<Laos>

BEI: Souriodong Sundara (Director)
Kosonh Xaphakatsa (Researcher) Vilaysoth Nokeomany (Researcher)

<Japan>

JSPS: Hisashi Kato (Director, International Program Department)
Makiko Segawa (Research Cooperation Division)
Sohnosuke Kohzuki (Research Cooperation Division)

Hokkaido U: Kozo Asano (Professor) Nanami Takano (M1)
Kevin Sherman (M1)

U Tokyo: Masaharu Ishii (Associate Professor) Huu Tri Nguyen (D1)

Southwest U (China): Yasuo Igarashi (Professor/Professor Emeritus)

Mie U: Kazuo Sakka (Professor) Makiko Sakka (Researcher)
Taku Orita (D1) Puangpen Limsakul (Special Research Student)

Toyama Pref. U: Yasuhiro Igarashi (Professor) Takao Fukuda (Researcher)
Hirofumi Akiyama (D3) Sayaka Hana (M1)

Kyushu U: Kenji Sonomoto (Professor) Takeshi Zendo (Assistant Professor)
Weerapong Woraprayote (D4) Rodney Honrada Perez (D3)
Ming Gao (D2) Ying Wang (D2)
Takuya Noguchi (D1) Naho Matsumoto (M2)
Shiho Ogata (M2)

Osaka U: Toshihiro Tanaka (Associate Dean)
Takuya Nihira (Director) Satoshi Harashima (Professor)
Hisao Ohtake (Professor) Kazumasa Hirata (Professor)
Eiichiro Fukusaki (Professor) Kazuhito Fujiyama (Professor)
Masayoshi Arai (Associate Professor) Yoshinori Sumimura (Associate Professor)
Kohsuke Honda (Associate Professor) Minetaka Sugiyama (Associate Professor)
Shigeru Kitani (Associate Professor) Ryo Misaki (Lecturer)
Hiroshi Kinoshita (Assistant Professor) Takao Ohashi (Assistant Professor)
Toshihiro Suzuki (Specially Appointed Researcher)

Juthapom Sangwallek (D3) Daryong Kim (M1)
Saeed Kaboli (D3) Yuka Hasegawa (M1)
Waranya Natesuntorn (D1) Yohanes Novi Kurniawan (D3)
Megumi Ishibashi (D1) Fitria Ningsih (D2)
Borimas Krutsakorn (D3) Suandi Pratama Sultan (D1)
Ninh Huynh Pham (D2) Mario Rovani Hendriyanto (M2)
Akkaraphol Srichaisupakit (D2) Tatsuya Ueguchi (M2)
Nabilah Sari Mustafa (M2) Mitsuki Yoshida (M2)
Takenori Kanazawa (M2) Ivy Grace Umadhay Pait (M2)
Hiroyuki Ohashi (M1)

<UNESCO Training Project for FY 2013>

Panlada Tittabutr (Suranaree U, Thailand) Ju Chu (East China U, China)
Mohammad Riazul Islam (U Dhaka, Bangladesh) Merkuria Karyantina (Slamet Riyadi U, Indonesia)
Sarintip Sooksai (Chulalongkorn U, Thailand) Noppon Lertwattanasakul (Kasetsart U, Thailand)
Patipark Kueanjinda (Chulalongkorn U) Chaiyong Koaykul (KMUTT, Thailand)
Enkh-Amgalan Jigjiddorj (Mongolian Acad. Sci.) Thao Kim Nu Nguyen (Vietnam National U)
Fidel Rey P. Nayve Jr. (BIOTECH, Philippines) Anggraini Barlian (ITB, Indonesia)
Savitr Trakulnaleamsai (Kasetsart U, Thailand) Sofia Mubarika Haryana (Gadjah Mada U, Indonesia)

<UNESCO Biotechnology School in Asia>

Mark Anthony Alfred Badua (UPLB, Philippines) Dwi Purno Widekdo (Gadjah Mada U, Indonesia)

Fitria Dwi Ayuningtyas (ITB, Indonesia)
Truong Ngoc Quang (VNUHCM, Vietnam)
Chhon Yanvary (Royal U Phnom Penh)
Sieng Darith (Royal U Phnom Penh)
Soulyavong Souphaline Liko (National U Laos)

