

## ● VENUE

Icho Kaikan ("Ginko" Hall)  
Suita Campus, OSAKA University  
Yamadagaoka 2-2,  
Suita, Osaka 565-0871, Japan



(See: <http://www.osaka-u.ac.jp/en/access/suita.html>)

## ● REGISTRATION

Register Now at the Following Site !!  
[https://asp.science-server.com/  
membranome/registration/form.php](https://asp.science-server.com/membranome/registration/form.php)

Registration Fees:  
5,000yen (Academic), 10,000yen (Industry),  
1,000 yen (Student)

## ● ORGANIZING COMMITTEE

Prof. Dr. R. Kuboi, [Chairperson](#), Director of SF Center, Osaka Univ., Chair of MSB Research Gr.  
Prof. Dr. T. Tsuchido, [Chairperson](#), Dept. of Life Sci. Biotech., Faculty of Chem. Mater. Bioeng., Kansai Univ. Chair of MSB Research Gr.  
Prof. Dr. H. Umakoshi, Grad. Sch. of Eng. Sci., Osaka Univ., [Leader of Membranomics Lab.](#)  
Prof. Dr. T. Shimanouchi, Grad. Sch. of Eng. Sci., Osaka Univ.  
  
Prof. Dr. K. Shiomori, Univ. Miyazaki  
Prof. Dr. M. Yoshimoto, Yamaguchi Univ.  
Prof. Dr. S. Morita, Wakayama Nat'l College  
Prof. Dr. J. Sakamoto, Kansai Univ.  
Prof. Dr. N. Yoshimoto, Yamaguchi Univ.  
Prof. Dr. K. Kato, Ehime Univ.  
Prof. Dr. L. Q. Tuan, Nong Lam Univ.  
Prof. Dr. H. Ishii, Tohoku Univ.  
Dr. H. T. Bui, Kansai Univ.  
Dr. K. X. Ngo, AIST  
Prof. Dr. H. T. Vu, Hanoi Edu. Univ.

[Younger Researcher Committee]  
Mr. K. Suga / K. Hayashi, Grad. Sch. of Eng. Sci., Osaka Univ.

## ● FINANCIAL SUPPORT

Sigma MDRL ("Membranomics" Laboratory)  
MEXT/JSPS (Grant in Aid)

## ● SCIENTIFIC SUPPORT

Research Gr. on [Membrane Stress Biotechnology](#)  
Research Gr. on [Engineering Science of Liposome](#)  
GCOE (Bio-Environmental Chemistry)

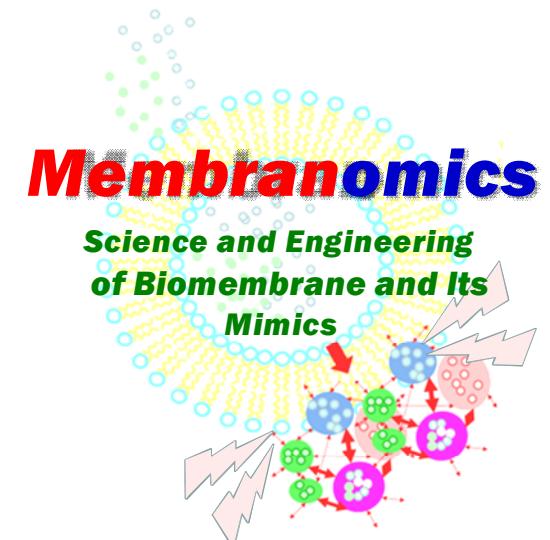
**CONTACT INFORMATION**

Conference Secretariat (Ms. Keiko Fukumoto)  
Tel & Fax: +81-(0)6-6850-6286  
E-mail: [msb@cheng.es.osaka-u.ac.jp](mailto:msb@cheng.es.osaka-u.ac.jp)

