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INTERNATIONAL CENTER FOR BIOTECHNOLOGY  
OSAKA UNIVERSITY**

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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](mailto:info_icbio@icb.osaka-u.ac.jp)).

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## **ACTIVITIES OF ICBiotech**

## ACTIVITIES OF INTERNATIONAL CENTER FOR BIOTECHNOLOGY FOR FY2014

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**

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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)

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Professor	Dr. Kazuhito Fujiyama
Adjunct Professor	Dr. Michihiko Ike (Department of Environmental Engineering)
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Lecturer	Dr. Ryo Misaki
Assistant Professor	Dr. Hiroshi Kinoshita Dr. Takao Ohashi
Administrative Official	Ms. Nozomi Yokoi
Administrative Assistant	Ms. Fumiko Tomomatsu Ms. Chiyoko Katayama
Technical Assistant	Ms. Hitomi Yumioka Ms. Shizuka Kawakami

## 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.

## ***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 2013 Cohort**

August 1, 2014 at Ichō Kaikan, Osaka University

Opening	Prof. Takuya Nihira	Director, ICBiotech
Welcome address	Prof. Toshio Hirano	President, Osaka University
Address	Prof. Ainun Na'im	Secretary-General, Ministry of Education and Culture, Indonesia
Address	Prof. William G. Padolina	President, National Academy of Science and Technology, the Philippines
Address	Mr. Bambang Soegiarto	Acting Consul General, Indonesian Consulate-General, Indonesia
Address	Mr. Vichit Chitvimarn	Consul General, Royal Thai Consulate General
Address	Mr. Jerome John Castro	Consul, Philippine Consulate General
Address	2013 cohort participants	11 participants
Closing	Prof. Kazuhito Fujiyama	ICBiotech
Photo session		
Welcome lunch		

#### **[List of 2<sup>nd</sup> cohort students] (Aug 2013 – July 2015)**

Nationality	Name	Allocated University	Assigned Supervisor
Cambodia	Sreyneang Nhim	KMUTT, Thailand	
Cambodia	Ratny Khiev	MU, Thailand	Dr. Siripong Thitamadee
Cambodia	Chan Davy Seng	ITB, Indonesia	
Cambodia	Sochanwattey Meas	KMUTT, Thailand	
Cambodia	Ratha An	MU, Thailand	Assoc. Prof. Sittiwat Lertsiri
Laos	Chanvilayphon Vixaysomboun	UGM, Indonesia	
Vietnam	Thi Ngoc My Nguyen	CU, Thailand	Dr. Tanapat Palaga
Thailand	Nutthanit Thunmrongsiri	Osaka U, Japan	Dr. Nihira, ICBiotech
Indonesia	Nur Akbar Arofathullah	Osaka U, Japan	Dr. Fujiyama, ICBiotech
Philippines	Johnry Sumague Maloles	Osaka U, Japan	Dr. Fujiyama, ICBiotech
Philippines	Cristine Marie B. Brown	Osaka U, Japan	Dr. Nihira, ICBiotech

## Schedule

July 28	Orientation, Final presentation of 2012 participants
July 29	Master thesis presentation in English Course
July 30	Advanced training with HPLC, Seminar by Shimadzu
July 31	Factory tour at Shimadzu (Kyoto) and experience of Japanese culture in Kyoto
August 1	<ul style="list-style-type: none"><li>• Opening ceremony, Welcome lunch</li><li>• Seminar by Japanese companies: Asahi Breweries, Ezaki Glico, Fuji Oil, and Saraya</li><li>• Presentation of research topics by 2013 participants</li><li>• Light meals and round table conference</li></ul>
August 4	Lectures: Bioresources (Prof. Kaneko) and Biodiversity (Dr. Kawasaki)
August 5	Lab tour at Dept. Biotechnol., Experience of Japanese culture
August 6	Lecture: Technology management (Prof. Methe) Lecture: Free trade and outsourcing –the rise of India and China- (Prof. Nomura)
August 7	Experience of Japanese culture
August 8	Presentation of team task, certificate award, and brief meeting

