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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 FY2012

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 Post-Graduate Course, 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 resulted 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. Shigeru 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,
Osaka University)

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)

Dr. Suteaki Shioya (Sojo University)

Visiting Associate Professor Dr. Michiho Ito (Kyoto University)

Visiting Research Scholar Dr. Sutipa Tanapongpipat (BIOTEC, Thailand)

Dr. Nguyen Kim Nu Thao (Vietnam National University, Vietnam)

Associate Professor Dr. Shigeru Kitani

Lecturer Dr. Ryo Misaki

Assistant Professor Dr. Hiroshi Kinoshita

Dr. Takao Ohashi

Administrative Official Ms. Megumi Okamoto

Administrative Assistant Ms. Kiyoko Tanaka

Ms. Yukiko Seto

Technical Assistant Ms. Chunxiang Wang

I. COOPERATIVE RESEARCH STATION (CRS) IN SOUTHEAST ASIA

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 Training Project – One-month Lab Revisit Program

This project was conducted in August-September 2012, 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 up 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

Group A

Name	Country	Affiliation	Host University	Past UNESCO Course
Myra Tansengco	Philippine	Industrial Technol. Development Inst.	Prof. Atomi, Kyoto U	UM2711 (1999-00)
Rakhi Chaturvedi	India	Indian Inst. of Technol.	Prof. Fujiyama, Osaka U	Nominated by Dr. V. S. Bisaria (UM0103, IIT-Delhi)
Rujirek Noisangiam	Thailand	Suranaree U of Technology	Prof. Minamisawa, Tohoku U	Nominated by Dr. N. Tiaamroeng (UM1712, Suranaree U of Technol.)
Song Liu	China	Sch. Biotechnol., Jiangnan U	Prof. Kanaya, Osaka U	Nominated by Prof. Chen Jian (UM2101, Jiangnan U)
Pannida Khunnamwong	Thailand	Dept. Microbiol., Kasetsart U	Prof. Fujiyama, Osaka U	Nominated by Dr. Savitree Limtong (Kasetsart U)
Nattika Saengkrit	Thailand	NANOTEC, National Sci. and Technol.	Prof. Nihira, Osaka U	UM2907(2001-02)
Azeem Khalid	Pakistan	PMAS Arid Agric. U Rawalpindi	Prof. Nihira, Osaka U	UM3007(2002-03)

Group B

Name	Country	Affiliation	Host University	Past UNESCO Course
Lien Ha Tran	Vietnam	Hanoi U of Sci. and Technol.	Prof. Sonomoto, Kyushu U	UM2413(1996-97)
Anak Khantachawana	Thailand	Biol. Eng. Program, KMUTT	Prof. Kinooka, Osaka Uy	Nominated by Osaka U

UM: International Post-Graduate University Course in Microbiology

UB: International Inter-University Course in Biotechnology

Schedule

Group A:

August 29	Arrival in Osaka
August 30	Orientation and lab tour at Osaka U.
August 31	Lectures and Discussion meeting on the new UNESCO program
September 1	Move to assigned universities
September 2	Research and Discussion at each university
September 27	Gather at Osaka U., Submission of report
September 28	Departure from Osaka
October 31	Submission of final report

Group B:

August 29	Arrival in Osaka
August 30	Orientation and lab tour at Osaka U.
August 31	Lectures and Discussion meeting on the new UNESCO program
September 1	Move to assigned universities

September 2	Research and Discussion at each university
September 6	Gather at Osaka U., Submission of report
	Departure from Osaka
October 31	Submission of final report

Program of Lectures and Discussion

30 August 2012

Venue: Suntory Memorial Hall (5th floor of Department of Biotechnology (C3))

13:30-13:40 Opening remarks by Prof. Takuya Nihira (Director of ICBiotech, Osaka U)

13:40-13:50 Opening remarks by Prof. Hubert J. Gijzen, PhD (Director UNESCO Regional Science Bureau for Asia and the Pacific)

13:50-14:00 Opening remarks by Mr. Takashi Asai (Deputy Secretary-General, Japanese National Commission for UNESCO, MEXT)

14:00-14:10 Opening remarks by Prof. Toshiya Muranaka (Advanced Sci. and Biotechnol., Grad. Sch. Eng., Osaka U)

14:10-14:30 Break

14:30-17:00 Self introduction from each participant of the program

Venue: 'La Scena', 15th Floor of GSE Common Building

17:30- Reception

31 August 2012

Venue: Suntory Memorial Hall (5th floor of Department of Biotechnology (C3))

10:30-11:45 “Biotechnology – the next science-based revolution?” Prof. Hubert J. Gijzen, PhD (Director UNESCO Regional Science Bureau for Asia and the Pacific)

11:45-13:30 Lunch Break

Venue: Meeting room C3-432 (4th floor of Department of Biotechnology (C3))

13:30-14:15 “Structural and functional studies of enzymes from extremophiles and their application”
Dr. Yuichi Koga (Laboratory of Molecular Biotechnology, Osaka U)

14:15-15:00 “Actinomycetes, wonderful microorganisms for production of useful natural compounds”
Dr. Shigeru Kitani (Associate Prof., ICBiotech, Osaka U)

15:00-15:10 Break

15:10-15:55 “Yeast genetic resources and yeast PHO pathway”
Dr. Yoshinobu Kaneko (Yeast Genetic Resources Lab, Endowed Chair, Osaka U)

16:00-17:30 Introduction of the Current Department of Biotechnology

17:30- Discussion on the previous/new UNESCO courses

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 for 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.

