

Scientific Program

Tuesday, July 11, 2017

- 10:00-16:30 Registration (**in front of Pacific 1-4**)
Exhibition Open, Poster Set up and Coffee/Tea break
(**Caribbean and Andaman Rooms**)
- 17:00-17:45 Opening Ceremony: (**Pacific 1-4**)

Plenary: (Pacific 1-4)

17:45-18:30

Chair: M.R. Jisnuson Svasti

PL-1 The structure and function of the ribosome complexes with various protein factors and antibiotics

Thomas A. Steitz (Nobel Lecture)

Yale University, USA

- 18:30-19:00 Break for room preparation
- 19:00-21:00 Opening Reception

Scientific Program

Wednesday, July 12, 2017

07:30 – 8:30 Registration and Poster Set up (all posters)

Parallel Sessions:

Parallel Session 1: Bioinformatics, Computational and Systems Biology (Pacific 1-2)

Chairs: Ping-Chiang Lyu & Surapong Pinitglang

- 8:30-8:55 **S-1 Molecular dynamics simulations of molecular rotary motors**
Mitsunori Ikeguchi
Yokohama University, Japan
- 8:55-9:20 **S-2 Protein structure prediction/determination by global optimization**
Jooyoung Lee
Korea Institute of Advanced Study, Korea
- 9:20-9:45 **S-3 Physical biochemistry studies of amyloid**
Damien Hall
Australian National University, Osaka University, Australia/Japan
- 9:45-10:00 **O-1 Genome-wide characterization of HSF1 and H2A.Z interplay and its role in regulating temperature transcriptomes in Arabidopsis**
Varodom Charoensawan
Mahidol University, Thailand

Parallel Session 2: Proteomics & Omics (Pacific 3-4)

Chairs: Ching Ming (Maxey) Chung & Chantragan Srisomsap

- 8:30-8:55 **S-4 Proteogenomic profiling of secreted colon cancer extracellular vesicle subtypes: functional insights**
Richard J. Simpson
La Trobe University, Australia
- 8:55-9:20 **S-5 An integrated 'omics approach toward understanding the role of aberrant lipid metabolism in colon cancer**
Gavin Reid
University of Melbourne, Australia
- 9:20-9:45 **S-6 Plant proteomics and their potential approaches in various applications**
Polkit Sangvanich
Chulalongkorn University, Thailand
- 9:45-10:00 **O-2 Label-free phosphoproteomic analysis of isogenic cholangiocarcinoma exosomes reveals distinct phosphorylation pattern of exosomal proteins involved in cancer metastasis**
Churat Weeraphan
Prince of Songkla University, Songkla, Thailand

10:00-11:00 Odd Poster Presentations, Coffee/Tea Break and Exhibition
(Caribbean and Andaman Rooms)

Plenaries: (Pacific 1-4)

Chairs: Yongyuth Yuthavong & Palangpon Kongsaree

- 11:00-11.45 **PL-2 Protein science in Thailand; Past, Present and Future**
(Protein Society of Thailand Keynote Lecture)
M.R. Jisnuson Svasti
Chulabhorn Research Institute, Thailand
- 11:45-12:30 **PL-3 Unstructured proteins: cellular complexity and human diseases**
(EMBO Keynote Lecture)
M. Madan Babu
Cambridge University, UK
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Luncheon Lecture: (Pacific 1-4)

- 12:40:13:20 **L-1 Increasing throughput of a tandem mAb purification using
NGC™ chromatography**
Chelsea Pratt
Bio-Rad Laboratories
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13:20-13:45 Reformat room

Parallel Sessions:

Parallel Session 3: Proteins in Diseases, Folding & Dynamics (Pacific 1-2)

