15th International Conference on
“Na,K-ATPase and Related Transport ATPases”

Convention hall “Oumi” at Lake Biwa Otsu Prince Hotel,
4-7-7, Nionohama, Otsu City Siga, 520-8520 Japan

SUNDAY, September 24

13:00 - 17:00  Meeting registration
               *Hotel Check-in begins at 14:00

17:30 - 17:40  Greeting from organizers
               Hiroshi Suzuki, Haruo Ogawa, Chikashi Toyoshima

17:40 - 18:00  Opening remarks
               Giuseppe Inesi  California Pacific Medical Center
               #01

18:00 - 19:00  Special Lecture
               Toshio Ando  Kanazawa University
               Nano-visualization of protein molecules in action by high-speed AFM
               #02

19:00 - 21:30  Mixer

MONDAY, September 25

07:00 - 08:30  Breakfast

Oral session 1:  08:30 - 12:00
Na,K-ATPase and H,K-ATPase 1 (structure-function relationship)

Chair: Flemming Cornelius

08:30 - 08:40  Flemming Cornelius   Aarhus Univ.
               Introductory remarks

08:40 - 09:10  Bente Vilsen   Aarhus Univ.
               New aspects of sodium and potassium binding of Na,K-ATPase
               #05
<table>
<thead>
<tr>
<th>Time</th>
<th>Name</th>
<th>Institution</th>
<th>Title</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>09:10 - 09:40</td>
<td>Ronald Clarke</td>
<td>Univ. of Sydney</td>
<td>Role of electrostatic stabilisation in the mechanism and regulation of Na⁺,K⁺- and H⁺,K⁺-ATPases</td>
<td>#06</td>
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<tr>
<td>09:40 - 10:10</td>
<td>Haruo Ogawa</td>
<td>Univ. of Tokyo</td>
<td>X-ray crystallographic study of NA,K-ATPase in complex with cardiotonic steroids</td>
<td>#07</td>
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<td>10:10 - 10:30</td>
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<td><strong>Coffee break</strong></td>
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<td>10:30 - 11:00</td>
<td>Kazuhiro Abe</td>
<td>Nagoya Univ.</td>
<td>Structural and functional analysis of gastric H⁺,K⁺-ATPase</td>
<td>#08</td>
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<tr>
<td>11:00 - 11:20</td>
<td>Mads S. Toustrup-Jensen</td>
<td>Aarhus Univ.</td>
<td>Structural Elements Important for Oligomycin Inhibition of the Na⁺,K⁺-ATPase</td>
<td>Poster #101</td>
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<tr>
<td>11:20 - 11:40</td>
<td>Pablo Artigas</td>
<td>Texas Tech Univ</td>
<td>Effect of two asparagine-lysine substitutions found in the Na/K pump isoform unregulated in hyper salinity-adapted brine shrimp</td>
<td>Poster #102</td>
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<tr>
<td>11:40 - 12:00</td>
<td>Joshua R. Berlin</td>
<td>Rutgers Univ.</td>
<td>Free energy calculations suggest a mechanism for Na+/K+-ATPase ion selectivity</td>
<td>Poster #103</td>
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<td>12:30 - 17:50</td>
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<td><strong>Excursion / Poster session</strong></td>
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<td>18:15 - 18:45</td>
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<td><strong>Poster 1 min flash talk 1 (104-118)</strong></td>
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<td>18:45 - 20:00</td>
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<td><strong>Dinner</strong></td>
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<td>20:00 - 21:00</td>
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<td><strong>Keynote Lecture</strong></td>
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<td>Paul Nissen</td>
<td>Aarhus Univ.</td>
<td>Structure and mechanism of P-type ATPases</td>
<td>#03</td>
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<td>21:00 - 22:30</td>
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<td><strong>Poster session 1 (odd number)</strong></td>
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TUESDAY, September 26

07:00 - 08:30  Breakfast

Oral session 2:  08:30 - 10:30
Ca-ATPase and other P2-ATPases

Chair: Giuseppe Inesi

08:30 - 08:40  Giuseppe Inesi  California Pacific Medical Center
Introductory remarks

08:40 - 09:10  Hiroshi Suzuki  Asahikawa Medical Univ.
Structure/function of Ca-ATPase revealed by mutations, kinetics, and structural analyses of reaction intermediates  #09

09:10 - 09:40  Rajini Rao  Johns Hopkins Univ
Tumor Suppressor Role of SPCA2 in Breast Cancer  #10

09:40 - 10:10  David D. Thomas  Univ. of Minnesota
Therapeutic Discovery Based on SERCA Structural Dynamics  #11

10:10 - 10:30  Jilin Chen  KU Leuven
Regulation of the secretory pathway Ca^{2+} ATPase SPCA1a and SPCA2 by Ca^{2+} and Orai1  Poster #150