[1st cohort students]

Home country	Name	Country to be allocated	University to Study	Assigned Supervisor
Cambodia	Ung Sivlin	Thailand	KMUTT	Dr. Kanokwan Poomputsa
Cambodia	Chhon Yanvary	Thailand	KMUTT	Dr. Paitip Thiavetyan
Cambodia	Ban Mab	Thailand	Mahidol U	Dr. Manop Supanharika
Cambodia	Sieng Darith	Thailand	Mahidol U	Dr. Chuenchit Boonchird
Laos	Phonepaseuth Phongphayboun	Thailand	Chulalongkorn U	Dr. Ekawan Luepromchai
Laos	Soulyavong Souphaline Liko	Indonesia	Institut Teknologi Bandung	Dr. I Nyoman P. Aryantha
Vietnam	Truong Ngoc Quang	Thailand	Kasetsart U	Dr. Savitree Limtong
Thailand	Chalisa Jaturapaktrarak	Japan	Osaka U	Dr. Hisao Ohtake
Indonesia	Fitria Ayuningtyas	Japan	Osaka U	Dr. Masahiro Kino-oka
Philippines	Mark Anthony Alfredo Badua	Japan	Osaka U	Dr. Satoshi Harashima
Indonesia	Dwi Purno Widekdo	Japan	Osaka U	Dr. Kazuhito Fujiyama

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 Shares 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 will be 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 will be formed from representative young 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.

Japanese core organization: Osaka University

Japanese coordinator: Prof. Takuya Nihira, ICBiotech, Osaka University

Counterpart country and core organization:

Prof. Watanalai Panbangred, Mahidol University, Thailand

Dr. Duong Van Hop, The Institute of Microbiology and Biotechnology, Vietnam
National University, Hanoi, Vietnam

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

Dr. Sundara Souriuodong, Science and Technology Research Institute, National
Authority for Science and Technology, Laos

3. Research Topics and Participating Members (Group leader*)

Group 1. Production of novel bioactive compounds

Japan: Takuya Nihira*(ICBiotech, Osaka U), Eiichiro Fukusaki (Osaka U), Kazumasa Hirata (Osaka U), Yasuhiro Igarashi (Toyama Prefectural U), Kenji Sonomoto (Kyushu U)

Thailand: Watanalai Panbangred (Mahidol U), Amaret Bhumiratana (Mahidol U),
Patoomratana Tuchinda (Mahidol U), Amonlaya Tosukhowong (BIOTEC),
Wonnop Visessanguan (BIOTEC), Ruud Valyasevi (BIOTEC)

Vietnam: Duong Van Hop (IMBT, Vietnam National U Hanoi)
Cambodia: Hang Chan Thon (Royal U of Phnom Penh), Thao Sokunthia (Royal U of Phnom Penh)
Laos: Souriodong Sundara (Laos National Authority of Science and Technology)

Group 2. Production of novel useful enzymes

Japan: Kazuo Sakka* (Mie U), Kozo Asano (Hokkaido U)
Thailand: Vithaya Meevootisom (Mahidol U), Suthep Wiyakrutta (Mahidol U),
Khanok Ratanakhanokchai (King Mongkut's U of Technology Thonburi)
Vietnam: Duong Van Hop (IMBT, Vietnam National U Hanoi)

Group 3. Development of novel biocatalysts

Japan: Satoshi Harashima* (Osaka U), Hisao Ohtake (Osaka U), Kazuhito Fujiyama (Osaka U),
Yasuo Igarashi (U of Tokyo)
Thailand: Savitree Limtong (Kasetsart U), Wichien Yongmanitchai (Kasetsart U),
Chuenchit Boonchird (Mahidol U), Thipa Asvarak (Mahidol U),
Thunyarat Pongtharangkul (Mahidol U), Alisa Vangnai (Chulalongkorn U),
Verawat Champreda (BIOTEC)

4. Seminar and Symposium

The Young Scientist Seminar 2012
In the framework of the JSPS Asian Core Program (2009 – 2013)
Bioresources: Potential & Applications

Date: October 4 -5th, 2012

Venue: Institute of Microbiology and Biotechnology, Conference Room 601
E2 Building, 144 Xuan Thuy, Ha Noi, Vietnam
www.imbt.vnu.edu.vn

Hosted by: Institute of Microbiology and Biotechnology (IMBT)
Vietnam National University Hanoi (VNUH)

In Association with: Osaka Univ. (OU)
Japan Society for the Promotion of Science (JSPS)

Organizing Committee

Assoc. Prof. Dr. Duong Van Hop (IMBT, VNUH, Vietnam)
Prof. Dr. Takuya Nihira (ICBiotech, Osaka U, Japan)

Secretary

Vietnamese Side

Dr. Dinh Thuy Hang, Dr. Trinh Thanh Trung, Dr. Nguyen Kim Nu Thao (IMBT, VNUH)

Japanese Side

Dr. Takuya Nihira, Dr. Hiroshi Kinoshita, Ms. Yukiko Seto (ICBiotech, Osaka U)