Chairs: Yuji Goto & Kurt Krause

- 13:45-14:10 **S-7 Clusterin: full-length protein and one of its chains show opposing
effects on cellular lipid accumulation**
Mohan Rao
Centre for Cellular & Molecular Biology, India
- 14:10-14:35 **S-8 Understanding TDP-43 oligomers and dipeptide repeats in
neurodegenerative diseases**
Yun-Ru (Ruby) Chen
Academia Sinica, Taiwan
- 14:35-15:00 **S-9 Structural & dynamic aspects of antibody recognition of
intrinsically disordered antigens**
Ray Norton
Monash University, Australia

Parallel Session 4: Protein Engineering & Application (Pacific 3-4)

Chairs: Mohd Shukuri Mohamad Ali & Wipa Suginta

- 13:45-14:10 **S-10** **Recent progress on the analytical solutions for bio-pharmaceutics**
Kouhei Tsumoto
University of Tokyo, Japan
- 14:10-14:35 **S-11** **A thermotolerant lipase with broad pH isolated from Antarctic *Pseudomonas* sp. AMS3**
Raja Noor Zaliha Raja Abd. Rahman
University Putra Malaysia, Malaysia
- 14:35-15:00 **S-12** **Production of rotavirus recombinant VP6 protein and its specific antibody for development of the lateral flow immunoassay test strip**
Truong Quoc Phong
Hanoi University of Science and Technology, Vietnam

Workshop Session: System Biology and Computational Biology Workshop (Caspian)

Finding New Frontiers in Biology using Systematic Approaches

(a meeting to commemorate M.R. Jisnuson Svasti's 70th birthday anniversary)

Chair: Varodom Charoensawan

- 13:20-13:40 **Introduction**
M.R. Jisnuson Svasti
Chulabhorn Research Institute, Thailand
- 13:40-14:20 **Topic: Future of Systems Biology and Computational Biology**
Akhilesh Pandey
Johns Hopkins University/Indian Institute of Bioinformatics
USA/India
- 14:20-15:00 M. Madan Babu
Cambridge University, UK

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- 15:00-16:00 Even Poster Presentations, Coffee/Tea Break and Exhibition
(Caribbean and Andaman Rooms)
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Parallel Sessions:

Parallel Session 5: Proteins in Diseases (Virus and Antibodies) (Pacific 1-2)

Chairs: Joan Steitz & Puey Ounjai

- 16:00-16:25 **S-13** **MERS and SARS coronavirus cell entry: from structure to neutralizing antibody**
Xinquan Wang
Tsinghua University, China
- 16:25-16:45 **O-3** **Specific interaction between human DDX6 RNA helicase and the dengue viral RNA genome**
Sarin Chimnaronk

- 16:45-17:05 **O-4** Mahidol University, Thailand
Comprehensive rearrangements of a domain order of small cancer therapeutic bispecific antibody to enhance the function
Ryutaro Asano
Tokyo University of Agriculture and Technology, Japan
- 17:05-17:20 **O-5** **Chemically induced dimerization of engineered TALE**
Rung-Yi Lai
University of Wisconsin-Madison, USA

Parallel Session 6: APPA Presidents' Forum (Pacific 3-4)

Chairs: Jisnuson Svasti & James Ketudat-Cairns

- 16:00-16:25 **S-14** **Supersaturation-limited phase transitions of denatured proteins producing amyloid fibrils**
Yuji Goto
Osaka University, Japan
- 16:25-16:50 **S-15** **The biogenesis and quality control of beta-barrel outer membrane proteins in Gram-negative bacteria**
Zengyi Chang
Peking University, China
- 16:50-17:20 **Society summaries from Carol Post & Asian protein science societies**

Workshop Session: System Biology and Computational Biology Workshop (Caspian)

Chair: Varodom Charoensawan

- Topic: Computational Biology and Systems Biology in Asia and Thailand**
- 16:00-16:40 Mitsunori Ikeguchi
Yokohama University, Japan
- 16:40-17:10 Natini Jinawath
Mahidol University, Thailand
- 17:10-18:00 **Panel discussion**
Moderators:
Varodom Charoensawan, Mahidol University, Thailand
Bhoom Suktitipat, Mahidol University, Thailand
Duanrudee Tanramluk, Mahidol University, Thailand
Kamolchanok Chewapreecha, King Mongkut's University of Technology Thonburi, Thailand