## III. WORKSHOP

### International Workshop on Plant-Made-Pharmaceuticals

#### — 25 Years of Progress and Challenges

September 16th - 18th, 2014

Ichō Kaikan 3F (Conference Hall), Osaka University

2014 marks the 25th anniversary of the first plant-made-pharmaceutical (PMP). In recognition of this important milestone in biotechnology, ICBiotech at Osaka University, together with the University of California-Davis and Ministry of Economy, Trade and Industry (METI), Tokyo, hosted a workshop to discuss the commercial production of PMPs from the perspective of design method/structural systems analysis (DMSSA). The workshop is appropriate for graduate students, postdoctoral fellows, university faculty, government and industrial scientists interested in the scientific and commercial aspects of PMP production.

**Organizing Committee:** Kazuhito Fujiyama (Chairman)

Takuya Nihira, Raymond L. Rodriguez, and Atsuhiko Shinmyo

### Program

<September 16 (Tue), 2014> at Ichō Kaikan (Hankyu Sanwa Hall)

9:00- 9:30 Registration

9:30- 9:45 Greetings and introductory remarks:

**Kazuhito Fujiyama** (Organizing Committee Chairman, ICBiotech, Osaka U)

**Michihiro Tamura** (Director, Bio-business Promotion Office, METI)

9:45-10:00 Workshop orientation: **Raymond Rodriguez** (Dept. Mol. & Cell. Biol., UC Davis)

10:00-10:10 Introduction of Keynote Speaker: **Raymond Rodriguez**

10:10-11:00 Keynote presentation 1: **Yuri Gleba** (Icon Genetics and Nomad Bioscience, Germany) Plant biotechnology: The future is in transient expression processes

11:00-11:15 Questions and discussion

11:15-11:30 BioBreak

11:30-12:00 Research seminar 1: **Noriko Tabayashi** (Plant Biotechnology Center, Hokusan) Development of transgenic strawberry which is used as raw materials for veterinary drug formation

12:00-12:15 Questions and discussion

12:15-13:15 Lunch Break  
 13:15-14:00 Technical session 1: **Karen A. McDonald** (Dept. Chem. Eng. & Material Sci., UC Davis)  
 Techno-economic analysis, regulatory pathway and PMP case studies  
 14:00-14:15 Questions and discussion  
 14:15-15:15 Technical session 2: **Ko Kato** (NAIST) Development of new transformation vector for high  
 expression of transgene in plant cells  
**Noriho Fukuzawa** (AIST) Cucumber mosaic virus vector  
 15:15-15:30 Questions and discussion  
 15:30-15:45 BioBreak  
 15:45-16:05 Research seminar 2: **Hisakazu Hasegawa** (Hokko Chemical Ind., Central Res. Lab.)  
 Production of Alzheimer's disease vaccine by transgenic soybean  
 16:05-16:15 Question and discussion  
 16:15-16:35 Research seminar 3: **Jun Mutara** (Suntory Foundation for Life Sciences) Metabolic  
 engineering of lignan biosynthesis pathways for the production of transgenic plant-based  
 foods and supplements  
 16:35-16:45 Questions and discussion  
 16:45-17:05 Research seminar 4: **Kazutoshi Sawada** (Idemitsu Kosan, Advanced Technol. Res. Lab.)  
 Production of candidate edible vaccines against porcine disease in plants  
 17:05-17:15 Questions and discussion  
 17:30-19:00 Reception

