

# Session Program for Advanced Biological Materials

Date: March 18<sup>th</sup>, 2014

Location: Room 405, Ryoshinkan, Imadegawa Campus, Doshisha University

## - Schedule -

08:50 Welcome Remarks: Prof. Kazunari Akiyoshi and Prof. Bjørn Torger Stokke

### Session 1 Chair: Prof. Kazunari Akiyoshi

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09:00-09:25

[O1] Formation of Protein Amyloid Aggregates and their Toxicity

Tamotsu Zako, *Riken, Japan*

09:25-09:50

[O2] Inhomogeneity of Amyloid Beta Plaques in Alzheimer Mouse Models

Pål Ellingsen, Sofie Nyström, Per Hammarström, K. Peter R. Nilsson, Mikael Lindgren, *NTNU, Norway*

### Session 2 Chair: Prof. Bjørn Torger Stokke

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09:50-10:15

[O3] Crystal Structures of Family GH19 Chitinases Complexed with Chitooligomer Reveal the Difference in the Substrate Binding Mode between “Loopful” and “Loopless” Enzymes

Takayuki Ohnuma, Naoyuki Umemoto, Takuya Nagata, Shoko Shinya, Toki Taira, Tomoyuki Numata, Tamo Fukamizo, *Kinki Univ., Japan*

10:15-10:40

[O4] Processive Degradation of Chitosans with Varying Degrees of Acetylation by Chitinase A and B from *Serratia Marcescens*

Anette I. Dybvik, Anne L. Norberg, Morten Sørli, Vincent G. H. Eijsink, Øyvind Bakke, Kjell M. Vårum, *NTNU, Norway*

10:40-10:55 *Break*

**Session 3** Chair: Prof. Bjørn E. Christensen

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10:55-11:20

[O5] Single Molecular Analysis of Polysaccharides using a Nanopore

Makoto Takemasa, Masahiro Fujita, Mizuo Maeda, *Waseda Univ., Riken, Japan*

11:20-11:45

[O6] Stimuli-responsive Drug Delivery System: Photoresponsive Gene Delivery System for Gene Therapy and Boron Delivery System for Neutron Capture Therapy

Takeshi Nagasaki, *Osaka City Univ., Japan*

11:45-12:10

[O7] Swelling Changes and Dynamics of Soft Biomaterials Remodeling

Inthu Ratnavel, Ming Gao, Sayaka Toita, Shinichi Sawada, Kazunari Akiyoshi, Victorien Prot, Kamila Gawel, Astrid Bjørkøy, Bjørn Skallerud, Bjørn Torger Stokke, *NTNU, Norway*

12:10-13:30 *Lunch*

**Session 4** Chair: Prof. Shinichi Kitamura

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13:30-13:55

[O8] Structure of Ionic Polysaccharides Extracted from Seaweeds

Yoshiaki Yuguchi, Thanh Thi Thu Thuy, Tran Thi Thanh Van, Bui Minh Ly, *Osaka Electro-Communication Univ., Japan*

13:55-14:20

[O9] Polysaccharides in Food Preservation: Antibacterial Properties

Kåre A. Kristiansen, Simon Ballance, Sabina P. Strand, Per E. Granum, Hilde Mellegård, Coraline Basset, Hatsuho Takemitsu, Shinichi Kitamura, Bjørn E. Christensen, *NTNU, Norway*

14:20-14:45

[O10] White Nanobiotechnology for Prospecting Unidentified Bioresource in the Deep-sea

Shigeru Deguchi, Mikiko Tsudome, Tohru Kobayashi, Kohsuke Uchimura, Takaaki Kubota, *JAMSTEC, Japan*

14:45-15:00 *Break*

15:00-16:10 Poster Short Presentations (3 min)

16:10-17:30 Poster Session

Place: Gallery, B1F Kambaikan, Muromachi Campus

[ABM-P1] Protein on Monodisperse Charged Nano Polymer Particle: Immobilization and Conformational Changes

Masahiro Yasuda, Takashi Nomura, Hiroyasu Ogino, Wilhelm R. Glomm, *OPU, Japan*

[ABM-P2] Binding Mode of Chitosan Oligosaccharides to Novel Chitosan-specific Carbohydrate-binding Modules (CBM32) of a Chitosanase from *Paenibacillus* Sp. IK-5