17:30-19:00 APPA Council Meeting (**Atlantic meeting room**)

19:00-21:00 Invited Lecturers, APPA Council, and Organizing Committee Dinner

Scientific Program

Thursday, July 13, 2017

08.00 – 8.30 Registration

Parallel Sessions:

Parallel Session 7: Protein Drug Targets (Pacific 1-2)

Chairs: Mohan Rao & Rudee Surarit

- 8:30-8:55 **S-16** **Structural insights into the catalytic mechanism of dopamine N-acetyltransferase**
Ping-Chiang Lyu
National Tsing-Hua University, Taiwan
- 8:55-9:20 **S-17** **Serine hydroxymethyltransferase for antimalarial drug**
Ubolsree Leartsakulpanich
National Center for Genetic Engineering and Biotechnology, Thailand
- 9:20-9:45 **S-18** **Disarming the critical drivers of cancer**
Erinna Lee
La Trobe University, Australia
- 9:45-10:00 **O-6** **Cell-penetrable nanobodies specific to tyrosine kinase domain of epidermal growth factor (EGFR) able to modulate cell viability of human lung adenocarcinoma A549 cells**
Lueach Tabtimai
Kasetsart University, Thailand

Parallel Session 8: Proteins in Microorganisms (Pacific 3-4)

Chairs: Panadda Boonserm & Han Choe

- 8:30-8:55 **S-19** **Structures and dynamics of acyl carrier proteins from multi-drug resistant bacteria**
Yangmee Kim
Konkuk University, Korea
- 8:55-9:20 **S-20** **Glutamate racemase from *Mycobacterium tuberculosis* is a new target for antituberculosis drug design**
Kurt Krause
University of Otago, New Zealand
- 9:20-9:45 **S-21** **Structural and biophysical insights into chitin acquisition by marine *Vibrios***
Wipa Suginta
Suranaree University of Technology, Thailand
- 9:45-10:00 **O-7** ***Yersinia* effector YopO targets actin dynamics to evade phagocytosis**

Robert Robinson
Institute of Molecular and Cell Biology, A*STAR, Singapore

10:00-11:00 Odd Poster Presentations, Coffee/Tea Break and Exhibition
(Caribbean and Andaman Rooms)

Plenaries: (Pacific 1-4)

Chairs: Haruki Nakamura & Worachart Sirawaraporn

11:00-11:45 **PL-4 Membrane protein structures and free electron laser**
So Iwata
Kyoto University/RIKEN, Japan

11:45-12:30 **PL-5 Structural basis for regulation of histone acetylation**
Rui-Ming Xu
Institute of Biophysics, Chinese Academy of Science (CAS), China

Luncheon Lecture: (Pacific 1-4)

12:40-13:20 **L-2 High content cellular imaging in biological discovery**
Jaron Liu
GE Healthcare Life Sciences

13:20-13:40 Reformat room

Parallel Sessions:

Parallel Session 9: Biomarkers and Drug Discovery (Pacific 1-2)

Chairs: Chantragan Srisomsap & Lemmuel Tayo

13:40-14:05 **S-22 Mining the cancer secretome as a source for biomarkers**
Maxey C.M. Chung
National University of Singapore, Singapore

14:05-14:30 **S-23 Understanding the molecular basis and complexity of
Schizophrenia through neuroproteomics and interactomics**
Nikhat Ahmed Siddiqui
Barrett Hodgson University, Pakistan

14:30-14:55 **S-24 Antibodies, synthetic peptides and related constructs for planetary
health under the precautionary regime of the contemporary
Anthropocene**
Salvador Eugenio Caoili
University of the Philippines, The Philippines

- 14:55-15:10 **O-8 Fipronil induces autophagy and endoplasmic reticulum stress in human neuronal cells**
N. Monique Paricharttanakul
Chulabhorn Research Institute, Thailand