Program Schedule

Oral Presentations

<Day 1: October 4th, 2012>

8:00 – 8:30 Registration

8:30 – 8:40 Opening Ceremony

Welcome Address by Assoc. Prof. Dr. Duong Van Hop, Director of IMBT

Prof. Dr. Takuya Nihira, Osaka U, Project Leader

8:40 – 9:20 Invited speaker (I-1) Prof. Dr. Hisao Ohtake, Osaka U, Japan

The sustainable use of phosphorus - A new global challenge

9:20 – 10:00 Keynote Lecture 1 (K-1) Prof. Dr. Kozo Asano, Hokkaido U, Japan

Indigestible carbohydrates and intestinal microbiota

Section A: Microbial physiology (Chairperson: Mr. Yasin Kitichantaropas/Mr. Keiichi Ishido)

10:00 – 10:20 Oral Presentation 1 (O-1) Assoc. Prof. Dr. Minetaka Sugiyama, Osaka U, Japan

Mechanisms of lactic acid tolerance in *Saccharomyces cerevisiae*

10:20 – 10:40 (O-2): Mr. Yasin Kitichantaropas, Mahidol U, Thailand

Cellular mechanisms for tolerance to environmental stresses in thermotolerant *Saccharomyces cerevisiae*

10:40 – 11:00 Coffee break

11:00 – 11:20 (O-3) Ms. Sharmin Dilruba, Osaka U, Japan

Functional interrelationship of PP2C protein phosphatases as revealed by phenotypic analysis of a series of multiple disruptants in *Saccharomyces cerevisiae*

11:20 – 11:40 (O-4) Mr. Takenori Kanazawa, Osaka U, Japan

Characterization of URA3 gene in oleaginous yeast *Rhodospiridium toruloides* DMKU3-TK16 for lipid engineering

11:40 – 12:00 (O-5) Mr. Keiichi Ishido, Osaka U, Japan

Analysis of secondary metabolites in entomopathogenic fungi

12:00 – 14:00 Lunch & Poster Presentations

Section B: Whole cell catalyst and enzymes (Chairperson: Mr. Takashi Imagawa/Ms. Le Thi HoangYen)

14:00 – 14:20 (O-6) Assoc. Prof. Dr. Kohsuke Honda, Osaka U, Japan

Synthetic metabolic engineering - A novel and simple technology for freely designing an artificial metabolic pathway

14:20 – 14:40 (O-7) Ms. Nhuengtida Chanarpakorn, Mahidol U, Thailand

Enhanced regio-selective alkane hydroxylation via coupled enzyme system

14:40 – 15:00 (O-8) Mr. Takashi Imagawa, Osaka U, Japan

Construction of the artificial pyruvate oxidation pathway by synthetic metabolic engineering

15:00 – 15:20 (O-9) Assist. Prof. Dr. Takao Ohashi, Osaka U, Japan

Glycoengineering in the fission yeast *Schizosaccharomyces pombe* - a promising technology for the production of glycoproteins

15:20 – 15:40 Coffee break

15:40 – 16:00 (O-10) Ms. Pirapan Polburee, Kasetsart U, Thailand

Selection and taxonomic characterization of oleaginous yeast for lipid production from glycerol

16:00 – 16:20 (O-11) Ms. Le Thi Hoang Yen, IMBT - VNU Hanoi, Vietnam

Study on xylanase from *Aspergillus niger* VN09-0119 isolated from a preserved forest in Vietnam

16:20 – 16:40 (O-12) Mr. Paripok Phitsuwan, King Mongkut's TU Thonburi, Thailand

Tepidimicrobium xylanilyticum BT14 produces multienzyme complexes to degrade plant cell wall

16:40 – 17:00 (O-13) Ms. Tran Thi Loan, IMBT - VNU Hanoi, Vietnam

Effects of some plant proteinase inhibitors from *Momordica coinchinensis* on several meat-spoilage bacteria

18:00 Welcome dinner (Japanese-Vietnamese Restaurant Nagomi Hanoi)

<Day 2: October 5th, 2012>

8:30 – 9:10 (K-2) Prof. Dr. Yasuhiro Igarashi, Toyama Pref. U, Japan

Microbial secondary metabolites: potential source of structural diversity for drug discovery.

Section C: Novel compounds (Chairperson: Mr. Linkai Yu/Ms. Notthaporn Phruksahiran)

- 9:10 – 9:30 (O-14) Assist. Prof. Dr. Naoya Oku, Toyama Pref. U, Japan
Complete stereochemistry of rakicidin A, an actinomycetal cytotoxic depsipeptide
- 9:30 – 9:50 (O-15) Ms. Notthaporn Phrueksahiran, Mahidol U, Thailand
Screening and identification of antifungal metabolites from *Streptomyces* spp
- 9:50 – 10:10 (O-16) Ms. Nghiem Phuong Hien, IMBT-VNU Hanoi, Vietnam
Primary study on protease inhibitors from bacteria and actinomycete
- 10:10 – 10:30 (O-17) Mr. Linkai Yu, Toyama Pref. U, Japan
The structures and activities of new anti-invasive compounds from *Streptomyces* sp.
- 10:30 – 10:50 Coffee break

Section D: Biosynthesis (Chairperson: Ms. Fuqin Mu/Ms. Chinatsu Shimafuji)