Chalisa Jaturapaktrarak (Chulalongkorn U, Thailand)
Ung Sivlin (Royal U Phnom Penh, Cambodia)
Ban Mab (Royal U Phnom Penh)
Phonepaseuth Phongphayboun (National U Laos)

<Osaka U Attendees>

Toshiomi Yoshida (Professor Emeritus)
Tatsuji Seki (Professor Emeritus, Specially Appointed Professor)
Yoshinobu Kaneko (Professor)
Takeshi Bamba (Associate Professor)
Kenji Okano (Assistant Professor)
Shinya Yamamoto (D2)
Hiroshi Tsugawa (D2)
Sharmin Dilruba (D2)
Mariko Yoshioka (M1)
Keisuke Yamanaka (M2)
Yuki Asano (M2)
Keiichi Ishido (D3)
Yusuke Ohara (M2)
Tetsuya Miyamoto (M2)
Shoji Kakuta (D2)
Hitoshi Mitsunaga (M1)
Koki Satoh (M1)
Mariko Tanaka (M1)
Jun Asaka (M1)
Keitaro Hayashi (M1)
Kazuki Itokawa (M2)

Hiromi Maekawa (Associate Professor)
Kazuo Harada (Assistant Professor)
Yu Sasano (Assistant Professor)
Yukihiro Hadae (M2)
Yukiko Masui (M1)
Shota Tagami (M2)
Naoya Yuikawa (M2)
Kun Wang (M2)
Ryota Nakanishi (M1)
Koki Nagasawa (M1)
Tao Takagaki (M1)
Maho Hayashi (M1)
Junyuan Wu (M1)
Ratama Daduang (Researcher)
Dian Suroto (D2)
Sarach Wongsuntornpoj (M1)
Ryosuke Miyauchi (M2)
Masahiro Shimomura (M1)
Takuto Sera (M1)

**JSPS-NRCT Symposium in Vientiane
on Next-Generation Bioproduction Platform Leveraging Subtropical
Microbial Bioresources**

January 13, 2014 at Settha Palace Hotel, Vientiane

Organized by Biotechnology and Ecology Institute (BEI) and ICBiotech (OU)

10:00-10:05 Opening remark Takuya Nihira (Director, ICBiotech)

10:05-10:15 Address Souriodong Sundara (Director, BEI)

10:15-10:45 Isolation and characterization of freshwater microbial opsins from Tonle Sap Lake by PR recombinant method (**Choun Kimleng**, Kwang-Hwan Jung)

10:45-11:15 Exploiting natural bioactive compounds produced by actinomycetes (**Shigeru Kitani**, Yasuhiro Igarashi, Watanalai Panbangred, Takuya Nihira)

11:15-11:45 Derivative-xylooligosaccharide production from extracted xylan by direct grown culture, *Bacillus clausii* SPP20 (Ketsara Phoemsuk, Patthra Pason, Rattiya Waeonukul, Akihiko Kosugi, Khanok Ratanakhanokchai, **Chakrit Tachaapaikoon**)

Lunch at Settha Palace

13:30-14:00 Characterization of thermotolerant yeast isolated in Thailand and improvement towards cost-effective bioethanol production (**Yu Sasano**, Thipa Asvarak, Choowong Auesukaree, Kun Wang, Minetaka Sugiyama, Yoshinobu Kaneko, Chuenchit Boonchird, Satoshi Harashima)

14:00-14:30 Characterization of oleaginous yeasts and lipid production from crude glycerol by the Selected strain, *Rhodospiridium fluviale* DMKU-RK253 (**Savitree Limtong**, Pirapan Polburee, Wichien Yongmanitchai, Takao Ohashi, Kazuhito Fujiyama)

14:30-15:00 *In vitro* metabolic engineering for on-demand bioproduction (Kohsuke Honda)

Coffee break

15:30-16:00 Development of integrated hydrolysis process for sugar platform biorefinery on conversion of

lignocellulosic biomass to biofuels and chemicals (Surisa Suwannarangsee, Jantima Arntong, Aphisit Poonsrisawat, Navadol Laosiripojana, Lily Eurwilaichitr, Yasuo Igarashi, **Verawat Champreda**)