10:30 - 10:50  Coffee break

10:50 - 12:10  Poster 1 min flash talk 2 (121-149, 151-159, 166-171)

12:30 - 17:50  Excursion / Poster session

18:15 - 18:45  Poster 1 min flash talk 3 (174-187, 188-190, 191-192)

18:45 - 20:00  Dinner

20:00 - 21:00  Keynote Lecture
Chikashi Toyoshima  Univ. of Tokyo
#04

21:00 - 22:30  Poster session 2 (even number)
<table>
<thead>
<tr>
<th>Time</th>
<th>Session Description</th>
<th>Speaker</th>
<th>Affiliation</th>
<th>Title</th>
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<tr>
<td>07:00 - 08:30</td>
<td>Breakfast</td>
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<td>08:30 - 12:10</td>
<td>Oral session 3: <strong>P4-ATPase (Flippase) - structure, function, cell biology and disease</strong></td>
<td>Todd R. Graham</td>
<td>Vanderbilt Univ.</td>
<td>Introductory remarks</td>
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<td>08:30 - 08:40</td>
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<td>Todd R. Graham</td>
<td>Vanderbilt Univ.</td>
<td>Novel substrates and transport mechanisms for P4-ATPases #12</td>
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<td>08:40 - 09:10</td>
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<td>Todd R. Graham</td>
<td>Vanderbilt Univ.</td>
<td>Specific substrates for P4-ATPases and their regulation in mammalian cells #13</td>
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<td>09:10 - 09:40</td>
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<td>Hye-won Shin</td>
<td>Kyoto Univ</td>
<td>Regulation of a yeast P4-ATPase by its terminal extensions #14</td>
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<td>09:40 - 10:10</td>
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<td>Guillaume Lenoir</td>
<td>Inst. for Integrative Biology of the Cell</td>
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<td>10:10 - 10:30</td>
<td>Coffee break</td>
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<td>10:30 - 11:00</td>
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<td>Katsumori Segawa</td>
<td>Osaka Univ.</td>
<td>Function and regulation of plasma membrane phospholipid flippases #15</td>
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<td>11:00 - 11:30</td>
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<td>Jens Peter Andersen</td>
<td>Aarhus Univ.</td>
<td>Mutagenesis of ATP8A2: On the track of the lipid transport pathway #16</td>
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<td>11:30 - 12:10</td>
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<td>Yuji Hara</td>
<td>Kyoto Univ</td>
<td>The role of phospholipid flippase in myotube formation Poster #165</td>
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<td>12:30 - 17:30</td>
<td>Excursion / Poster session</td>
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<td>17:45 - 18:45</td>
<td>Poster session 3 (odd number)</td>
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<td>18:45 - 20:00</td>
<td>Dinner</td>
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Oral session 4: 20:00 - 21:40
Molecular simulations – towards quantitative understanding

Chair: Yuji Sugita

20:00 - 20:10 Yuji Sugita RIKEN
Introductory remarks

20:10 - 20:40 Yuji Sugita RIKEN
Molecular Dynamics Simulations of Conformational Changes in SR Ca-ATPase Novel substrates and transport mechanisms for P4-ATPases #17

20:40 - 21:10 Himanshu Khandelia Univ. of Southern Denmark
The elusive proton in ion pumps #18

21:10 - 21:40 Benoit Roux Univ. of Chicago
Molecular Dynamics Studies of P-type ATPase Ion Pumps #19

21:40 - 22:30 Poster session 4 (even number)

THURSDAY, September 28

07:00 - 08:30 Breakfast

Oral session 5: 08:30 - 12:00
Na,K-ATPase and H,K-ATPase 2 (physiology and diseases)

Chair: Kathleen Sweadner

08:30 - 08:40 Kathleen Sweadner Massachusetts General Hospital
Introductory remarks

08:40 - 09:10 Anita Aperia Karolinska Institute
Neuronal Na,K-ATPase in Health and Disease #20

09:10 - 09:40 Minako Hoshi Kyoto Univ
Na, K-ATPase α3 and Alzheimer's Disease #21

09:40 - 10:10 Kiyoshi Kawakami Jichi Medical Univ.
Atp1a2-deficient mice as a model of familial hemiplegic migraine #22
10:10 - 10:30  
**Coffee break**

10:30 - 11:00  
**Helge Rasmussen**  
Univ. of Sydney  
Na-K pump stimulation and FXYD3 suppression as treatment objectives in heart failure and cancer  
#23

11:00 - 11:30  
**Zijian Xie**  
Marshall Univ.  
Na/K-ATPase-mediated Signal Transduction in Animal Physiology and Disease Progression  
#24

11:30 - 12:00  
**Steve Karlish**  
Weizmann Institute  
Specific interactions of Na,K-ATPase with lipids – physiological rationale and role in diseases  
#25