Parallel Session 10: Proteins in Plants (Pacific 3-4)

Chairs: Kittisak Yokthongwattana & Bambang Sugiharto

- 13:40-14:05 **S-25 Supramolecular basis for the light-harvesting processes in plants**
Zhengfeng Liu
Institute of Biophysics, Chinese Academy of Sciences, China
- 14:05-14:30 **S-26 The function and regulation of sucrose-phosphate synthase from sugarcane**
Bambang Sugiharto
Jember University, Indonesia
- 14:30-14:55 **S-27 Therapeutic evaluation of plant lectins as promising anticancer agents**
Syed Rashel Kabir
University of Rajshahi, Bangladesh
- 14:55-15:10 **O-9 Cloning and production of polyclonal antibody against coat protein of sugarcane mosaic virus isolates from Indonesia**
Nurmalasari Darsono
Airlangga University, Indonesia

Workshop Session: SLRI Synchrotron Protein Science Workshop (Caspian)

Chair: Somchai Tancharakorn

- 13:30-13:50 **W-1 Synchrotron Infrared microspectroscopy beamline and its applications on biological and biomedical research**
Kanjana Thumanu
SLRI IR, Thailand
- 13:50-14:10 **W-2 Basic small angle X-ray scattering for biological macromolecules**
Nuntaporn Kamonsutthipajit
SLRI SAXS, Thailand
- 14:10-14:30 **W-3 Macromolecular crystallography beamline and protein structural studies in Thailand**
Chomphunuch Songsiriritthigul
SLRI macromolecular crystallography beamline, Thailand
- 14:30-14:50 **W-4 The establishment of training hub for protein crystallography @ SLRI**
Nuttawan Pramanpol
SLRI protein crystallization facility, Thailand
- 14:50-15:20 **SLRI Protein facility user meeting**

15:00-16:00 Even Poster Presentations, Coffee/Tea Break and Exhibition
(Caribbean and Andaman Rooms)

Parallel Sessions:

Parallel Session 11: New Techniques in proteomics & protein studies (Pacific 1-2)

Chairs: Sittiruk Roytrakul & Palangpon Kongsaree

- 16:00-16:25 **S-28 Application of proteomics approaches to discovery of biomarkers in cancer diagnosis – An impossible mission?**
Terence Poon
University of Macau, Macau, China
- 16:25-16:50 **S-29 A novel method for the preparation and stabilization of membrane proteins and its application for the biochemical analysis of GPCRs**
Yeon Gyu Yu
Kookmin University, Korea
- 16:50-17:05 **O-10 Nanometer resolution video imaging reveals structural dynamics of single amyloidogenic protein assemblies**
Takahiro Watanabe-Nakayama
Kanazawa University, Japan
- 17:05-17:20 **O-11 Chemokine oligomerization states regulate G-protein coupled receptor activation: CXCR3A activation through CXCL4 monomer**
Shih-Che Sue
Institute of Bioinformatics and Structural Biology/ National Tsing-Hua University, Taiwan

Parallel Session 12: Proteins in disease (cancer) (Pacific 3-4)

Chair: Erinna Lee & Weontae Lee

- 16:00-16:25 **S-30 Systems biology of cancer stem cells by integrated proteomics and glycomics**
Norie Araki
Kumamoto University, Japan
- 16:25-16:50 **S-31 Glycomic analysis reveals the significance of high mannose N-glycan in progression of cholangiocarcinoma**
Sopit Wongkham
Khon Kaen University, Thailand
- 16:50:17:05 **O-12 Altered glycosylation related to N-acetylglucosamine attachment in colorectal cancer**
Vorarat Champattanachai
Chulabhorn Research Institute, Thailand
- 17:05-17:20 **O-13 Classification of cholangiocarcinoma cell lines using phenotypic drug response and single-cell proteomic profiling**
Patipark Kueanjinda
Mahidol University, Thailand

Workshop Session: SLRI Synchrotron Protein Science Workshop (Caspian)