---

**RESEARCH GROUP ON**  
**MEMBRANE STRESS BIOTECHNOLOGY**  
**SIGMA MDRL "MEMBRANOMICS"**  
<http://www.membranome.jp>

The 8<sup>th</sup> International Symposium on  
Membrane Stress Biotechnology



**Icho Kaikan, Suita  
Osaka University**

**2010.9.22-23**

Co-Organized by

Research Group of ["Membrane Stress Biotechnology"](#)  
(Chairs: R. Kuboi and T. Tsuchido)

Sigma Multi-Disciplinary Research Lab.  
["Membranomics"](#)  
(Leader: H. Umakoshi)

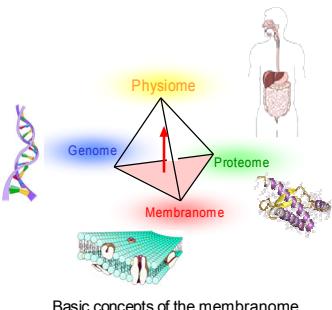


**$\Sigma$ MRL**



## ● SCOPE OF THE MEETING

The **biomembrane** is one of the important molecular assemblies that contribute in an essential way to the functioning of organelles and of biological cells at large. A systematic study of the "membranome" - in



Basic concepts of the membranome

addition to the **genome** and **proteome** - is expected to be achieved in the 21st century with considerable potential for biomedicine, bioengineering and biomaterials development. Intensifying studies on the various aspects of biomembranes with the help of biomembrane mimics hopefully leads (a) to a better understanding of the mechanism responsible for biomembrane-related diseases and (b) to applications in the field of biomimetic materials and bioprocesses.

The planned seminar is aimed at strengthening and intensifying collaborations between Japanese and Swiss Scientists in the field of certain basic and applied aspects of biomembrane mimics and to hopefully create new collaborations within this research field. The aim of the seminar is to exchange research results and ideas concerning the newly developed "membranome" concepts, to systematize the knowledge on the "membranome" and to appeal its significance.

"**Membranome**" is a term used for a newly proposed research field, where a variety of potentials of biomembranes and the strategy for possible applications of biomembranes are investigated and systematically classified. (i) **Scientific aspect:** Elucidation of a "complex biological phenomena" by linking it with different view points on the genome and the proteome. (ii) **Engineering aspect:** The most efficient strategy in biological systems shall be utilized for the design and development of biomaterials and bioprocesses, a re-search area called "**Membrane Stress Biotechnology**".

## ● PROGRAM

### September 22nd (Wed)

13:00 Opening Remarks

#### Membrane Stress Responsive Dynamics / X-ome

- |       |                                                                                                                    |                                 |
|-------|--------------------------------------------------------------------------------------------------------------------|---------------------------------|
| 13:10 | Chitosanase Displayed on Liposome Can Increase Its Activity and Stability                                          | K.X. Ngo<br>(AIST)              |
| 13:30 | Amyloid Fibril Formation on Biomembrane ~ Membranomics Research~                                                   | T. Shimanouchi<br>(Osaka Univ.) |
| 13:50 | Photoresponsive Vesicles Containing Malachite Green Derivative                                                     | R. Uda<br>(Nara Nat'l College)  |
| 14:10 | Physicochemical and Electro-chemical Biosensor Based on Detection of Interaction between Liposome and Biomolecules | M. Noda<br>(Kyoto Inst. Tech.)  |
| 14:30 | Creation of Research Network by "Membraneship"                                                                     | R. Kuboi<br>(Osaka Univ.)       |

#### Membrane Process Chemistry

- |       |                                                                                                               |                                   |
|-------|---------------------------------------------------------------------------------------------------------------|-----------------------------------|
| 15:00 | Lipid Vesicles Formed from Emulsions: Preparations and Potential Applications                                 | S. Ichikawa<br>(Univ. Tsukuba)    |
| 15:20 | Preparation and Physicochemical Properties of Mg-Chlorophyll a-Incorporated Phospholipid Bilayer Membranes    | M. Yoshimoto<br>(Yamaguchi Univ.) |
| 15:40 | New Development of DDS Cancer Therapy Using Span80 Vesicle with Superior Membrane Characteristics             | K. Kato<br>(Ehime Univ.)          |
| 16:10 | A Facile Synthesis of Hollow Si Particles in Aqueous Media by Using Negatively Charged Liposomes as Templates | H. Ishii<br>(Tohoku Univ.)        |
| 16:30 | Bi-functionally Enzymatic Membrane under Toxic Stress Condition                                               | L.Q. Tuan<br>(Nong Lam Univ.)     |
| 16:50 | Development of Dendritic Nanocatalysts for Selective Organic Synthesis                                        | T. Mizugaki<br>(Osaka Univ.)      |
| 17:10 | LIPOzyme: Exciting Unit of Membrane Process Chemistry                                                         | H. Umakoshi<br>(Osaka Univ.)      |
| 18:20 | Dinner at Umenohana (Invited Lecture only)                                                                    |                                   |