<September 17 (Wed), 2014>

9:00- 9:10 Introduction of Keynote Speaker: **Atsuhiko Shinmyo** (NAIST)  
 9:10-10:00 Keynote presentation 2: **Julian K-C. Ma** (St. George's Hospital Medical School, University  
 of London) Plant antibodies: The progress and challenges of PMPs  
 10:00-10:15 Questions and discussion  
 10:15-10:30 BioBreak  
 10:30-11:00 Research seminar 5: **Yasushi Tasaka** (Bioproduction Res. Inst., AIST) High yield production  
 of transgenic *N. benthamiana* expressing antibody by using hydroponics in closed plant  
 factory  
 11:00-11:15 Questions and discussion  
 11:15-11:45 Research seminar 6: **Raymond Rodriguez** (Dept. Mol. & Cell. Biol., UC Davis) Expression  
 of recombinant human butyrylcholinesterase (rhBuChE) in *Nicotiana benthamiana* and its  
 postproduction *in vitro* glycan modification  
 11:45-12:00 Questions and discussion  
 12:00-13:15 Lunch Break  
 13:15-14:15 Technical session 3: Scale-up for commercial production of PMP proteins  
**Karen A. McDonald** (Dept. Chem. Eng. & Materials Sci., UC Davis) Progress and  
 challenges in scaling-up plant-based production of PMPs  
**Somen Nandi** (Dept. Mol. & Cell. Biol., UC Davis) Challenges and successes in scaling and  
 purifying commercial PMPs  
 14:15-14:30 Questions and discussion  
 14:30-15:30 Technical session 4:  
**Kazuhito Fujiyama** (ICBiotech, Osaka U) Glycan characterization and redecoration  
 of recombinant proteins in *Nicotiana* plant cell  
**Xi Chen** (Dept. Chem., UC Davis) *In vitro*, multistage enzymatic redecoration and  
 sialylation of hBuChE and other glycoproteins  
**Shuuichi Nakaya** (Shimadzu Corporation) Glycoconjugate analysis using mass  
 spectrometry: Glycosylation analysis of the serine protease from plant using  
 MALDI-QIT-TOF MS  
 15:30-15:45 Questions and discussion  
 15:45-16:00 BioBreak  
 16:00-16:30 Research seminar 7: **Akiho Yokota** (NAIST) Production of human thioredoxin in lettuce

16:30-16:45 Questions and discussion  
17:00-17:30 Special instrument demonstration: **Dr. Nakagawa** (Hitachi) Artificial Golgi for glycan modification  
-19:00 Reception and Dinner

<September 18 (Thu), 2014> at Suntory Memorial Hall  
9:30-10:30 Wrap-up and Next steps panel discussion (Moderator: Karen McDonald)  
10:30-11:00 Open for comments and discussion

**The Second Workshop on Collaboration  
between Osaka University and Japanese Companies  
January 19, 2015**

**4<sup>th</sup> and 5<sup>th</sup> floor, International Center for Biotechnology, Osaka University**

Sponsorship; International Center for Biotechnology, Osaka University  
Co-sponsored; International Research Initiative for Frontier of Industrial Biotechnology, Osaka University

The Second Workshop on Collaboration between Osaka University and Japanese companies was held. Representatives of industries engaged in the biotechnology industry were introduced to the international students enrolled at Osaka University for the purpose of attaining international human resource development. A total of fifteen enthusiastic companies attended the meeting. Companies, faculty members and students introduced themselves and their activities to one another. Students were able to know about the Japanese companies and how to apply their scholarly works in the industrial biotechnology setting. Adding to the great success of this meeting are the lively discussions and exchange meetings which have resulted in a deepened understanding of each other.

**Workshop Program**

13:30-14:00 Brief introduction about the project Prof. Nihira (Director of ICBiotech)  
14:00-15:00 Keynote Lecture: Bringing innovations to the Market-Global Perspective  
**Lekh Juneja Ph.D.** (Executive Vice President, Rohto Pharmaceutical Co., Ltd.)  
15:00-16:15 Introduction of companies: Company profiles and their experiences for human resource development

- 1) Suntory Spirits: A theory and practice of the whisky manufacturing
- 2) Nissin Foods Holdings: Specific initiatives of our company to hire and take good care of foreign employees
- 3) Hitachi Zosen: Energy from Waste/JCM project in Vietnam