Chairs: Genji Kurisu & Somchai Tancharakorn

- 16:00-16:20 **W-5** **New opportunities of protein research at Taiwan Photon Source (TPS) of NSRRC**
Chun-Jung Chen
NSRRC, Taiwan
- 16:20-16:40 **W-6** **The roles of high-brilliance synchrotron radiation in macromolecular crystallography**
Masaki Yamamoto
RIKEN SPring-8, Japan
- 16:40-17:00 **W-7** **Present status of SPring-8 BL44XU, beamline designed for structure analysis of large biological macromolecular assemblies**
Atsushi Nakagawa
Osaka University, Japan
- 17:00-17:20 **W-8** **A partner of the wwPDB accepting structure deposition through OneDep**
Genji Kurisu
Osaka University & PDBJ, Japan

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- 17:30-18:30 Protein Society of Thailand Annual Meeting
(TBA)
- 19:00-21:00 Banquet (Tickets can be purchased on-site)
(Pacific 1-4)

Scientific Program

Friday, July 14, 2017

08.00 – 8.30 Registration

Parallel Sessions:

Parallel Session 13: Proteins and Nucleic Acids (Pacific 1-2)

Chairs: Worachart Sirawaraporn & Erinna Lee

- 8:30-8:55 **S-32 Nuclear noncoding RNAs: more surprises**
Joan A. Steitz
Yale University, USA
- 8:55-9:20 **S-33 Assembly of an activating transcription factor complex**
Jacqueline Matthews
University of Sydney, Australia
- 9:20-9:45 **S-34 Molecular mechanism of CRISPR and structure-based
development of genome editing tool towards medical application**
Osamu Nureki
University of Tokyo, Japan
- 9:45-10:00 **O-14 Movement of the β -hairpin in the third zinc-binding module of
UvrA is required for DNA damage recognition**
Danaya Pakotiprapha
Mahidol University, Thailand

Parallel Session 14: Molecular Enzymology (Pacific 3-4)

Chair: Pimchai Chaiyen & Ming Daw Tsai

- 8:30-8:55 **S-35 Structural mechanism for the fidelity modulation of DNA
polymerase Lambda**
Ming Daw Tsai
Institute of Biological Chemistry
Academia Sinica, Taiwan
- 8:55-9:20 **S-36 pH effect study for exploring enzyme mechanisms-case studies from
bacterial luciferase and succinic semialdehyde dehydrogenase**
Ruchanok Tinikul
Mahidol University, Thailand
- 9:20-9:45 **S-37 Chiral proofreading: mechanism and functional implications**
Rajan Sankaranarayanan
Centre for Cellular & Molecular Biology, India
- 9:45-10:00 **O-15 Mechanistic studies of flavin-dependent monooxygenase and
reductase for toxic aromatic compounds detoxification**
Panu Pimviriyakul
Mahidol University, Thailand

10:00-10:40 Break & Poster Presentations Coffee/Tea Break & Exhibition
And Awarded Posters
(Caribbean & Andaman Room)

Parallel Sessions:

Parallel Session 15: Protein Interactions, Dynamics & Signaling (Pacific 1-2)

Chairs: Ray Norton & Kiattawee Choowongkomon

- 10:40-11:05 **S-38** **Developments and applications of novel NMR methods to characterize functional dynamics of high molecular weight proteins**
Ichio Shimada
University of Tokyo, Japan
- 11:05-11:30 **S-39** **Oligomerization and adapter molecule interaction of proteoglycans reveals a unique molecular function related to cancer signaling**
Weontae Lee
Yonsei University, Korea
- 11:30-11:55 **S-40** **Structure and function of the polymyxin-resistance-associated response regulator PmrA**
Chwan-Deng (David) Hsiao
Academia Sinica, Taiwan

Parallel Session 16: Enzyme & Selected Orals: (Pacific 3-4)