- 10:50 – 11:10 (O-18) Assist. Prof. Dr. Hiroshi Kinoshita, Osaka U, Japan
Development of the genetic techniques to utilize biosynthetic genes for secondary metabolites from filamentous fungi
- 11:10 – 11:30 (O-19) Assist. Prof. Dr. Takeshi Zendo, Kyushu U, Japan
Screening and characterization of novel bacteriocins from lactic acid bacteria
- 11:30 – 11:50 (O-20) Ms. Chinatsu Shimafuji, Kyushu U, Japan
In vitro catalytic activity of N-terminal and C-terminal domains in NukM, the modification enzyme of lantibiotic nukacin ISK-1
- 11:50 – 12:10 (O-21) Ms. Fuqin Mu, Kyushu U, Japan
Analysis of gene cluster involved in production of the circular bacteriocin leucocyclicin Q by *Leuconostoc mesenteroides* TK41401
- 12:10 – 14:00 Lunch

Section E: Whole cell metabolites and metagenome

(Chairperson: Mr. Shinya Yamamoto/ Dr. Phan Thi Phuong Hoa)

- 14:00 – 14:20 (O-22) Mr. Shinya Yamamoto, Osaka U, Japan
Metabolite profiling of soy sauce using gas chromatography with Time-of-Flight Mass spectrometry and analysis of correlation with quantitative descriptive analysis
- 14:20 – 14:40 (O-23) Mr. Hirofumi Akiyama, Toyama Pref. U, Japan
Temperature-dependent metabolic change and exhaustive metabolite analysis in Thai endophytic *Microbispora*
- 14:40 – 15:00 (O-24) Mr. Kazuki Yamamoto, Toyama Pref. U, Japan
Analysis of secondary metabolism in a thermophilic Gram-positive bacterium *Thermosporothrix* belonging to the phylum *Chloroflexus*
- 15:00 – 15:20 (O-25) Dr. Phan Thi Phuong Hoa, School of Medicine and Pharmacy, VNUH
Screening for actinomycetes isolated from soil with the ability to inhibit *Xanthomonas oryzae* pv. *oryzae* causing rice bacterial blight disease in Vietnam
- 15:20 – 15:40 Coffee break
- 15:40 – 16:00 (O-26) Dr. Wuttichai Mhuantong, NIBB, Thailand
Comparative analysis on metabolic capabilities of metagenomes from lignocellulose degrading environments
- 16:00 – 16:20 (O-27) Mr. Keita Kato, Kyushu U, Japan
Microecological characterization of dominant *Lactobacillus* species in nukadoko, a fermented rice bran used for Japanese pickles
- 16:20 – 16:40 (O-28) Ms. Nguyen Thi Hoa, IMBT-VNU Hanoi, Vietnam
Degradation characteristics of microcystin by isolated bacteria from Hoan Kiem Lake, Hanoi
- 16:40 – 17:20 Closing Ceremony
Presentation Award Ceremony
Closing Remark by Prof. Dr. Takuya Nihira

Poster Presentations

- P-1 (Section D) Mr. Sor Ratha (Royal U of Phnom Penh, Cambodia)
Potential of rotifers as bioindicator for freshwater quality: A case study in the upper part of Cambodian Mekong river basin
- P-2 (Section C) Mr. Korm Sovannarith (Royal U of Phnom Penh, Cambodia)
Screening of *Streptomyces* active against plant pathogens
- P-3 (Section C) Mr. Keo Phommavong (Biotechnology and Ecology Institute, Laos)

- Endophytic actinomycetes with inhibitory activity against bacterial pathogens
- P-4 (Section C) Ms. Bui Thai Hang (College of Food Industry, Danang, Vietnam)
Screening LAB for bacteriocin production from fermented foods in Vietnam
- P-5 (Section A) Ms. Nguyen Thu Hoai (Vietnam-Russia Tropical Center, Hanoi)
Methane fermentation of seaweed in saline water condition
- P-6 (Section C) Mr. Dao Xuan Duong (Hanoi Open U)
Primary screening bacteriocin producing strains from Vietnamese vegetables
- P-7 (Section C) Ms. Tran Thi Trang (IMBT, Hanoi, Vietnam)
Diversity of subtilisin genes of bacteria isolated from some traditional fermented foods in Vietnam
- P-8 (Section B) Ms. Phan Thi Mai (U of Sciences, VNUH)
Production and characterization of thermostable phytase from *Bacillus amyloliquefaciens* SP19.1 isolated from Hoang Lien National Park soil
- P-9 (Section B) Ms. Tran Thi Le Quyen (IMBT, Hanoi, Vietnam)
Optimization of thermostable xylanase production by *Streptomyces misionensis* in solid-state fermentation
- P-10 (Section A) Ms. Luu Thi Phuong (U of Eng. and Technol., VNUH)
Study on characteristic green algae *Botryococcus* strains isolated in Vietnam