16:15-17:00 Presentation by international students

- 1) UNESCO Biotechnology School in Asia (M2, Thai)
- 2) Frontier Biotechnology (D2, Chinese)
- 3) Frontier Biotechnology (D2, German)
- 4) Frontier Biotechnology (D2, Chinese)
- 5) Frontier Biotechnology (D1, Indonesian)

17:00-17:15 Brief introduction of participating companies  
17:15-19:30 Exchange meeting

#### IV. JASSO STUDENT EXCHANGE SUPPORT PROGRAM (SSSV) (Scholarship for Short-Term Visit/ Short-Term Stay Program)

This is a field study program jointly operated with GLOCOL (Global Collaboration Center), Osaka University and several universities in Thailand. In 2014, 16 first year master's degree students of Osaka University visited 4 universities in Thailand between August 5 and September 8, and 17 postgraduate students from Thailand visited Osaka University between August and December, which enhanced mutual interactions.

##### Students from Osaka U

Name	Lab	Allocated U	Assigned Supervisor
Keisuke Azuma	Kino-oka Lab	KMUTT	Dr. Kwanchanok Viravaidya-Pasuwat
Yuya Ishikawa	Fukui Lab	Kasetsart U	Dr. Somsak Apisitwanich
Yuta Okamoto	Fujiyama Lab	Kasetsart U	Dr. Ingorn Kimkong
Shoko Okita	Ohtake Lab	Mahidol U	Dr. Thunyarat Pongtharangkul
Kento Kato	Harashima Lab	CU	Dr. Chulee Yompakdee
Tatsuo Kawakami	Nihira Lab	KMUTT	Dr. Supaporn Cheevadhanarak
Mami Suzuki	Fujiyama Lab	Kasetsart U	Dr. Savitree Limtong
Keisuke Sunada	Harashima Lab	Mahidol U	Dr. Chuenchit Boonchird
Tsukushi Nagase	Nihira Lab	Kasetsart U	Dr. Arinthip Tamchaipenet
Anna Nakamura	Ohtake Lab	CU	Dr. Suchada Chanprateep Napathorn
Miyuki Nakamura	Nihira Lab	CU	Dr. Jiraporn Thaniyavarn
Sayuri Nohara	Nihira Lab	Mahidol U	Dr. Watanalai Panbangred
Takahiro Hashimoto	Ohtake Lab	Kasetsart U	Dr. Duenrut Chonudomkul
Shuhei Fusa	Kino-oka Lab	KMUTT	Dr. Anak Khantachawana
Masahito Mori	Fujiyama Lab	KMUTT	Dr. Kanokwan Poomputsa
Atsushi Yano	Ohtake Lab	CU	Dr. Onruthai Pinyakong

##### Students from Thai Universities to Osaka U

Name	Thai U	Thai Supervisor	Assigned Supervisor
Panchaphon Phathano	Mahidol U	Dr. Chuenchit Boonchird	Prof. Harashima
Naphatsamon Uthailak	Mahidol U	Dr. Watanalai Panbangred	Prof. Fujiyama
Rujiralai Poontawee	Kasetsart U	Dr. Savitree Limtong	Prof. Fujiyama
Apiwat Sangphukieo	KMUTT	Dr. Marasri Ruengjitchawalya	Prof. Nihira
Sivamoke Dissook	KMUTT	Dr. Weerayuth Kittichotirat	Prof. Fukusaki
Opor Sonpoung	KMUTT	Dr. Kanokwan Poomputsa	Prof. Fujiyama
Pimfhun Pannacha	KMUTT	Dr. Yaowaluck Maprang Roshom	Prof. Harashima
Sansanee Khiawjan	Mahidol U	Dr. Thunyarat Pongtharangkul	Prof. Ohtake
Amika Yawichai	KMUTT	Dr. Saowalak Kalapanulak	Prof. Fukui
Thanasak Lomthong	Kasetsart U	Dr. Vichien Kitpreecharvanich.	Prof. Fujiyama
Pannida Khunnamwong	Kasetsart U	Dr. Savitree Limtong	Prof. Fujiyama
Mathurin Vichachucherd	Kasetsart U	Dr. Duenrut Chonudomkul	Prof. Ohtake
Wasapon Fuangsawat	Kasetsart U	Dr. Chetsada Pothiratana	Prof. Nihira
Kitiya Piboonprai	KMUTT	Dr. Yaowaluck Maprang Roshom	Prof. Muranaka
Rochaya Chintavalakorn	KMUTT	Dr. Anak / Kwanchanok	Prof. Kino-oka
Vibhavee Sukruansuwan	CU	Dr. Suchada C. Napathorn	Prof. Harashima
Werawich Pattarayingsakul	Mahidol U	Dr. Arjaree Nilavongse	Prof. Nihira