Chairs: Dumrongkiat Arthan & Jittima Charoenpanich

- 10:40-10:55 **O-16** **Molecular mechanism of transglucosylation catalyzed by two α -glucosidase isozymes from *Aspergillus niger***
Atsuo Kimura
Hokkaido University, Japan
- 10:55-11:10 **O-17** **Pushing the limits of detection of weak binding using fragment based drug discovery: identification of new cyclophilin binders**
Charis Georgiou
The University of Edinburgh, UK
- 11:10-11:25 **O-18** **Structural, kinetic and thermodynamic insights into reaction intermediate analogues binding to a GH20 β -N-acetylglucosaminidase (GlcNAcase) from *Vibrio harveyi***
Piyanat Meekrathok
Suranaree University of Technology, Thailand
- 11:25-11:40 **O-19** **A shortened version of SecA (SecA^N) functions as the protein-conducting channel for nascent β -barrel outer membrane proteins**
Feng Jin
Peking University, China

- 11:40-11:55 **O-20** **Mechanisms of heparin-induced amyloid fibrillation of β_2 -microglobulin explained by conformational phase diagram**
Masatomo So
Osaka University, Japan

Parallel 17: Selected Orals: (Caspian)

Chairs: Nilubol Paricharttanakul & Voraratt Champattanachai

- 10:40-10:55 **O-21** **Discovery of a potential novel therapeutic target against metastatic thyroid cancer using proteomics**
Kittirat Saharat
Chulabhorn Graduate Institute, Thailand
- 10:55-11:10 **O-22** **Asymmetry in the function and dynamics of the cytosolic group II chaperonin CCT/TRiC**
Masafumi Yohda
Tokyo University of Agriculture and Technology, Japan
- 11:10-11:25 **O-23** **Alternate chirality of D-Cys to harness a specific geometry of a metal center in *de novo* designed protein**
Leela Ruckthong
King Mongkut's University of Technology Thonburi, Thailand
- 11:25-11:40 **O-24** **Molecular cloning, expression and *in silico* analysis of a cold-active organic solvent tolerant lipase from an Antarctic *Pseudomonas* sp**
Mohd Shukuri Mohamad Ali
Universiti Putra Malaysia, Malaysia
- 11:40-11:55 **O-25** **Chitoporin plays essential roles in chitooligosaccharide uptake and growth of pathogenic *Vibrio cholera***
Sasimali M. Soysa
Suranaree University of Technology, Thailand

11:55-12:20 Reformat room

Luncheon Lecture: (Pacific 1-4)

- 12:20-13:00 **L-3** **Amplified detection of proteins and their interactions using the Duolink® Proximity Ligation Assay (PLA) technology – Applications and Advancements**
Manpreet Mutneja
Merck KGaA
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M.R. Jisnuson Svasti 70 yr Symposium: (Pacific 1-4)

Chairs: Yongyuth Yuthavong & Rudee Surarit

- 13:00-13:25 **S-41 Glycosyltransferases for the synthesis of oligosaccharides and glycosides**
Piamsook Pongsawasdi
Chulalongkorn University, Thailand
- 13:25-13:50 **S-42 Flavin-dependent monooxygenases for sustainable technology**
Pimchai Chaiyen
Mahidol University, Thailand
- 13:50-14:15 **S-43 Cancer proteomics and marker discovery**
Chantragan Srisomsap
Chulabhorn Research Institute, Thailand
- 14:15-14:30 **M.R. Jisnuson Svasti Outstanding Protein Scientist of Thailand Award 2017**
- 14:30-15:00 Coffee/Tea Break

Plenaries: (Pacific 1-4)

Chairs: Yuji Goto & Zengyi Chang

- 15:00-15:45 **PL-6 Using isogenic systems to dissect interactomes and signaling pathways**
Akhilesh Pandey
Johns Hopkins University/Indian Institute of Bioinformatics, USA/India
- 15:45-16:30 **PL-7 Allosteric regulation of receptor interactions of Syk tyrosine kinase (Protein Society Keynote Lecture)**
Carol Beth Post
Purdue University, USA
- 16:30-17:00 **Closing ceremony, awards and raffles drawing**