List of Participants

VIETNAM	
Assoc. Prof. Dr. Duong Van Hop	Director of Institute of Microbiology and Biotechnology (IMBT) Vietnam National University Hanoi (VNUH)
Dr. Nguyen Huynh Minh Quyen	Deputy Director IMBT
Ms. Phan Thi Ha	Head of the Administration Office, IMBT
Dr. Dinh Thuy Hang	Head of Microbial Ecology Lab., IMBT
Dr. Nguyen Quynh Uyen	Head of General Lab., IMBT
Dr. Nguyen Thi Hoai Ha	Head of Algal Biology Lab., IMBT
Dr. Nguyen Kim Nu Thao	Head of Microbial Biotechnology R&D Lab., IMBT
Dr. Dao Thi Luong	Vice Director, Vietnam Type Culture Collection (VTCC) , IMBT
Dr. Trinh Thanh Trung	VTCC, IMBT
Ms. Le Thi Hoang Yen	VTCC, IMBT
Mr. Nguyen Anh Tuan	VTCC, IMBT
Ms. Tran Thi Le Quyen	VTCC, IMBT
Ms. Nghiem Phuong Hien	Protein and Enzyme Lab., IMBT
Ms. Tran Thi Loan	Protein and Enzyme Lab., IMBT
Ms. Tran Thi Trang	Protein and Enzyme Lab., IMBT
Ms. Hoang Thu Ha	Protein and Enzyme Lab., IMBT
Dr. Phan Thi Phuong Hoa	School of Medicine and Pharmacy, VNUH
Mr. Dao Xuan Duong	Hanoi Open University
Ms. Nguyen Thu Hoai	Vietnam-Russia Tropical Center
Ms. Bui Thai Hang	College of Food Industry, Danang
Ms. Phan Thi Mai	Hanoi University of Science, VNUH
Ms. Nguyen Thi Hoa	University of Engineering and Technology, VNUH
Ms. Luu Thi Phuong	Algal Biology Lab., IMBT, VNUH
CAMBODIA	
Dr. Sokunthia Thao	Faculty of Science, Royal University of Phnom Penh
Mr. Sor Ratha	Faculty of Science, Royal University of Phnom Penh
Mr. Korm Sovannarith	Faculty of Science, Royal University of Phnom Penh
LAOS	
Dr. Kosonh Xayphakatsa	BEI, Ministry of Science and Technology
Mr. Keo Phommavong	BEI, Ministry of Science and Technology
THAILAND	
Prof. Dr. Watanalai Panbangred	Faculty of Science, Mahidol University
Dr. Verawat Champreda	National Center for Genetic Engineering and Biotechnology
Dr. Wuttichai Mhauntong	National Center for Genetic Engineering and Biotechnology

Ms. Nhuengtida Chanarpakorn	Faculty of Science, Mahidol University
Ms. Notthaporn Phrueksahiran	Faculty of Science, Mahidol University
Mr. Yasin Kitichantaropas	Faculty of Science, Mahidol University
Ms. Pirapan Polburee	Faculty of Science, Kasetsart University
Mr. Paripok Phitsuwan	King Mongkut's University of Technology Thonburi
JAPAN	
Prof. Dr. Takuya Nihira	International Center for Biotechnology, Osaka University
Prof. Dr. Hisao Ohtake	Graduate School of Engineering, Osaka University
Prof. Dr. Kozo Asano	Graduate School of Agriculture, Hokkaido University
Prof. Dr. Yasuhiro Igarashi	Biotechnology Research Center, Toyama Prefectural University
Ass. Prof. Dr. Kohsuke Honda	Graduate School of Engineering, Osaka University
Dr. Hiroshi Kinoshita	International Center for Biotechnology, Osaka University
Ass. Prof. Dr. Minetaka Sugiyama	Graduate School of Engineering, Osaka University
Dr. Takao Ohashi	International Center for Biotechnology, Osaka University
Ms. Sharmin Dilruba	Graduate School of Engineering, Osaka University
Mr. Shinya Yamamoto	Graduate School of Engineering, Osaka University
Mr. Takashi Imagawa	Graduate School of Engineering, Osaka University
Mr. Keiichi Ishido	Graduate School of Engineering, Osaka University
Mr. Takenori Kanazawa	Graduate School of Engineering, Osaka University
Dr. Takeshi Zendo	Faculty of Agriculture, Kyushu University
Ms. Chinatsu Shimafuji	Faculty of Agriculture, Kyushu University
Ms. Fuqin Mu	Faculty of Agriculture, Kyushu University
Mr. Keita Kato	Faculty of Agriculture, Kyushu University
Dr. Naoya Oku	Biotechnology Research Center, Toyama Prefectural University
Mr. Kazuki Yamamoto	Biotechnology Research Center, Toyama Prefectural University
Mr. Hirofumi Akiyama	Biotechnology Research Center, Toyama Prefectural University
Mr. Linkai Yu	Biotechnology Research Center, Toyama Prefectural University
Mr. Kenichi Wada	Department of International Affairs Administration Bureau, Osaka University
Ms. Sayaka Minami	Department of International Affairs Administration Bureau, Osaka University
Ms. Yukiko Seto	International Center for Biotechnology, Osaka University

5. Committee Meeting

July 2, 2012. Domestic Members Meeting at ICBiotech, Osaka University, attended by Japanese cooperative researchers.

January 21, 2013. Domestic Members Meeting at ICBiotech, Osaka University, attended by Japanese cooperative researchers.

IV. JSPS BILATERAL PROGRAM OF JOINT RESEARCH PROJECT AND SEMINARS –VIENAM (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.