## V. JAPAN-ASIA YOUTH EXCHANGE PROGRAM IN SCIENCE (SAKURA Exchange Program in Science)

Purpose of the Program: Asia is undergoing a period of dramatic progress. Promoting science and technology is a key engine to materialize a bright future of Asia and it is vitally important to enhance the exchange of Japanese and Asian youths who will play a crucial role in the field of science and technology. Based on this concept, “Japan-Asia Youth Exchange Program in Science” (SAKURA Exchange Program in Science) is the program for enhancing exchanges between Asia and Japan of the youths who will play a crucial role in the future field of science and technology through the close collaboration of industry-academia-government by facilitating short-term visits of competent Asian youths to Japan. This program aims at raising the interest of Asian youths toward the leading Japanese science and technologies at Japanese universities, research institutions and private companies.

List of students (July 27-Aug. 10, 2014)

Nationality	Name	Collaborative University
Cambodia	Sreyneang Nhim	KMUTT, Thailand
Cambodia	Ratny Khiev	MU, Thailand
Cambodia	Chan Davy Seng	ITB, Indonesia
Cambodia	Sochanwattey Meas	KMUTT, Thailand
Cambodia	Ratha An	MU, Thailand
Laos	Chanvilayphon Vixaysomboun	UGM, Indonesia
Vietnam	Thi Ngoc My Nguyen	CU, Thailand

## VI. SCIENTIST EXCHANGES (FY2014)

### From Japan to counterpart countries

Name	Affiliation	Visiting Period	Host Organization
Takuya Nihira	Director, Prof., ICBiotech, OU	Apr. 10-12, 2014	Philippines
		Apr. 26-May 1, 2014	Thailand
		May 17-21, 2014	Thailand
		July 5-12, 2014	Thailand
		Aug. 28-Sept. 10, 2014	CU, Thailand
		Oct. 2-4, 2014	VAST, Vietnam
		Oct. 7-16, 2014	International Symposium, Turkey
		Oct. 26-30, 2014	Vietnam
		Nov. 9-15, 2014	Thailand
		Nov. 28-Dec. 3, 2014	Thailand
		Feb. 5-14, 2015	Thailand
		Feb. 28- Mar. 7, 2015	Mahidol U, Thailand