16:00-16:30 Update on current status of Vietnam microbial resources at Vietnam Type Culture Collection (**Thao Kim Nu Nguyen**, Trinh Thanh Trung, Le Thi Hoang Yen, Dao Thi Luong, Duong Van Hop)

16:30-16:40 Diversity of thermotolerant acetic acid bacteria in Lao PDR (Chanhom Loinheuang, Gunjana Theeragool, Kazunobu Matsushita, Toshiharu Yakushi)

16:40-16:50 Isolation and characterization of xylose utilizing yeast for ethanol fermentation (**Chansom Keo-Oudone**, Kongsamai Sayavongsa, Soulitar Sonethongkham, Nataly Chandala, Noppon Lertwattanasakul, Napatchanok Yuangsaad, Savitree Limtong, Mamoru Yamada)

16:50-17:00 Surveying the invertebrate pathogenic fungi diversity in the Huay Yang Forest Reserve, Vientiane Capital (**Toulaphone Keokene**, Chanhom Loinheuang, Chansom Keo-Oudone, Manichanh Sayavong)

Closing remark Watanalai Panbangred (Professor, Mahidol U)

Poster presentation Multi-cell wall degrading enzyme from *Aspergillus aculeatus* for viscosity reduction in very high gravity cassava fermentation (**Aphisit Poonsrisawat**, Sittichoke Wanlapatit, Atchara Paemane, Lily Eurwilaichitr, Kuakoon Piyachomkwan, Verawat Champreda)

4. Committee Meeting

April 22, 2013. Domestic Members Meeting at ICBiotech, Osaka University, attended by Japanese cooperative researchers (Hokkaido U, U of Tokyo, Mie U, Toyama Pref. U, Osaka U, and Kyushu U).

March 3, 2014. Domestic Members Meeting at ICBiotech, Osaka University, attended by Japanese cooperative researchers.

IV. JSPS BILATERAL PROGRAM OF JOINT RESEARCH PROJECT AND SEMINARS –VIETNAM (August 2011-March 2014)

JSPS promotes international scientific exchanges between Japan and counterpart countries in accordance with agreements or memoranda of understanding concluded with academies, research councils and other science-promotion organizations in those countries. ICBiotech participates in the bilateral programs agreed between Vietnam Academy of Science and Technology (VAST), which mainly take the form of joint research projects, joint seminars and researcher exchanges.

Vietnam-Japan Joint Symposium JSPS Bilateral Joint Research Project between Vietnam and Japan August 5, 2013 at Suntory Memorial Hall, Osaka University

Dr. Hoang Le Tuan Anh (Vice Head, Department of Structural Research, Institute of Marine Biochemistry)

“A minor review about the research of Vietnam marine sponges:

Biscembranoids from the sponge *Petrosia nigricans*”

Mr. Yoshinori Sumimura (Assoc. Prof., Global Collaboration Center, Osaka University)

Dr. Masayoshi Arai (Assoc. Prof., Graduate School of Pharmaceutical Sciences, Osaka University)

“Search for anti-dormant mycobacterial substances from marine organisms and analysis of their target molecules”

**V. JASSO STUDENT EXCHANGE SUPPORT PROGRAM
(Scholarship for Short-Term Visit/ Short-Term Stay Program)**

This is a field study program co-operated with GLOCOL (Global Collaboration Center), Osaka University and Thai universities. In 2013, 12 postgraduate students* from Osaka University visited 4 universities in Thailand (KMUTT, Mahidol U, Kasetsart U, and Chulalongkorn U) from Aug. 5 to Sept. 8, and 18 Thai students* visited Osaka University between September and March 2014. *Refer to the list of Scientist Exchanges.