V. JASSO SHORT STAY & SHORT VISIT (SS & SV) PROGRAM (April 2012-March 2013)

Short-term stay and short-term visit program (SS&SV) by the Japan Student Services Organization (JASSO) is a program of both student acceptance and dispatch by Japanese universities. It must be conducted under each Japanese university's control and responsibility. JASSO provides selected students with monthly stipend of less than 3 months. In 2012, 10 Japanese MS students stayed in universities in Thailand (Mahidol University, Chulalongkorn University, Kasetsart University, King Mongkut's University of Technology Thonburi), and conducted research for 4 weeks, August 5-September 9, 2012). Whereas 6 students (Mahidol University, King Mongkut's University of Technology Thonburi, Kasetsart University) from Thailand conducted research from July 5 to August 2, 2012, in the laboratories of Prof. Harashima, Prof. Nihira and Prof. Fujiyama at the Graduate School of Engineering, Osaka University.

VI. JST-JICA (SATREPS) (2008-2012)

SATREPS (Science and Technology Research Partnership for Sustainable Development) is a Japanese government program that promotes international joint research targeting global issues. SATREPS projects are expected to lead to outcomes with potential for practical utilization, and to enhance research capacity in the developing country. The program is conducted through collaboration between two Japanese government agencies: the Japan Science and Technology Agency (JST) and the Japan International Cooperation Agency (JICA).

ICBiotech works as a cooperative group to the following project.

Topic: Research and Development of Therapeutic Products against Infectious Diseases, especially Dengue Virus Infection Creating Drugs Effective against the Dengue Virus from Human Beings.

Principal Investigator: Prof. IKUTA Kazuyoshi/Research Institute for Microbial Diseases, Osaka University.

Research Period: 4 years from 2008.

Counterpart Research Institutions: Ministry of Public Health-National Institute of Health (NIH), Mahidol University (Thailand).

Research Project:

Preventing the further spread of dengue fever in Southeast Asia: Dengue fever is a viral disease spread by mosquitoes that infects 50 million people living in the tropics every year, with 250,000 suffering seriously as a result, but no effective therapies have yet been discovered. Researches are for studying patients and microorganisms from Thailand to contribute to the development of drugs effective against dengue fever. Since the human body creates proteins (antibodies) to combat the dengue virus, investigating these proteins to find any that appear particularly effective against the virus and also searching microorganisms prevalent in Thailand for compounds that block the virus.

Conducting experiments to develop new drugs following the successful creation of antibodies: Having succeeded in creating many human-derived antibodies against the dengue virus, and also setting a course of action for research on influenza virus and botulinum toxin, the project will conduct animal and other experiments to assess

the effectiveness of antibodies showing the most potential with the aim of developing new therapeutic drugs.

VII. SCIENTIST EXCHANGES

From Japan to counterpart countries

Name	Affiliation	Visiting Period	Host Organization
Takuya Nihira	Director, Prof., ICBiotech, Osaka U	April 9-14, 2012	Mahidol U
		May 9-13, 2012	Philippine Society for Microbiology
		May 18-26, 2012	UNESCO Jakarta
		June 10-16, 2012	Mahidol U, National Authority of Sci. and Technol.
		July 29- Aug. 7, 2012	Mahidol U
		Sept. 2-8, 2012	Mahidol U, hnom Penh U
		Oct. 1-8, 2012	YSS Hanoi, VNUH
		Oct. 14-18, 2012	Mahidol U
		Nov. 19-25, 2012	Mahidol U
		Dec. 15-21, 2012	Mahidol U
		Dec. 26-29, 2012	Mahidol U
		Jan. 10-19, 2013	Mahidol U
		Feb. 26- Mar. 5, 2013	Mahidol U
		March 19-24, 2013	Mahidol U
Kazuhito Fujiyama	Prof., ICBiotech, Osaka U	April 9-12, 2012	Mahidol U
		May 20-25, 2012	UNESCO Jakarta
		June 7-10, 2012	Kasetsart U
		Aug. 4-8, 2012	KMUTT
		Oct. 4-5, 2012	YSS Hanoi, Vietnam
		Oct. 13-18, 2012	Italian Natl. Agency for New Technology
		Nov. 12-15, 2012	Mahidol U
		Dec. 5-9, 2012	Mahidol U
		Dec. 16-20, 2012	Mahidol U
		Feb. 26- Mar. 1, 2013	Mahidol U
		Mar. 4-8, 2013	KMUTT

