

# The 6th Molecular Biology and Biotechnology Workshop

International Conference Center, Osaka University  
November 21-22, 2002

Osaka University will host the 6th Molecular Biology and Biotechnology Workshop to be held on November 21-22, 2002 in Osaka University. The workshop will be organized to run several sessions including the topics concerning of bio-informatics and bio-process innovation, in addition to the sessions that often adopted in the previous workshops.

## **PROGRAM**

Plenary lectures

### **Nov. 21 MORNING**

<b>09:30-09:40</b>		<b>Opening remarks</b> <b>Organizer (Osaka University)</b>
<b>Session I</b>		Presiders: Donald C. Chang (HKUST), Jung-Yaw Lin (NTU)
<b>Time</b>		Title of lecture; <u>Lecturer</u> (Affiliation)
<b>09:40-10:00</b>	1.	The first model mouse for mitochondrial DNA-based diseases; <u>Kazuto Nakada</u> (Univ. of Tsukuba, Tsukuba)
<b>10:00-10:20</b>	2.	Expansion of hematopoietic stem cells and liver development; <u>Atsushi Miyajima</u> (Univ. of Tokyo, Tokyo)
<b>10:20-10:40</b>	3.	TBA (To be announced); <u>Hideo Shinagawa</u> (Osaka Univ., Suita)
<b>10:40-11:20</b>		<b>Poster Discussion with coffee</b>
<b>11:20-11:40</b>	4.	Chip initiates degradation of smad3 and blocks TGF- $\beta$ signal through ubiquitination pathway; <u>Zhijie Chang</u> (Tsinghua Univ., Beijing, China)
<b>11:40-12:00</b>	5.	Interleukin 6 (IL 6) blocking therapy with humanized ant-IL-6 receptor monoclonal antibody in rheumatoid arthritis; <u>Kazuyuki Yoshizaki</u> (Osaka Univ., Suita)
<b>12:00-13:00</b>		<b>Photographing and Lunch</b>

## Nov. 21 AFTERNOON

<b>Session II</b>		Presiders: Chang-Won Kang (KAIST), Zhijie Chang (THU)
<b>Time</b>		Title of lecture; <u>Lecturer</u> (Affiliation)
13:00-13:20	6.	Study signaling mechanisms of programmed cell death in a single living cell; <u>Donald C. Chang</u> (Hong Kong Univ. of Sci. Tech., Hong Kong)
13:20-13:40	7.	Distinct Rac regulators in cell migration, axon outgrowth and cell-corpse engulfment in <i>C. elegans</i> ; <u>Yi-Chun Wu</u> (National Taiwan Univ., Taipei)
13:40-14:00	8.	Functional domains of a pore-forming cardiotoxic protein, volvatoxin A2; <u>Jung-Yaw Lin</u> (National Taiwan Univ., Taipei)
14:00-14:20	9.	Protein folding and catalytic mechanism of homologous ketosteroid isomerases; <u>Kwan-Yong Choi</u> (Pohang Univ. of Sci. Tech., Pohang)
14:20-14:40	10.	A novel transcription co-activator in cholesterol and lipid metabolism; <u>Jae-Woon Lee</u> (Pohang Univ. of Sci. Tech., Pohang)
14:40-15:00		<b>Break</b>
<b>Session III</b>		Presiders: Yi-Chun Wu (NTU), Kwan Yong Choi (POSTech)
<b>Time</b>		Title of lecture; <u>Lecturer</u> (Affiliation)
15:00-15:20	11.	TBA; <u>Toshihiro Akaike</u> (Tokyo Inst. of Tech., Tokyo)
15:20-15:40	12.	A novel selection method of antibody fragments using the mechanism of Fv fragment stabilization in the presence of antigen; <u>Izumi Kumagai</u> (Tohoku Univ, Sendai)
15:40-16:00	13.	Changes in the RNA contact to RNA polymerase during transition from elongation to termination; <u>Chang-Won Kang</u> (KAIST, Taejong)
16:00-16:20	14.	The role of Dna2 helicase activity and replication protein A in Okazaki fragment processing in eukaryotes; <u>Yeon-Son Seo</u> (KAIST, Taejong)
16:20-16:40	15.	TBA; <u>Kazuo Nagasawa</u> (Univ. of Tokyo, Tokyo)
18:30-20:30		<b>Reception party (Kyoto Hotel, Ibaragi)</b>

## Nov. 22 MORNING

<b>Session IV</b>		Presiders: Jae-Woon Lee (POSTech), Yeon-Son Seo (KAIST)
<b>Time</b>		Title of lecture; <u>Lecturer</u> (Affiliation)
09:30-09:50	16.	Metabolic pathway modeling of <i>Saccharomyces cerevisiar</i> based on genome information for industrial application; <u>Suteaki Shioya</u> (Osaka Univ., Suita)
09:50-10:10	17.	Unique reactions of lactic acid bacteria useful for conjugated fatty acid production; <u>Jun Ogawa</u> (Kyoto Univ., Kyoto)
10:10-10:30	18.	Mechanism of acid adaptation of a fish living in a pH 3.5 lake; <u>Shigehisa Hirose</u> (Tokyo Inst. of Technology, Tokyo)
10:30-10:50		<b>Break</b>
10:50-11:10	19.	PIF3 acts both positively and negatively in the phytochrome-mediated light signal transduction; <u>Gil-Tsu Choi</u> (KAIST, Taejon)
11:10-11:30	20.	Isolation and characterization of photosynthesis mutants in <i>Arabidopsis thaliana</i> ; <u>Tsuyoshi Endo</u> (Kyoto Univ., Kyoto)
11:30-11:50	21.	Physiological state control of animal cell cultivation for production of physiological active substances; <u>Toshiomi Yoshida</u> (Osaka Univ., Suita)
11:50-12:50		<b>Lunch</b>
13:00-		<b>Excursion in Kyoto</b>

