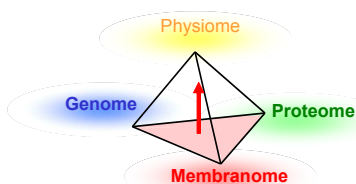


Membranomics

Basic and Applied Aspects of Biological Membrane



Date : 2008.9.1 (Mon) - 3 (Wed)
Place : International hall, Osaka Univ.(Toyonaka Campus)
<http://www.cheng.es.osaka-u.ac.jp/kuboilabo/MSB/>

September 1st (Mon)

9:00 Opening Remarks
~ Membranomics and Membrane Stress Biotechnology ~

R. Kuboi/P.Walde
(Osaka Univ./ETH-Zurich)

X-ome and Membranome

(Chairperson T.Tsuchido)

9:20 Direct observation of the surface-dependent formation of amyloid supramolecular assemblies

Y.Goto
(Osaka Univ. Inst. Protein Res.)

10:00 Tat conjugation of adenovirus vector broadens tropism and enhances transduction efficiency

Y.Yoshioka / S.Nakagawa
(Osaka Univ. Grad. Sch. Pharm.)

10:40 Break

11:00 Controlling biochemical reactions in native and artificial vesicles

(Chairperson R.Kuboi)

C.Danelon
(EPFL)

Membrane Stress Responsive Dynamics

11:40 Membrane stress biotechnology for the development of microorganism control in environments

T.Tsuchido / J.Sakamoto
(Kansai Univ. Fac. Chem. Mat. Bioeng.)

12:20 Lunch

(Chairperson: E.Reimhult /S.Ichikawa)

13:20 Membrane-related response of neural cells

K.Murofushi
(Ochanomizu Univ.)

14:00 Imaging lipids and lipid domains

T.Kobayashi
(RIKEN Discovery Research Institute)

14:40 Development and analysis of novel lectin-containing non-ionic vesicles composed of Span 80: Targeting of colon cancer cells and antitumor activity in vivo

K.Kato
(Ehime Univ. Grad. Sch. Sci. Eng.)

15:20 Break

Supravesicular Systems

(Chairperson: P.Walde / Y.Goto)

15:40 Nucleotide-based amphiphilic block copolymers

C.Vebert
(Univ.Basel)

16:20 Integrated model biological membranes at the solid/liquid interface

K.Morigaki
(AIST)

16:50 Self-assembly of supported biomembrane mimics for biosensing

E.Reimhult
(ETH-Zurich)

17:30 Analysis of amyloid fibrillization on liposome membrane using membrane chip system

T. Shimanouchi
(Osaka Univ. Grad. Sch. Eng. Sci.)

September 2nd (Tue)

Membrane Process Chemistry

(Chairperson: S.Matile / K.Kato)

9:00 LIPOzyme for biomembrane process chemistry

H.Umakoshi
(Osaka Univ. Grad.Sch.Eng.Sci.)

9:30 Membrane purification of giant vesicles prepared by lipid-coated ice droplet hydration method

S. Ichikawa
(Univ. Tsukuba Grad. Sch. Life Envir.Sci..)

10:00 Biomembrane microarrays by DNA-assisted sorting, spotting, and electronic control of vesicles and cells.

J.Vörös
(ETH-Zurich)

10:40 Break

11:00 Development of microcapsules having molecular recognition and pore open/close function

(Chairperson: H.Umakoshi)

S.Nakao
(Univ.Tokyo)

11:40 Photograph and Lunch

13:00 From anion- π slides to synthetic pore sensors

(Chairperson: J.Vörös / T.Kobayashi)

S.Matile
(Univ.Genava)

13:40 Encapsulation of formate dehydrogenase and cofactor in liposomes for stabilization of the enzyme

M.Yoshimoto
(Ymaguchi Univ.)

14:10 Lipid vesicles as mimics for studying peptide-biomembrane interactions

P.Walde
(ETH-Zurich)

14:50 Break

General Oral Presentation

(Chairperson: C.Vebert / K.Morigaki)

15:00 Effects of 10N-nonyl acridine orange in altering cardiolipin polymorphism: implications for Barth syndrome

H.Takahashi
(Gunma Univ.)

15:20 Vesicles as templates for enzyme-catalyzed polymerization reactions

Z.Guo
(ETH-Zurich)

15:40 Revisiting lipid asymmetry in red blood cells

M.Murate
(RIKEN Discovery Research Institute)

16:00 Preparation and characterization of antioxidative LIPOzyme

L.Q.Tuan
(Osaka Univ. Grad. Sch. Eng. Sci./Non Lam Univ.)