Satoshi Harashima	Prof., Grad. Sch. of Eng., Osaka U	July 30- Aug. 3, 2012	Mahidol U
Kozo Asano	Prof., Grad. Sch. of Agriculture, Hokkaido U	Oct. 1-7, 2012	YSS Hanoi, Vietnam
Yasuhiro Igarashi	Prof., Biotechnol. Res. Center, Toyama Pref. U	Oct. 2-7, 2012	YSS Hanoi, Vietnam
Naoya Oku	Assist. Prof., Biotechnol. Res. Center, Toyama Pref. U	Oct. 4-5, 2012	YSS Hanoi, Vietnam
Kazuki Yamamoto	Ph.D. student, Biotechnol. Res. Center, Toyama Pref. U	Oct. 4-5, 2012	YSS Hanoi, Vietnam
Hirofumi Akiyama	Ph.D. student, Biotechnol. Res. Center, Toyama Pref. U	Oct. 4-5, 2012	YSS Hanoi, Vietnam
		Oct. 6-Nov. 1, 2012	Mahidol U
Wu Lin Ghai	Ph.D. student, Biotechnol. Res. Center, Toyama Pref. U	Oct. 4-5, 2012	YSS Hanoi, Vietnam
Hisao Otake	Prof., Grad. Sch. Eng., Osaka U	Oct. 3-7, 2012	YSS Hanoi, Vietnam
Kohsuke Honda	Assoc. Prof., Grad. Sch. Eng., Osaka U	July 29- Aug. 5, 2012	Mahidol U
		Oct. 4-5, 2012	YSS Hanoi, Vietnam
Shigeru Kitani	Assoc. Prof. ICBiotech, Osaka U	Oct. 4-5, 2012	YSS Hanoi, Vietnam
		Dec. 2-12, 2012	Phnom Penh U, Cambodia
Ryo Misaki	Lecturer, ICBiotech, Osaka U	July 16-21, 2012	Mahidol U
		Dec. 16-20, 2012	Mahidol U
		Mar. 12-16, 2013	Mahidol U
Hiroshi Kinoshita	Assist. Prof., ICBiotech, Osaka U	July 19- Aug. 2, 2012	VNUH, Vietnam
		Sept. 24-, 2012	VNUH, Vietnam
		Oct. 2-3, 2012	Hanoi U of Sci. and Technol., MOST, JICA, Vietnam
		Oct. 4-5, 2012	YSS Hanoi, Vietnam
Takao Ohashi	Assist. Prof., ICBiotech, Osaka U	Aug. 21-28, 2012	Kasetsart U, Thailand
		Oct. 3-7, 2012	YSS Hanoi, Vietnam
Minetaka Sugiyama	Assoc. Prof., Grad. Sch. Eng., Osaka U	Oct. 3-7, 2012	YSS Hanoi, Vietnam
		Jan. 27- Feb. 3, 2013	Mahidol U
Dilruba Sharmin	Student, Grad. Sch. Eng., Osaka U	Oct. 4-5, 2012	YSS Hanoi, Vietnam
Shinya Yamamoto	Student, Grad. Sch. Eng., Osaka U	Oct. 4-5, 2012	YSS Hanoi, Vietnam

Takashi Imagawa	Student, Grad. Sch. Eng., Osaka U	Oct. 4-5, 2012	YSS Hanoi, Vietnam
Takenori Kanazawa	Student, Grad. Sch. Eng., Osaka U	Oct. 4-5, 2012	YSS Hanoi, Vietnam
Keiichi Ishido	Student, Grad. Sch. Eng., Osaka U	Oct. 4-5, 2012	YSS Hanoi, Vietnam
Takeshi Zendo	Assist. Prof., Fac. Agric., Kyushu U	Oct. 4-7, 2012	YSS Hanoi, Vietnam
Chinatsu Shimafuji	Student, Fac. Agric., Kyushu U	Oct. 4-5, 2012	YSS Hanoi, Vietnam
Fuqin Mu	Student, Fac. Agric., Kyushu U	Oct. 4-5, 2012	YSS Hanoi, Vietnam
Keita Kato	Student, Fac. Agric., Kyushu U	Oct. 4-5, 2012	YSS Hanoi, Vietnam
Yoshimitsu Masuda	Researcher, Fac. Agric., Kyushu U	Oct. 1-30, 2012	BIOTEC, Thailand
Rodney H. Perez	Student, Fac. Agric., Kyushu U	Oct. 1-30, 2012	BIOTEC, Thailand
Hiroimi Maekawa	Assoc. Prof., Grad. Sch. Eng., Osaka U	Dec. 17-23, 2012	Mahidol U

Between counterpart countries

Name	Affiliation	Visiting Period	Host Organization
Keo Phommavong	National Authority for Sci. and Technol. (NAST) Laos	July 15- Sept. 15, 2012	CRS, Mahidol U, Thailand
		Oct. 3-7, 2012	Vietnam National U, Hanoi
Korm Sovannarith	Royal U Phnom Penh, Cambodia	July 15- Sept. 15, 2012	CRS, Mahidol U, Thailand
		Oct. 3-7, 2012	Vietnam National U, Hanoi
Sokunthia Thao	Royal U Phnom Penh	Oct. 3-7, 2012	Vietnam National U, Hanoi
Sor Ratha	Royal U Phnom Penh	Oct. 3-7, 2012	Vietnam National U, Hanoi
Xayphakatsa Kosonh	Ministry of Sci. and Technol.	Oct. 3-7, 2012	Vietnam National U, Hanoi
Khanok Ratanakhanokchai	KMUTT, Thailand	Oct. 7-15, 2012	Prof. Sakka, Mie U, Japan
Nguyen Kim Nu Thao	Inst. of Microbiol. and Biotechnol., VNUH, Vietnam	Feb. 1-, 2013	ICBiotech, Osaka U, Japan