***The three Sessions will be organized to discuss the following topics and other:***

1. Bio-informatics
2. Cell and Tissue Engineering
3. Medical Biotechnology
4. Bio-process Innovation
5. Bio-molecular Engineering
6. Resources and Environmental Biotechnology

Ref. Subjects discussed in the last 3 workshops.

1999 Sessions: A) Medical Biotechnology, B) Cell and Tissue Engineering, C) Biomolecular and Bioprocess Engineering, D) Nano-biology,  
(Tokyo Institute of Technology)

2000 No special theme title, mostly the papers related genomics, (POSTECH)

2001 “Life Sciences Research and Industrialization in 21 Century”, (Fudan University)

# 6th Molecular Biology and Biotechnology

November 21-22, 2002 Osaka University

## Venue

Icho-Kaikan, Osaka University (2-2 Yamada-oka, Suita-shi, Osaka 565-0871, Japan)

## Organizing Committee

Chairman: Prof. Toshiomi Yoshida  
Vice-chairman: Prof. Suteaki Shioya  
Committee members: Prof. Ki-ichi Fukui, Prof. Satoshi Harashima, Prof. Tatsuji Seki, Assoc. Prof. Mutsumi Takagi, Assoc. Prof. Hiroshi Shimizu, Res. Assoc. Mikio Nakajima, Res. Assoc. Takeshi Omasa

*Number of participants 100*

## PROGRAM

### Plenary lectures

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10:20-10:40	3.	Genome analysis of the <i>E. coli</i> 0157:H7 strain from Sakai outbreak; <u>Hideo Shinagawa</u> (Osaka Univ., Suita)
10:40-11:20		<b>Poster Discussion with coffee</b>
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16:20-16:40	15.	Novel anti-tumor marine natural guanidine alkaloids: synthesis of derivatives and their mode of actions; <u>Kazuo Nagasawa</u> (Univ. of Tokyo, Tokyo)
18:30-20:30		<b>Reception party (Ibaragi Kyoto Hotel)</b>

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<b>Time</b>		Title of lecture; <u>Lecturer</u> (Affiliation)
09:30-09:50	16.	Cell-matrices engineering for regenerative medicine of liver; <u>Toshihiro Akaike</u> (Tokyo Inst. of Technology, Yokohama)
09:50-10:10	17.	Metabolic pathway modeling of <i>Saccharomyces cerevisiae</i> based on genome information for industrial application; <u>Suteaki Shioya</u> (Osaka Univ., Suita)
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## PROGRAM

### POSTER PRESENTATION

Nov. 21

10:40-15:00

P1.	Response of <i>Saccharomyces cerevisiae</i> to osmotic stress Suteaki Shioya, Keisuke Nagahisa, Takashi Hirasawa and Hiroshi Shimizu (Dept. Biotechnol., Dept. Bioinformatics, Osaka Univ.)
P2.	Comparative study of regulation of glutamate production in <i>Corynebacterium glutamicum</i> and <i>Corynebacterium efficiens</i> Hiroshi Shimizu, Keisuke Nagahisa, Takashi Hirasawa, Toshiomi Yoshida and Suteaki Shioya (Dept. Bioinformatics, Dept. Biotechnol., Osaka Univ.)
P3.	Three dimensional culture of porcine articular chondrocytes Yuuki Fukui, Chikayoshi Matsuda, Sigeyuki Wakitani, Mutsumi Takagi and Toshiomi Yoshida (ICBiotech, Osaka Univ., Medical School, Shinshu Univ.)
P4.	In vitro proliferation of cord blood hematopoietic progenitor cells without cytokine addition by three-dimensional cocultivation with bone marrow stromal cells Mutsumi Takagi, Toru Okamoto, Toshiomi Yoshida, Toshihiro Soma, Hiroyasu Ogawa, Manabu Kawakami, Masaaki Mukubo and Fumiya Hirayama (ICBiotech, Dept. Molecular Medicine, Osaka Univ.; Osaka Minami National Hospital; Yodogawa Christian Hospital; Osaka Red Cross Blood Center)
P5.	Molecular farming for production of therapeutic protein in plants Wanida Saejung, Kazuhito Fujiyama, Yuichiro Watanabe, Nakado Junko and Tatsuji Seki (ICBiotech, Osaka Univ.)
P6.	Microflora change during composting of aquatic plants Takehisa Nishida, Tomoko Fujimura, Takeshi Omasa, Yoshio Katakura, Kenichi Suga and Suteaki Shioya (Dept. Biochem. Eng., Osaka Univ.)
P7.	On-line estimation and control of apparent extract concentration in a beer brewing process Michiko Kobayashi, Keisuke Nagahisa, Hiroshi Shimizu and Suteaki Shioya (Dept. Biotechnol., Dept. Bioinformatic Eng., Osaka Univ.)
P8.	Proteome analysis of human chromosomes Shouhei Kobayashi, Takefumi Sone, Takeshi Ishihara, Toshifumi Takao, Susumu Uchiyama and Kiichi Fukui (Dept. Biotechnol., Research Institute of Microbial Diseases, Institute for Protein Research, Osaka Univ.)
P9.	Separating operation in biodesulfurization process of diesel oil M. Konishi, M. Kishimoto, Y. Katakura and S. Shioya (Dept. Biotechnol., Osaka Univ.)
P10.	Two approaches to the symbiosis mechanism between legume and rhizobia Makoto Yoshikawa, Takaki Maekawa, Makoto Hayashi, Masayoshi Kawaguchi and Yoshikatsu Murooka (Dept. Biotechnol., Osaka Univ.)
P11.	Development of microbeads for the stable delivery of large DNA molecules Atsushi Mizukami, Eiji Nagamori, Yukiko Takakura, Takefumi Sone, Akio Kobayashi, Satoshi Harashima and Kiichi Fukui (Dept. Biotechnol., Osaka Univ.)
P12.	Acquisition of functional single strand DNA by SELEX screening Ei-ichiro Fukusaki and Akio Kobayashi (Dept. Biotechnol., Osaka Univ.)