Kazuhito Fujiyama	Prof., ICBiotech, OU	May 12-17, 2014	Indonesia
		Aug. 4-13, 2014	KMUTT, Mahidol U, Thailand
		Oct. 13-16, 2014	Thailand
		Oct. 26-30, 2014	Philippines
		Nov. 14-18, 2014	U Gadjah Mada, Indonesia
		Dec. 7-10, 2014	Kasetsart U, Thailand
		Dec. 14-17, 2014	Indonesia
		Feb. 12-16, 2015	NUS, Singapore
		Mar. 3-6, 2015	International Workshop, Malaysia
Toshiomi Yoshida	Prof. Emeritus, OU	Dec. 8-13, 2014	Kasetsart U, Thailand
Junji Tayama	Visiting Prof., ICBiotech	Aug. 4-12, 2014	KMUTT, Mahidol U, Thailand
Shigeru Kitani	Assoc. Prof., ICBiotech	Sept. 2-4, 2014	Inst. Marine Biotechnol., Vietnam
		Oct. 6-14, 2014	International Symposium, Turkey
Takao Ohashi	Assist. Prof., ICBiotech	Dec. 8-13, 2014	Kasetsart U, Thailand
Kento Kato	Harashima Lab	Aug. 5-Sept. 8, 2014	Chulalongkorn U, Thailand (JASSO SSSV)
Miyuki Nakamura	Nihira Lab		
Anna Nakamura	Ohtake Lab		
Atsushi Yano	Ohtake Lab		KMUTT, Thailand (SSSV)
Keisuke Azuma	Kino-oka Lab		
Shuhei Fusa	Kino-oka Lab		
Tatsuo Kawakami	Nihira Lab		Kasetsart U, Thailand (SSSV)
Masahito Mori	Fujiyama Lab		
Tsukushi Nagase	Nihira Lab		
Yuya Ishikawa	Fukui Lab		Mahidol U, Thailand (SSSV)
Mami Suzuki	Fujiyama Lab		
Takahiro Hashimoto	Ohtake Lab		
Yuta Okamoto	Fujiyama Lab		
Sayuri Nohara	Nihira Lab		
Keisuke Sunada	Harashima Lab		
Shoko Okita	Ohtake Lab		

### Between counterpart countries

Name	Affiliation	Visiting Period	Host Organization
Niran Roongsawang	BIOTEC, Thailand	May 21, 2014	Seminar at OU
		Feb. 20, 2015	Fujiyama Lab, ICBiotech
Kimkong Ingorn	Kasetsart U, Thailand	June 14-July 14, 2014	Fujiyama Lab, ICBiotech
Panchaphon Phathano	Mahirol U, Thailand	Aug. 29-Sept. 29, 2014	Harashima Lab (JASSO SSSV)
Naphatsamon Uthailak	Mahidol U, Thailand	Aug. 29-Sept. 29, 2014	Fujiyama Lab (SSSV)
Rujiralai Poontawee	Kasetsart U, Thailand	Sept. 1-Nov. 28, 2014	Fujiyama Lab (SSSV)
Apiwat Sangphukieo	KMUTT, Thailand	Sept. 12-Oct. 27, 2014	Nihira Lab (SSSV)
Julian Ma	St. George U, USA	Sept. 16-18, 2014	Workshop at ICBiotech
Yuri Gleba	Icon Genetics and Nomad Bioscience, Germany	Sept. 16-18, 2014	Workshop at ICBiotech
Ray Rodriguez	UC Davis, USA	Sept. 16-18, 2014	Workshop at ICBiotech
Xi Chen	UC Davis, USA	Sept. 16-18, 2014	Workshop at ICBiotech
Karen McDonald	UC Davis, USA	Sept. 16-18, 2014	Workshop at ICBiotech
Somen Nandi	UC Davis, USA	Sept. 16-18, 2014	Workshop at ICBiotech
Sivamoke Dissook	KMUTT, Thailand	Sept. 26-Nov. 7, 2014	Fukusaki Lab (SSSV)
Opor Sonpung	KMUTT, Thailand	Oct. 1- Nov. 5, 2014	Fujiyama Lab (SSSV)
Savitree Limtong	Kasetsart U, Thailand	Oct. 1-Nov. 2, 2014	Fujiyama Lab
Pimfhun Pannacha	KMUTT, Thailand	Oct. 1-Nov. 5, 2014	Harashima Lab (SSSV)
Sansanee Khiawjan	Mahidol U, Thailand	Oct. 6-Nov. 9, 2014	Ohtake Lab (SSSV)
Amika Yawichai	KMUTT, Thailand	Oct. 16-Nov. 22, 2014	Fukui Lab (SSSV)
Thanasak Lomthong	Kasetsart U, Thailand	Oct. 20-Nov. 23, 2014	Fujiyama Lab (SSSV)
Pannida Khunnamwong	Kasetsart U, Thailand	Oct. 20-Nov. 23, 2014	Fujiyama Lab (SSSV)
Mathurin Vichachucherd	Kasetsart U, Thailand	Oct. 20-Nov. 23, 2014	Ohtake Lab (SSSV)
Wasapon Fuangsawat	Kasetsart U, Thailand	Nov. 4-Dec. 9, 2014	Nihira Lab (SSSV)