VIII. GUESTS/VISITORS

Name	Affiliation	Staying Period
Irisa Trianti	King Mongkut's U of Technology Thonburi	Jul. 5- Aug. 2, 2012
Vorawit Ananphongmanee	Mahidol U	Jul. 7-27, 2012
Notthaporn Phrueksahiran	Mahidol U	Jul. 11-27, 2012
Pirapan Polburee	Kasetsart U	Jul. 11-28, 2012
Rungluk Kaewwichian	Kasetsart U	Jul. 11-28, 2012
Pornkanok Chomdee	Kasetsart U	Jul. 11-28, 2012
Pumin Nutaratat	Kasetsart U	Jul. 11-28, 2012
Hubert J. Gijzen	UNESCO Jakarta	Aug. 29-31, 2012
Ousana Boonlucksanawong	Mahidol U	Sep. 2-29, 2012
Nguyen Thuy Nga	Vietnam Academy of Sci. and Technol.	Sep. 10- Oct. 9, 2012
Phan Van Kiem	Vietnam Academy of Sci. and Technol.	Sep. 14, 2012
Nguyen Quang Vinh	Vietnam Academy of Sci. and Technol.	Sep. 14, 2012
Trinh The Cuong	Vietnam Academy of Sci. and Technol.	Sep. 14, 2012
Phan Thanh Thao	Vietnam Academy of Sci. and Technol.	Sep. 14, 2012
Nguyen Quang Chinh	Vietnam Academy of Sci. and Technol.	Sep. 14, 2012
Nguyen Thi Hue	Vietnam Academy of Sci. and Technol.	Sep. 14, 2012
Ngo Thi Thuy Nga	Vietnam Academy of Sci. and Technol.	Sep. 14, 2012
Nguyen Thi Thanh Xuan	Vietnam Academy of Sci. and Technol.	Sep. 14, 2012
Dinh Van Huy	Vietnam Academy of Sci. and Technol.	Sep. 14, 2012
Nguyen Xuan Binh	Vietnam Academy of Sci. and Technol.	Sep. 14, 2012
Nguyen Thi Thu Thao	Vietnam Academy of Sci. and Technol.	Sep. 14, 2012
Le Tat Thanh	Vietnam Academy of Sci. and Technol.	Sep. 14, 2012
Le Thi Ngoc Tieu	Vietnam Academy of Sci. and Technol.	Sep. 14, 2012
Tran Thi Nga	Vietnam Academy of Sci. and Technol.	Sep. 14, 2012
Vu Thi Thuan	Vietnam Academy of Sci. and Technol.	Sep. 14, 2012
Nguyen Ngoc Anh	Vietnam Academy of Sci. and Technol.	Sep. 14, 2012
Dao Anh Khiem	Vietnam Academy of Sci. and Technol.	Sep. 14, 2012
Pham Huu The	Vietnam Academy of Sci. and Technol.	Sep. 14, 2012
Vuong Thi Viet Nga	Vietnam Academy of Sci. and Technol.	Sep. 14, 2012

Vu Thi Lan Huong	Vietnam Academy of Sci. and Technol.	Sep. 14, 2012
Marcello Donini	ENEA Biotechnology Laboratory	Sep. 18-19, 2012
Nardi Luca	ENEA Biotechnology Laboratory	Sep. 18-19, 2012
Sakarindr Bhumiratana	King Mongkut's U of Technology Thonburi	Oct. 10, 2012
Morakot Tanticharoen	King Mongkut's U of Technology Thonburi	Oct. 10, 2012
Anak Khantachawana	King Mongkut's U of Technology Thonburi	Oct. 10, 2012
Apiradee Hongsthong	King Mongkut's U of Technology Thonburi	Oct. 10, 2012
Jarunya Narangajavana	Mahidol U	Oct. 21-30, 2012
Irfan Priyambada	U Gadjah Mada	Oct. 25-26, 2012
Donny Widiyanto	U Gadjah Mada	Oct. 25-26, 2012
Tati Subahar	Institute Technology Bandung	Oct. 25-26, 2012
Reynaldo V. Eborá	U of the Philippines Natl. Inst. of Mol. Biol.	Oct. 25-26, 2012
Chuenchit Boonchird	Mahidol U	Oct. 25-26, 2012
Watanalai Panbangred	Mahidol U	Oct. 25-26, 2012
Savitree Limtong	Kasetsart U	Oct. 25-26, 2012
Marasri Ruengjitchatchawalya	King Mongkut's U of Technology Thonburi	Oct. 25-26, 2012
Suchada Chanprateep	Chulalongkorn U	Oct. 25-26, 2012
Duong Van Hop	VNU, Inst. of Microbiol. and Biotechnol.	Oct. 25-26, 2012
Li Phi Nga	Vietnam National U	Oct. 25-26, 2012
Francisco Banzuela Elegado	U of the Philippines Los Baños	Oct. 25-26, 2012
Ermie Bacarra	DOST	Nov. 30, 2012
Cuc Nguyen Thi	Vietnam Academy of Sci. and Technol.	Dec. 2-29, 2012
Bundit Fungtammasan	King Mongkut's U of Technology Thonburi	Feb. 22, 2013
Chaiyong Koaykul	King Mongkut's U of Technology Thonburi	Mar. 15-31, 2013
Nuttakrit Limjanthong	King Mongkut's U of Technology Thonburi	Mar. 15-31, 2013
Pirawan Chantachotikul	King Mongkut's U of Technology Thonburi	Mar. 15-31, 2013
A. K. M. Hasan Quamrul	Self employee	Mar. 13, 2013
Vu Ngoc Long	Vietnam Academy of Sci. and Technol.	Mar. 22, 2013
Le Quynh Lien	Vietnam Academy of Sci. and Technol.	Mar. 22, 2013
Pham Thi Phuong	Vietnam Academy of Sci. and Technol.	Mar. 22, 2013
Hugo Vits	Shell Technology Center Bangalore	Mar. 29, 2013