VI. SCIENTIST EXCHANGES (FY2013)

From Japan to counterpart countries

Name	Affiliation	Visiting Period	Host Organization
Takuya Nihira	Director, Prof., ICBiotech, Osaka U	Apr. 27-May 8, 2013	Thailand, Laos
		June 15-22, 2013	Mahidol U, Thailand
		July 6-14, 2013	Indonesia
		Aug. 29-Sep. 4, 2013	Thailand
		Oct. 14-20, 2013	Thailand, Laos
		Nov. 6-13, 2013	Maidol U, Thailand
		Dec. 14-22, 2013	India, Thailand
		Jan. 7-9, 2014	Mahidol U, Thailand
		Jan. 10-16, 2014	JSPS-NRCT Symposium, Laos
		Feb. 4-11, 2014	Thailand
		Mar. 16-23, 2014	Thailand
		Mar. 27-29, 2014	Thailand
Kazuhito Fujiyama	Prof., ICBiotech, Osaka U	Apr. 17-20, 2013	Thailand
		May 10-14, 2013	Gadja Mada U, Indonesia
		May 26-June 2, 2013	Bhutan
		July 8-12, 2013	Indonesia
		Sept. 4-9, 2013	Thailand
		Dec. 1-4, 2013	Thailand
		Jan. 11-16, 2014	JSPS-NRCT Symposium, Laos
		Feb. 9-14, 2014	Brunei
		Feb. 16-23, 2014	Thailand
		Mar. 2-7, 2014	Vietnam

Satoshi Harashima	Prof., Grad. Sch. Eng., Osaka U	July 16-20, 2013	Mahidol U, Thailand	
		Jan. 13, 2014	JSPS-NRCT Symposium, Laos	
Yu Sasano	Assist. Prof. Grad. Sch. Eng., Osaka U	Jan. 13, 2014	JSPS-NRCT Symposium, Laos	
Kazuo Sakka	Prof., Fac. Biores., Mie U	Sept., 2013	KMUTT, Thailand	
Kohsuke Honda	Assoc. Prof., Grad. Sch. Eng., Osaka U	Jan. 13, 2014	JSPS-NRCT Symposium, Laos	
Shigeru Kitani	Assist. Prof., ICBiotech, Osaka U	Jan. 11-16, 2014	JSPS-NRCT Symposium, Laos	
Ryo Misaki	Lecturer, ICBiotech, Osaka U	July 9-11, 2013	Mahidol U, Thailand	
Hiroshi Kinoshita	Ass. Prof., ICBiotech, Osaka U	Sept. 5-9. 2013	Khon Kaen U, Thailand	
Takao Ohashi	Assist. Prof., ICBiotech, Osaka U	Sept. 11-15, 2013	Chulalongkorn U, BIOTEC, Thailand	
Yukiko Masui	ICBiotech, Osaka U	July 9-11, 2013	Mahidol U, Thailand	
		Aug. 5-Sept. 9, 2013	KMUTT, Thailand	
Daryong Kim	Osaka U	<JASSO> Aug. 5- Sept. 8, 2013	BIOTEC, Thailand	
Keitaro Hayashi	Osaka U		Kasetsart U, Thailand	
Mayumi Utsunomiya	Osaka U		Kasetsart U, Thailand	
Koki Nagasawa	Osaka U		Kasetsart U, Thailand	
Mariko Tanaka	Osaka U		Mahidol U, Thailand	
Koki Sato	Osaka U		Mahidol U, Thailand	
Tao Takagaki	Osaka U		Mahidol U, Thailand	
Daichi Kawamura	Osaka U		Chulalongkorn U, Thailand	
Yuka Hasegawa	Osaka U		Chulalongkorn U, Thailand	
Jun Asaka	Osaka U		KMUTT, Thailand	
Hiroyuki Ohashi	Osaka U		KMUTT, Thailand	
Takeshi Zendo	Kyushu U		Jan., 2014	BIOTEC, Thailand
Naoki Ishibashi	Kyushu U		Jan., 2014	BIOTEC, Thailand

Between counterpart countries:

Name	Affiliation	Visiting Period	Host Organization
Sunuk Chui	Kyungnam U, Korea	Aug. 1-Jan. 25, 2014	Prof. Nihira, ICBiotech
Sourioudong Sundara	BEI, MOST, Laos	Aug. 3-5.2013	JSPS-NRCT Symposium & YSS, Osaka
Kosonh Xaphakatsa	BEI, Laos	Aug. 3-5, 2013	JSPS-NRCT Symposium & YSS, Osaka
		Jan. 13, 2014	JSPS-NRCT Symposium, Laos