Kitiya Piboonpria	KMUTT, Thailand	Nov. 4-Dec. 9, 2014	Muranaka Lab (SSSV)
Konstantin Konstantinov	Genzyme, A Sanofi Company, USA	Nov. 13, 2014	Seminar at ICBiotech
Rochaya Chintavalakorn	KMUTT, Thailand	Nov. 17-Dec. 23, 2014	Kino-oka Lab (SSSV)
Vibhavee Sukruansuwan	Chulalongkorn U, Thailand	Nov. 25-Dec. 29, 2014	Harashima Lab (SSSV)
Werawich Pattarayingsakul	Mahidol U, Thailand	Nov. 25-Dec. 29, 2014	Nihira Lab (SSSV)
Pushpa S Murthy	CFTRI, India	Nov. 27, 2014	Seminar at ICBiotech
Jiri Janata	Academy of Sciences of the Czech	Dec. 12, 2014	Seminar at ICBiotech
Floris van Eerden	U of Groningen, Netherlands	Dec. 19, 2014	Seminar at ICBiotech
Narintadench	Kasetsart U, Thailand	Jan. 8-Feb. 18, 2015	Fujiyama Lab, ICBiotech

## VII. GUESTS/VISITORS

Name	Affiliation	Staying Period
Rajata Rajatanavin	Mahidol U, Thailand	April 4, 2014
Prasit Palittapongampim	Mahidol U, Thailand	April 4, 2014
Surakit Nathisuwan	Mahidol U, Thailand	April 4, 2014
Puwat Charukamnoetkanok	Mahidol U, Thailand	April 4, 2014
Boonyarat Suwanchinda	Mahidol U, Thailand	April 4, 2014
Suchada Phruthonkul	Mahidol U, Thailand	April 4, 2014
Nguyen Tran Dien	VAST-IET, Vietnam	April 10, 2014
Nguyen Hoai Chau	VAST-IET, Vietnam	April 10, 2014
Phan Quang Thang	VAST-IET, Vietnam	April 10, 2014
Nguyen Quang Trung	VAST-IET, Vietnam	April 10, 2014
Dieu Minh Hoang	IMC Co., Ltd., Vietnam	April 14, 2014
Thanh Nguyen	IMC Co., Ltd., Vietnam	April 14, 2014
Ma. Aussielita L. Lit	Analytical Solutions & Technical Services, Philippines (UM20 Alumna)	April 28, 2014
Eudy Mabuza	South African Embassy	June 16, 2014
Daisuke Tanaka	South African Embassy	June 16, 2014
Francisco B. Elegado	UPLB (UM13 Alumna)	June 27, 2014