### September 23rd (Thu)

#### X-ome and Membranome

- |      |                                                                                                                       |                            |
|------|-----------------------------------------------------------------------------------------------------------------------|----------------------------|
| 9:00 | Folding and Amyloid Fibril Formation of Protein                                                                       | Y. Goto<br>(Osaka Univ.)   |
| 9:30 | Identification of Amyloidogenic $\alpha$ -Synuclein Oligomers Attributable to the Pathogenesis of Parkinson's Disease | D.P. Hong<br>(Texas Univ.) |

10:00 The Regulation of Catecholamine Derivative-Induced Disaggregation of Amyloid Fibrils on Liposome Membranes H.T. Vu  
(Hanoi Nat' Univ.)

10:20 New Designed Apoptosis-Inducing Peptide by SPOT Synthesized Peptide Array Screening H. Honda  
(Nagoya Univ.)

10:50 RNA-Protein Self-Replication System in Lipid Vesicle T. Yomo  
(Osaka Univ.)

#### Membrane Stress Response Dynamics

- |       |                                                                                                         |                                    |
|-------|---------------------------------------------------------------------------------------------------------|------------------------------------|
| 11:30 | Significance of Membrane Stress for Cell Survival and Death in Control of Harmful Microorganisms        | T. Tsuchido<br>(Kansai Univ.)      |
| 12:00 | Lunch / Poster session                                                                                  |                                    |
| 14:00 | Biological Functions of Cyclic Phosphatidic Acid (cPA) and Its Practical use as Medicines and Cosmetics | K. Murofushi<br>(Ochanomizu Univ.) |
| 14:30 | Novel Membrane-Associated Proteins of <i>Escherichia coli</i> Responsive to Oxidative Stress            | Y. Ojima<br>(Osaka Univ)           |

#### Supra Vesicular Chemistry

- |       |                                                                     |                                      |
|-------|---------------------------------------------------------------------|--------------------------------------|
| 14:50 | <i>In vivo</i> Administration of SPAN80 Vesicles in Disease Models  | T. Miyazaki<br>(Ehime Univ.)         |
| 15:20 | Human Cells Stressed by Materials: Measurements and Interpretations | J. Miyake<br>(Osaka Univ.)           |
| 15:50 | Composite Membranes of Polymeric and Fluid Lipid Bilayers           | K. Morigaki<br>(Kobe Univ.)          |
| 16:10 | Bilayer Lipid Membrane Microchip for Membrane Protein Analysis      | H. Osaki<br>(Kanagawa Sci.Tec.Acad.) |

#### Membrane Process Chemistry

- |       |                                                                     |                                 |
|-------|---------------------------------------------------------------------|---------------------------------|
| 16:30 | Preparation of Polymer-Enzyme Conjugates for Biosensor Applications | P. Walde<br>(ETH-Zurich)        |
| 17:00 | Development of Functional Microcapsules Inspired by Bio-system      | K. Akamatsu<br>(Kogakuin Univ.) |
| 17:20 | Cutting Edge of Membrane Center in Kobe University                  | H. Matsuyama<br>(Kobe Univ.,)   |
| 17:50 | Introduction of Membranomics Lab                                    | H. Umakoshi<br>(Osaka Univ.)    |
| 18:00 | Closing Remarks                                                     |                                 |
| 18:10 | Banquet (at Icho Kaikan)                                            |                                 |