16:20 Break

Short Oral Presentation

(Chairperson: C.Danelon / T.Shimanouchi)

16:40 Light-induced destabilization of membrane and morphological change in liposome by Malachite Green

R.Uda
(Nara National College of Technology)

16:50 Oligovesicular Vesicles with Distinguished Inner Compartments

Y.Okumura
(Shinshu Univ.)

17:00 Synergistic influence of hydrophobicity of water pool

A.Uehara
(Nihon Univ.)

and interfacial fluidity on the *Candida rugosa* lipase reactivity in sugar ester W/O microemulsion

- 17:10 Evaluation of NBD-cholesterol transfer between liposomes ~Effect of species of phosphatidylcholine and oxidation of lipid on its transfer~ H.Ishii (Osaka Univ. Grad. Sch. Eng. Sci.)
- 17:20 Cationic liposome DOTAP can knock-out mRNA and silence its translation in *E.coli* cell free translation system B.T.Huong (Osaka Univ. Grad. Sch. Eng. Sci.)
- 17:30 Simple ligand/Mn-modified liposome can induce SOD and POD activities similar to those of synthetic ligand-metal complex K.Morimoto (Osaka Univ. Grad. Sch. Eng. Sci.)
- 17:40 Detection of bio-thermochemical reaction by microbolometer immobilized minute liposome M.Noda (Kyoto Institute of Technology)
- 18:00 General Survey on Membranomics P.Walde (ETH-Zurich)
- 19:00 Banquet (at Senri Hankyu Hotel, Room of Jurin)

September 3rd (Wed)

Membrane Process Chemistry

(Chairperson: M.Yoshimoto)

- 9:00 Oxidized LDL adsorption characteristics of newly developed polymer membrane H.Sugaya (TORAY Research Center)

Poster Digest

(Chairperson: H.Ishii / L.Q.Tuan / Z.Guo)

- 9:20 Poster presenter (each 3 min)
- 10:00 Poster Presentation
- 11:30 Closing Remarks P.Walde (ETH-Zurich)
- 12:00 Lunch
Business Meeting of Editorial Committee on Membranomics
- 14:00 Osaka University Campus Tour

Accommodation

Senri-Hankyu Hotel
2-1 D-1 SHINSENRI HIGASHIMACHI,
TOYONAKA CITY, OSAKA 560-0082, JAPAN
TEL.06(6872)2211 FAX.06(6832)2161
http://www.senri-htl.co.jp/2003_e/index.html (English)
<http://www.hankyu-hotel.com/hotels/23senrihh/index2.html> (Japanese)

Poster Presentation

Membranomics

- P01** Detection of bio-thermochemical reaction by microbolometer immobilized minute liposome
T. Asai, K. Yamashita, T. Shimanouchi, M. Okuyama, R. Kuboi, and M. Noda (Kyoto Institute of Technology)
- P02** Biosensing of interaction between liposome and protein evaluated with microwave dielectric dispersion analysis
Y. Masuda, K. Morii, T. Shimanouchi, K. Yamashita, M. Okuyama, R. Kuboi, and M. Noda (Kyoto Institute of Technology)
- P03** Light-induced destabilization of membrane and morphological change in liposome by Malachite Green derivative
R. Uda (Nara Nat'l Coll. Tech.)
- P04** Effect of fatty acids on interaction between liposome and amyloid β -peptide
S. Morita, Y. Hamano, S. Yamashita, Ryoichi Kuboi (Wakayama Nat'l Coll. Tech.)
- P05** Membrane stress biotechnology for the development of microorganism control in environments
T. Tsuchido/Jin Sakamoto (Kansai Univ. Fac. Chem. Mat. Bioeng.)
- P06** Induction of autolysis of *Geobacillus stearothermophilus* cells with cold shock treatment possibly through the membrane stress
K. Tanaka, J.J. Sakamoto, T. Tsuchido (Kansai Univ. Fac. Chem. Mat. Bioeng.)
- P07** Analysis of behaviors of *Bacillus subtilis* spores during heat stress by using a green fluorescent protein variant, YFP3.2 : Possible damages to the spore membrane and protein denaturation
N. Kitamura, J.J. Sakamoto, T. Tsuchido (Kansai Univ. Fac. Chem. Mat. Bioeng.)
- P08** Cationic liposome DOTAP can Knock-out mRNA and silence its translation in *E. coli* cell free translation system
B. T. Huong, H. Umakoshi, T. Shimanouchi, R. Kuboi (Osaka Univ., Grad. Sch. Eng. Sci.)
- P09** Evaluation of NBD-cholesterol transfer between liposomes ~Effect of species of phosphatidylcholine and oxidation of lipid on its transfer~
H. Ishi, T. Shimanouchi, R. Kuboi (Osaka Univ., Grad. Sch. Eng. Sci.)
- P10** Liposome recognizes intermediate state of GFP during its refolding -Role of lipid membrane on folding in gene expression
H. Umakoshi, M. Nishida, T. Shimanouchi, R. Kuboi (Osaka Univ., Grad. Sch. Eng. Sci.)
- P11** Model study on influence of dialyzer against the oxidized liposome using membrane chip analytical system
E. Ohyama, H. Ishii, T. Shimanouchi, H. Umakoshi, R. Kuboi (Osaka Univ., Grad. Sch. Eng. Sci.)
- P12** Charged liposome controls elementary process of GFP expression
K. Suga, B. T. Huong, H. Umakoshi, T. Shimanouchi, R. Kuboi (Osaka Univ., Grad. Sch. Eng. Sci.)