Shoko Shinya, Takayuki Ohnuma, Reina Yamashiro, Padmanabhan Anbazhagan, André H. Juffer, Hisashi Kimoto, Hideo Kusaoke, Tamo Fukamizo, *Kinki Univ., Japan*

[ABM-P3] Limited hydrolysis of Insoluble Cassava Starch Granules Results in Enhanced Gelling Properties

Takashi Ichihara, Junya Fukuda, Takeshi Takaha, Yoshiaki Yuguchi, Shinichi Kitamura, *OPU, Japan*

[ABM-P4] Structure of Fucoidan from Brown Seaweed *Turbinaria Ornata* as Studied by ESIMS and SAXS Techniques

Thanh Thi Thu Thuy, Tran Thi Thanh Van, Yoshiaki Yuguchi, Bui Minh Ly, Nguyen Tien Tai, *Vietnam Academy of Science and Technology, Vietnam*

[ABM-P5] Structural Characterization of Fucoidan from the Norwegian Brown Seaweed *Laminaria Hyperborean*

Georg Kopplin, Finn Lillelund Aachmann, Gudmund Skjåk-Bræk, Kjell Morten, *NTNU, Norway*

[ABM-P6] Novel Route for Peptide-substituted Polysaccharides

Marianne Ø. Dalheim, Kåre A. Kristiansen, Bjørn E. Christensen, *NTNU, Norway*

[ABM-P7] Chemo-enzymatic Synthesis of Amylose Based Glyco Star Polymers

Tomoki Nishimura, Sada-atsu Mukai, Shin-ichi Sawada, Kazunari Akiyoshi, *Kyoto Univ., Japan*

[ABM-P8] Purification of Porcine Hair Keratin Subunits and their Immobilization for Use as Cell Culture Substrates

Yuki Ozaki, Yusuke Takagi, Yusuke Saito, Hideki Mori, Masayuki Hara, *OPU, Japan*

[ABM-P9] Proliferation of Murine Neural Stem/Progenitor Cells on Polyvinyl Alcohol Hydrogels Prepared by  $\gamma$ -irradiation Cross-linking

Hideki Mori, Airi Ota, Ayane Kawase, Masayuki Hara, *OPU, Japan*

[ABM-P10] Nanofabrication Approaches Towards Isolation of Extracellular Vesicles

Jonas M. Ribe, Bjørn T. Stokke *NTNU, Norway*

[ABM-P11] Nanogel-crosslinked Microsphere for Protein DDS

Yoshiro Tahara, Sada-atsu Mukai, Shin-ichi Sawada, Kazunari Akiyoshi, *Kyoto Univ., Japan*

[ABM-P12] Nanogel-crosslinked Porous Gels for Tissue Engineering

Yoshihide Hashimoto, Sada-atsu Mukai, Shin-ichi Sawada, Kazunari Akiyoshi, *Kyoto Univ., Japan*

[ABM-P13] Investigation of the Traditional Japanese Food “Tororo-kombu”: The Nutrient Component Elution and Anti-obesity Effect

Yayoi Gotoh, Toshiaki Kamitani, Toshiya Toda, Mitsuyoshi Miyata, Kazunaga Yazawa, *Fujicco Co., Ltd., Japan*

[ABM-P14] A Superheated Steam Rice Cooking Machine: The Taste and Freshness of Cooked Rice with Lower Energy Consumption

Hatsuho Takemitsu, Yasuhiro Hayashi, Yoshihiro Sako, Hiroshi Yamaguchi, Hiroshi Inui, Shinichi Kitamura, *OPU, Japan*

[ABM-P15] Hypolipidemic Effects of Starch and  $\gamma$ -oryzanol from *wx/ae* Double-mutant rice in BALB/c.KOR-*ApoE<sup>shl</sup>* Mice

Makoto Nakaya, Aiko Shojo, Hiroaki Hirai, Kenji Matsumoto, Shinichi Kitamura, *OPU, Japan*

[ABM-P16] Adsorption and Hydrolysis of  $\alpha$ -amylase in *wx/ae* Double Mutant Rice Starch

Mei Inoue, Hiroki Takagi, Shinichi Kitamura, *OPU, Japan*