Lily Eurwilaichitr	BIOTEC, Thailand	July 2, 2014
Supawadee Ingsriswang	BIOTEC, Thailand	July 2, 2014
Dea Indriani Astuti	KK. Bioteknologi Mikroba, Indonesia	July 4, 2014
Pingkan Aditiawati	Institut Teknologi Bandung, Indonesia	July 4, 2014
Arinthip Thamchaipenet	Kasetsart U, Thailand	July 4, 2014
Ainun Na'im	Ministry of Education and Culture, Republic of Indonesia	Aug. 1, 2014
William G. Padolina	National Academy of Science and Technology, Philippines	Aug. 1, 2014
Bambang Soegianto	Indonesian Consulate-General, Indonesia	Aug. 1, 2014
Vichit Chitvimarn	Royal Thai Consulate General, Thailand	Aug. 1, 2014
Jerome John Castro	Philippine Consulate General, Philippines	Aug. 1, 2014
Vichienb Kitpreecha	Kasetsart U, Thailand	Sept. 4, 2014
Shahbaz Khan	UNESCO Jakarta	Sept. 26, 2014
Kazuaki Yoshida	UNESCO Paris	Sept. 26, 2014
Onur Akiyama	Eastern Black Sea Development Agency, Turkey	Sept. 30, 2014
M Suat Hacisalhoglu	Trabzon Chamber of Commerce and Industry	Sept. 30, 2014
Cetin Oktay Kaldirim	Eastern Black Sea Development Agency, Turkey	Sept. 30, 2014
Ismail Aslaner	Eastern Black Sea Development Agency, Turkey	Sept. 30, 2014
Vahit Ketvoga	Eastern Black Sea Development Agency, Turkey	Sept. 30, 2014
Benesh Joseph Kongattu	India (UB01 Graduate)	Nov. 11, 2014
Surakit Nathisuwan	Mahidol U, Thailand	Nov. 17, 2014
Watanalai Panbangred	Mahidol U, Thailand	Nov. 17, 2014
Somsak Dangtip	Mahidol U, Thailand	Nov. 17, 2014
Shuleewan Rajviroongit	Mahidol U, Thailand	Nov. 17, 2014
Wattana Weerachatanukul	Mahidol U, Thailand	Nov. 17, 2014
Lucie Najmanove	Institute of Microbiology, Academy of Sciences of the Czech republic	Dec. 12, 2014
Jiri Janata	Institute of Microbiology, Academy of Sciences of the Czech republic	Dec. 12, 2014
Lê Ngọc Minh Anh and students	Le Quy Don High School, Vietnam (JST, SAKURA Exchange Program)	Jan. 15, 2015

## VIII. COMMITTEE MEETINGS

Steering Committee Meetings of ICBiotech were convened as follows:

- April 18, 2014: Discussion on inviting a Visiting Research Scholar: Dr. Ingorn Kimkong, Thailand (June 14, 2014 – July 14, 2014).
- June 13, 2014: Discussion on inviting a Visiting Research Scholar and assigning title of professor: Dr. Savitree Limtong, Thailand (October 1, 2014 – November 2, 2014).
- July 22, 2014: Discussion on inviting a Visiting Research Scholar and assigning title of professor: Mr. Junji Tayama, Japan (August 1, 2014 – July 31, 2015).  
Discussion on inviting a Visiting Research Scholar:  
Mr. Yohanes Novi Kurniawan, Indonesia (October 1, 2014 – September 30, 2015),  
Ms. Ratama Daduang, Thailand (October 1, 2014 – September 30, 2015), and  
Ms. Dian Anggraini Suroto, Indonesia (October 1, 2014 – September 30, 2015).
- September 25, 2014: Discussion on inviting a Visiting Research Scholar:  
Dr. Nobuaki Suzuki, Japan (December 1, 2014 – November 30, 2015) and  
Dr. Hiroyuki Kajiura, Japan (December 1, 2014 – November 30, 2015).
- November 25, 2014: Discussion on inviting an Adjunct Research Scholar:  
Dr. Yoshinori Sumimura, Japan (December 1, 2014 – March 31, 2015).
- March 11, 2015:  
Report on:  
UNESCO Biotechnology School in Asia and its opening ceremony  
JST Sakura Exchange Program in Science  
International Workshop on Plant-Made-Pharmaceuticals -25 Years of Progress and Challenges  
2<sup>nd</sup> Workshop on Collaboration between Osaka University and Japanese Companies  
JASSO Short-stay and Short-visit program 2014  
Three Visiting Research Scholars staying at ICBiotech during the FY2014  
Adjunct professor for the FY2015  
Evaluation committee meeting  
Discussion on:  
Selection of a new director for the FY2015-2016  
Selection of members of the steering committee  
Selection of members of the evaluation committee  
Conferring the title on visiting professors from abroad for FY2015  
Conferring the title on visiting professors assigned from Japanese universities for FY2015  
Inviting a visiting research scholar