Vilaysoth Nokeomany	BEI, MOST, Laos	May 14-July 13, 2013	Mahidol U, Thailand
		Aug. 3-5, 2013	JSPS-NRCT Symposium & YSS, Osaka
		Jan. 13, 2014	JSPS-NRCT Symposium, Laos
Sophon Hap	Royal U Phnom Penh, Cambodia	May 14-July 13, 2013	Mahidol U, Thailand
		Aug. 3-5, 2013	JSPS-NRCT Symposium & YSS, Osaka
		Jan. 13, 2014	JSPS-NRCT Symposium, Laos
Sokunthia Thao	Royal U. Phnom Penh, Cambodia	Aug. 3-5, 2013	JSPS-NRCT Symposium & YSS, Osaka
		Jan. 11-12, 2014	JSPS-NRCT Symposium, Laos
Watanalai Panbangred	Mahidol U, Thailand	Aug. 3-5, 2013	JSPS-NRCT Symposium & YSS, Osaka
		Jan. 13, 2014	JSPS-NRCT Symposium, Laos
Soottiporn Chittmittrapap	NRCT, Thailand	Aug. 3-5, 2013	JSPS-NRCT Symposium & YSS, Osaka
Pimpun Pongpidjayamaad	NRCT, Thailand	Aug. 3-5, 2013	JSPS-NRCT Symposium & YSS, Osaka
Woramane Mongkolson	NRCT, Thailand	Aug. 3-5, 2013	JSPS-NRCT Symposium & YSS, Osaka
Chuenchit Boonchird	Mahidol U, Thailand	Aug. 3-5, 2013	JSPS-NRCT Symposium & YSS, Osaka
		Jan. 13, 2014	JSPS-NRCT Symposium, Laos
Arjaree Nilavongse	Mahidol U, Thailand	Aug. 3-5, 2013	JSPS-NRCT Symposium & YSS, Osaka
Alisa Vangnai	Chulalongkorn U, Thailand	Aug. 3-5, 2013	JSPS-NRCT Symposium & YSS, Osaka
Saviree Limtong	Kasetsart U, Thailand	Aug. 3-5, 2013	JSPS-NRCT Symposium & YSS, Osaka
		Jan. 13, 2014	JSPS-NRCT Symposium, Laos
		Mar. 28-31, 2014	Prof. Nihira, ICBiotech
Wichien Yongmanichai	Kasetsart U, Thailand	Aug. 3-5, 2013	JSPS-NRCT Symposium & YSS, Osaka
Khanok Ratanakhanokchai	KMUTT, Thailand	Aug. 3-5, 2013	JSPS-NRCT Symposium & YSS, Osaka
Chakrit Tachaapailoon	KMUTT, Thailand	Aug. 3-5, 2013	JSPS-NRCT Symposium & YSS, Osaka
		Jan. 13, 2014	JSPS-NRCT Symposium, Laos

Morakot Tanticharoen	BIOTEC, Thailand	Aug. 3-5, 2013	JSPS-NRCT Symposium & YSS, Osaka
Verawat Champreda	BIOTEC, Thailand	Aug. 3-5, 2013	JSPS-NRCT Symposium & YSS, Osaka
		Jan. 13, 2014	JSPS-NRCT Symposium, Laos
Amonlaya Tosukhowong	BIOTEC, Thailand	Aug. 3-5, 2013	JSPS-NRCT Symposium & YSS, Osaka
Thanaporn Laothanachareon	BIOTEC, Thailand	Aug. 3-5, 2013	JSPS-NRCT Symposium & YSS, Osaka
Duong Van Hop	VNU Hanoi, IMBT, Vietnam	Aug. 3-5, 2013	JSPS-NRCT Symposium & YSS, Osaka
Thao Kim Nu Nguyen	VNU Hanoi, Vietnam	Aug. 3-5, 2013	JSPS-NRCT Symposium & YSS, Osaka
		Jan. 13, 2014	JSPS-NRCT Symposium, Laos
		March 25, 2014	ICBiotech, Osaka U
Hoang Le Tuan Anh	IMBC, Vietnam	Aug. 3-5, 2013	JSPS-NRCT Symposium & YSS, Osaka
Nguyen Xuan Cuong	IMBC, Vietnam	Aug. 3-5, 2013	JSPS-NRCT Symposium & YSS, Osaka
Sokunthia Thao	Royal U Phnom Penh, Cambodia	Aug. 3-5, 2013	JSPS-NRCT Symposium & YSS, Osaka
Piseth Khiev	Royal U Phnom Penh, Cambodia	Aug. 3-5, 2013	JSPS-NRCT Symposium & YSS, Osaka
Sophon Hap	Royal U Phnom Penh, Cambodia	Aug. 3-5, 2013	JSPS-NRCT Symposium & YSS, Osaka
		Jan. 13, 2014	JSPS-NRCT Symposium, Laos
Aphisit Poonsrisawat	BIOTEC, Thailand	Jan. 13, 2014	JSPS-NRCT Symposium, Laos
Nguyen Kim Nu Thao	VMU Hanoi, Vietnam	Jan. 13, 2014	JSPS-NRCT Symposium, Laos
Chuon Kimleng	Royal U, Phnom Penh, Cambodia	Jan. 13, 2014	JSPS-NRCT Symposium, Laos
Kongchay Phimmakong	MOST, BEI, Laos	Jan. 13, 2014	JSPS-NRCT Symposium, Laos
Phetsamone Phommamaxay	BEI, Laos	Jan. 13, 2014	JSPS-NRCT Symposium, Laos
Keo Phommavong	BEI, Laos	Jan. 13, 2014	JSPS-NRCT Symposium, Laos
Khamphachanh Sihavong	BEI, Laos	Jan. 13, 2014	JSPS-NRCT Symposium, Laos
Vichith Lamxay	NUOL, Laos	Jan. 13, 2014	JSPS-NRST Symposium, Laos