P13.	The chemical structure analysis of the repeating units of polysaccharide produced by terrestrial cyanobacterium <i>Nostoc commune</i> Shin-ichiro Kajiyama, Dasman, Masahiro Yagi, Tatsuyuki Kurihara, Ei-ichiro Fukusaki and Akio Kobayashi (Dept. Biotechnol., Osaka Univ.)
P14.	Deregulation of <i>PHO</i> gene expression in the disruptants of inorganic phosphate transporters in <i>Saccharomyces cerevisiae</i> Choowong Auerukaree, Tomoyuki Homma, Yoshinobu Kaneko and Satoshi Harashima (Dept. Biotechnol., Osaka Univ., HFSP)
P15.	Genetic identification of fatty acid biosynthetic system in methylotrophic yeast Prasitchoke Phatthanon, Ryohei Yamaji, Kanchana Rueksomtawin, Takaki Maekawa, Yoshinobu Kaneko and Satoshi Harashima (Dept. Biotechnol., Osaka Univ.)
P16.	Isolation and preliminary analysis of a candidate mutant gene capable restoring normal growing phenotype to <i>Saccharomyces cerevisiae Dyvh1</i> strain Satya Nugroho, Naoko Sakumoto and Satoshi Harashima (Dept. Biotechnol., Osaka Univ.)
P17.	In vitro expansion of progenitors in three-dimensional culture of bone marrow cells Mutsumi Takagi, Takahide Sasaki, Yoshiaki Tomimori, Naoki Iemoto and Toshiomi Yoshida (ICBiotech, Osaka Univ.)
P18.	An ultrasensitive assay of biodegradable plastics degrading enzyme based on fluorescence polarization Chatree' chalem Chidirek (Dept. Biotechnol., Osaka Univ.)
P19.	Tissue engineering and biochemical engineering in KANSAI area Takeshi Omasa (Dept. Biotechnol., Osaka Univ.)
P20.	Construction and evaluation of the liver functional HepG2 cell line for hybrid bioartificial liver support system Takeshi Omasa, Kazumi Kim, Shin-ya Hiramatsu, Yoshio Katakura, Michimasa Kishimoto, Ken-ichi Suga and Shin Enosawa (Dept. Biotechnol., Osaka Univ.)
P21.	Effect of sugar composition of the medium on the heterogeneity of mouse IgG sugar chain Takeshi Omasa, Jyunya Tanaka, Yuka Kitamoto, Yoshio Katakura, Michimasa Kishimoto and Ken-ichi Suga (Dept. Biotechnol., Osaka Univ.)

### ***Introductory remarks by the organizing committee***

The AEARU Workshop of Molecular Biology is a successful series of workshop starting since 1996, when AEARU was founded, to provide a forum for scientists of the member universities of the AEARU to exchange the information about recent progress in Molecular Biology and Biotechnology presenting and discussing recent research results by participants. The 6th AEARU Workshop on Molecular Biology and Biotechnology was held in Osaka University on November 21 and 22, 2002, with participation of over 100 scientists including the active participants, the audiences of academic staff and students of Osaka University. The Workshop was composed with 3 sessions, medical-related research, molecular biology, and biotechnology to provide 22 lectures by the active participants from 11 universities of the AEARU member. Also a poster session was held to present many excellent papers up-to-the-minute researches by young scientists. Finally, an excursion was made for the oversea participants to enjoy Japanese culture in Kyoto. The 7th workshop will be held at Tsinghua University next year.