12:30 - 17:30  
**Excursion / Poster session**

17:45 - 18:30  
**Poster session 5 (even number)**

18:30 - 19:45  
**Dinner**

Oral session 5:  
19:45 - 20:25  
**Na,K-ATPase and H,K-ATPase 2 (physiology and diseases)**  
Chair: Kathleen Sweadner

19:45 - 20:05  
**Gustavo Blanco**  
Univ. of Kansas  
Relative contribution of Na,K-ATPase α4 and Na,K-ATPase α1 isothermas to sperm motility  
*Poster #119*

20:05 - 20:25  
**Evgeny Akkuratov**  
Royal Institute of Technology  
Translational study on disease associated with mutation in ATP1A3 gene  
*Poster #120*

Oral session 6:  
20:30 - 22:00  
**Emerging technologies**  
Chair: Takayuki Nishizaka

20:30 - 20:40  
**Takayuki Nishizaka**  
Gakushuin Univ.  
Introductory remarks

20:40 - 21:10  
**Takayuki Nishizaka**  
Gakushuin Univ.  
Application of single-molecule techniques to supramolecular machinery in bacteria and archaea  
#26
21:10 - 21:40  **Rikiya Watanabe**  
Univ. of Tokyo  
Novel microsystems for highly sensitive analysis of transport proteins  
*Poster #27*

21:40 - 22:00  **Milena Laban**  
Aarhus Univ.  
Towards a structure of the yeast lipid flippase, Drs2p/Cdc50p, using cryo-electron microscopy  
*Poster #164*

22:00 - 22:30  **Poster session 6 (odd number)**

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**FRIDAY, September 29**

07:00 - 08:30  
*Breakfast*

08:30 - 12:10  
**Oral session 7:**  
*Other P-type ATPases including P1, P5-ATPases*

Chair: Jack Kaplan

08:30 - 08:40  **Jack Kaplan**  
Univ. of Illinois at Chicago  
Introductory remarks

08:40 - 09:10  **Svetlana Lutsenko**  
Johns Hopkins Univ.  
ATP7A and ATP7B have distinct function in the cellular copper homeostasis  
*#28*

09:10 - 09:40  **Jose M. Argüello**  
Worcester Polytechnic Institute  
Expanding the repertoire of P1B-ATPases: Mycobacteria Fe$^{2+}$-ATPases  
*#29*

09:40 - 10:10  **Michael Palmgren**  
Univ. of Copenhagen  
Evolution and role of zinc pumps in eukaryotes  
*#30*

10:10 - 10:30  
*Coffee break*

10:30 - 11:00  **David Stokes**  
New York Univ.  
Structure and Mechanism of the KdpFABC pump from E. coli  
*#31*

11:00 - 11:30  **Peter Vangheluwe**  
KU Leuven  
Novel P-type ATPases as gatekeepers of neuronal health  
*#32*
11:30 - 11:50 Christina Grønberg  
Univ. of Copenhagen  
Ion-binding to purified and functional human copper transporting P-type ATPase ATP7B  
*Poster #173*

11:50 - 12:10 J. Preben Morth  
Univ. of Oslo  
Functional characterization of the first primary active magnesium transporter  
*Poster #174*

12:10 - 13:00 Lunch

**Oral session 8: 13:00 - 15:10**  
**Pump regulators**

**Chair: Howard S. Young**

13:00 - 13:10 Howard S. Young  
Univ. of Alberta  
Introductory remarks

13:10 - 13:40 Howard S. Young  
Univ. of Alberta  
Conformational memory in phospholamban regulation of the sarcoplasmic reticulum calcium pump SERCA  
*Poster #33*

13:40 - 14:10 Seth Robia  
Loyola Univ. Chicago  
Structure, Affinity, and Stoichiometry of Micropeptide Regulatory Complexes  
*Poster #34*

14:10 - 14:30 L. Michel Espinoza-Fonseca  
Univ. of Sydney  
Structural mechanism for SERCA uncoupling by sarcolipin through the lens of the computational microscope  
*Poster #160*

14:30 - 14:50 Alexander V. Chibalin  
Karolinska Institute  
The role of FXYD1 protein in energy metabolism  
*Poster #161*

14:10 - 15:10 Chia-chi Liu  
Univ. of Sydney  
Silencing FXYD3 Protein in Human Pancreatic Cancer Cells Enhances Cytotoxic Effect of Doxorubicin  
*Poster #162*

**Group photo:** 15:10 - 15:30

**Closing session:** 15:30 - 16:20

15:30 - 15:50 Summary & perspective lecture

15:50 - 16:10 Award presentation ceremony
16:10 - 16:20  Closing remarks

18:00 - 21:00  Biwa lake banquet

SATURDAY, September 30

07:00 - 08:30  Breakfast

- 11:00  Departure

*Rooms must be empty by 11:00