Chanhom Loinheuang	NUOL, Laos	Jan. 13, 2014	JSPS-NRST Symposium, Laos
Chansom Keo-Oudone	NUOL, Laos	Jan. 13, 2014	JSPS-NRST Symposium, Laos
Toulaphone Keokene	NUOL, Laos	Jan. 13, 2014	JSPS-NRST Symposium, Laos
Kuldanai Pathompitaknukul	Mahidol U, Thailand	Sept. 2013- Mar. 2014 (Periods are different in each student)	<JASSO> Prof. Nihira Prof. Fujiyama (ICBiotech, Osaka U) Prof. Fukui Prof. Ohtake Prof. Kino-oka (Sch. Eng., Osaka U)
Neeranuch Changthong	KMUTT, Thailand		
Subenya Injamp	Mahidol U, Thailand		
Rujiralai Poontawee	Kasetsart U, Thailand		
Kunthika Mokdara	KMUTT, Thailand		
Sopita Wong-in	KMUTT, Thailand		
Pirapan Polburee	Kasetsart U, Thailand		
Areerat Kunanopparat	Kasetsart U, Thailand		
Kantinan Leetanasaksakul	Kasetsart U, Thailand		
Nuttawat Wangrangsimagul	Mahidol U, Thailand		
Kanokaon Benchapraphanphorn	KMUTT, Thailand		
Patomporn Phadungchaya	KMUTT, Thailand		
Jaruta Panyakampol	KMUTT, Thailand		
Jiraporn Jirakkakul	KMUTT, Thailand		
Nuttiporn Yabueng	Chulalongkorn U, Thailand		
Kanokjun Jaiboon	Kasetsart U, Thailand		
Aeujkum Saengwong	Kasetsart U, Thailand		
Parichat Into	Kasetsart U, Thailand		
Aigle Bertrand	U Lorraine, France	March, 2014	Prof. Nihira, ICBiotech
Niran Roongsawang	BIOTECH, Thailand	March 3 - May 29, 2014	Prof. Fujiyama, ICBiotech

VII. GUESTS/VISITORS

*Seminar or lecture at ICBiotech

Name	Affiliation	Staying Period
Hugo Vits	Shell Technology Center Bangalore, India	April 1, 2013
A. Endang Sutariningsih Soetarto	Gadjah Mada U, Indonesia (UM05th Alumna)	April 17, 2013