Supravesicular Systems

- P13** Oxidized LDL adsorption characteristics of newly developed polymer membrane
H. Sugaya (TORAY Research Center)
- P14** Oligovesicular Vesicles with Distinguished Inner Compartments
Y. Okumura, H. Namai, K. Urita (Shinshu Univ.)
- P15** Preliminary study on immobilization of intact liposome on solid surface
M. Noda, T. Shimanouchi, M. Okuyama, R. Kuboi (Kyoto Institute of Technology)
- P16** Immobilization of intact liposome on solid surface: a quartz crystal microbalance study
V. T. Huong, T. Shimanouchi, H. Umakoshi, R. Kuboi (Osaka Univ., Grad. Sch. Eng. Sci.)

- P17** Liposome membrane controlled growth of amyloid β fibril and its structure
N.Shimauchi, K.Nishiyama, T.Shimanouchi, H.Umakoshi, R.Kuboi
(Osaka Univ., Grad. Sch. Eng. Sci.)
- P18** Fibrillization of amyloid β protein on oxidized liposome membrane
K.Nishiyama, A.Hiroiwa, T.Shimanouchi, H.Umakoshi, R.Kuboi
(Osaka Univ., Grad. Sch. Eng. Sci.)

Membrane Process Chemistry

- P19** Synergistic influence of hydrophobicity of water pool and interfacial fluidity on the *Candida rugosa* lipase reactivity in sugar ester W/O microemulsion
A. Uehara, M. Imai, I. Suzuki
(Nihon Univ.)
- P20** Separation behavior of PEGylated lysozyme in membrane type monolithic chromatography
N.Yoshimoto, P. Akbarzaderaleh, M. Abe, S. Yamamoto
(Yamaguchi Univ.)
- P21** Protein transport through a liquid membrane using pH responsive reverse micelles consisted of AOT and long chain alkyl amines
K.Shiomori
(Univ. Miyazaki)
- P22** Membrane purification of giant vesicles prepared by lipid-coated ice droplet hydration method
T. Omori, H. Kobayashi, S. Nakano, T. Kuroiwa, S. Sato, S. Ichikawa
(Univ. Tsukuba)
- P23** The effect of stress condition against the biosorption of heavy metal by using *Phanerochaete chrysosporium*
H.Nakamura
(Osaka Pref.Univ.)
- P24** Hydrated water enhances dopamine oxidation by A β /Cu complex on liposome membrane
T.Matsumoto, T.Shimanouchi, N.Yoshimoto, H.Umakoshi, R. Kuboi
(Osaka Univ., Grad. Sch. Eng. Sci.)
- P25** Simple ligand/Mn-modified liposome can induce SOD and POD activities similar to those of synthetic
K.Morimoto, H.Umakoshi, T.Shimanouchi, R.Kuboi
(Osaka Univ., Grad. Sch. Eng. Sci.)
- P26** Preparation and characterization of antioxidative LIPOzyme
L.Q.Tuan, H.umakoshi, T.Shimanouchi, R.Kuboi
(Osaka Univ., Grad. Sch. Eng. Sci. /Non Lam Univ.)
- P27** Preparation of chitosanase-LIPOzyme based on heat-controlled interaction of liposome with cell membrane
K.X.Ngo, H.Umakoshi, T.Shimanouchi, R.Kuboi
(Osaka Univ., Grad. Sch. Eng. Sci.)