Tippawan Pinvanichkul	KMUTT, Thailand	May 14, 2013
Woranuch Kerdsinchai	KMUTT, Thailand	May 14, 2013
Wanna Temsiripoj	KMUTT, Thailand	May 14, 2013
Anak Khantachawana	KMUTT, Thailand	May 14, 2013
Duong Van Hop*	Vietnam National U, Hanoi	June 12, 2013
Anak Khantachawana	KMUTT, Thailand	July 4, 2013
Michiho Ito*	Kyoto U (Visiting Assoc. Prof., ICBiotech)	July 31, 2013
Hoang Le Tuan Anh	Vietnam	Aug. 2, 2013
Nguyen Xuan Cuong	Vietnam	Aug. 2, 2013
Bundit Fungtamasan	KMUTT, Thailand	Aug. 2, 2013
Chaowalit Limmaneevichitr	KMUTT, Thailand	Aug. 2, 2013
Vilaysoth Nokeomany	MOST, Laos	Aug. 2, 2013
Thanaporn Laothanachareon	BIOTEC, Thailand	Aug. 2, 2013
Thanatip Upatising	Royal Thai Embassy	Aug. 2, 2013
Maria Teresa L. Taguiang	Consulate-General of the Republic of the Philippines in Osaka	Aug. 2, 2013
Sakarindr Bhumiratana	President, KMUTT, Thailand	Aug. 2, 2013
Soottiporn Chittmittrapap	National Research Council of Thailand	Aug. 2, 2013
Djoko Santoso	Ministry of Education and culture, Government of Indonesia	Aug. 2, 2013
Dang Dink Kim	VAST/IET, Vietnam	Aug. 2, 2013
Ha Ngoc Hien	VAST/IET, Vietnam	Aug. 2, 2013
Boonyarat Suwanchinda	Mahidol U, Thailand	Aug. 21, 2013
Disayanun Pejpongsai	Mahidol U, Thailand	Aug. 21, 2013
Ming-Liang Kuo	National Taiwan U	Oct. 10, 2013
Hsinyu Lee	National Taiwan U	Oct. 10, 2013
Shan-Chwen Chang	National Taiwan U	Oct. 10, 2013
Tsai-Kun Li	National Taiwan U	Oct. 10, 2013
Ir. Didiek Hdjar Goenadi	PT. Riset Perkebunan Nusantara, Indonesia	Oct. 21, 2013
Ir. Teguh Wahyudi	PT. Riset Perkebunan Nusantara, Indonesia	Oct. 21, 2013
Senior High School students	KMUT, Thailand	Nov. 15, 2013
Ademola Adenle	UN, India	Dec. 2, 2013
Raymond L. Rodriguez	U California, Davis, USA	Dec. 10, 2013
Chadaram Sivaji	Indian Embassy	Jan. 27, 2014

Punchapat Sojikul*	Mahidol U, Thailand	Feb. 24, 2014
Rosella Franconi*	Italian National Agency for New Technology	Feb. 24, 2014
Ruchi Anand	Indian Institute of Technology	March 10, 201
29 Visitors	Council Engineering Deans of Thailand	March 13, 2014

VIII. COMMITTEE MEETING

Steering Committee Meetings of ICBiotech were convened as follows:

April 26, 2013

Discussion on inviting a Visiting Research Scholar: Dr. Sun-Uk Choi, Korea (August 1, 2013- January 31, 2014).

July 19, 2013

Discussion on inviting a Visiting Research Scholar: Mr. Junji Tayama, Japan (August 1, 2013- July 31, 2014).

August 30, 2013

Discussion on inviting a Visiting Research Scholar: Mr. Yohanes Novi Kurniawan, Indonesia (October 1, 2013-September 30, 2014), and Ms. Ratama Daduang, Thailand (October 1, 2013-September 30, 2014).

September 27, 2013

Discussion on inviting a Visiting Research Scholar: Dr. Niran Roongsawang, Thailand (March 2, 2014-May 30, 2014).

November 11, 2013

Discussion on inviting a Visiting Research Scholar: Dr. Nobuaki Suzuki, Japan (December 1, 2013 -November 30, 2014) and Dr. Hiroyuki Kajiura, Japan (December 1, 2013-November 30, 2014).

March 14, 2014

Report on:

- Renovation of ICBiotech building and opening ceremony
- JSPS Asian CORE program
- JICA-JST SATREPS program
- JSPS Bilateral program with Vietnam
- UNESCO ODA program
- JASSO Short-stay and Short-visit program
- UNESCO Biotechnology School in Asia and its opening ceremony
- Adjunct committee
- Evaluation committee meeting

Discussion on:

- Conferring the title on visiting professors from abroad for 2014.
- Conferring the title on visiting professors assigned from Japanese universities for 2014.
- Inviting a visiting research scholar.