Pharmaceutical Science Symposium 2015 in Sendai

Collaboration with
Soochow University
Zhejiang University
Gifu Pharmaceutical University

16th (Mon)-17th (Tue) November 2015

at Sakura Hall in Katahira Campus, Tohoku University
Pharmaceutical Science Symposium 2015 in Sendai

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16th (Mon)-17th (Tue) November 2015
at Sakura Hall in Katahira Campus, Tohoku University

Program, Biographies and Abstracts
Access

Location: Katahira Campus
Address: 2-1-1 Katahira, Aoba-ku, Sendai, Miyagi 980-8577 Japan
Directions:

By taxi -  5 minutes from Sendai station, 40 minutes from Sendai Airport

By bus - Catch a bus from platform 9 at the west entrance in front of Sendai station bound for the "Miyagi University of Education / Aobadai" or "Dobutsukoen Circle via Aoba-dori". Get off at "Aoba dori ichibancho 1-A". Approx. a 5 min ride, 10 min walk from the bus stop

Catch a bus from platform 11 at the west entrance in front of Sendai station bound for the "Otamaya hashi / Dobutsukoen" or "Otamaya hashi / Dobutsukoen / Nissokkai / Nagamachi". Get off at the Tohoku university main gate "Tohoku dai seimon 1-B". Approx. a 10 min ride

Catch a bus from platform 12 at the west entrance in front of Sendai station bound for the "Otamaya hashi / Dobutsukoen / Nishinokai / Nagamachi". Get off at the Tohoku university main gate "Tohoku dai seimon 1-B". Approx. a 10 min ride

By foot - About 15 minutes from the Sendai station west exit
Information for Participants

Organized by Graduate School of Pharmaceutical Sciences, Tohoku University
Co-organized by Institute of Multidisciplinary Research for Advanced Materials, Tohoku University

- Registration Desks: 2F, Sakura Hall
- Registration Time: November 16 (Mon) 8:30-18:00
  November 17 (Tue) 8:30-12:00
- Registration Fee
  General 8,000 JPY
  Graduate students Free
- Exchange Meeting Fee (18:10-19:40 at 1F, Sakura Hall)
  General 2,000 JPY
  Graduate students 2,000 JPY
- Cloakroom: There is no Cloakroom in the Meeting.
- Presentation Instrument
  - Presentations are restricted to computer presentations using your own personal computer in the Meeting.
  - Please use a computer running Windows8, 7, Windows Vista, or Machintosh OS X or later, and fitted with an external monitor output terminal.
  - If you are using a Sony VAIO, Machintosh, or other type of computer with a special-format monitor output terminal, please bring a D-sub15 pin conversion adaptor with you.
  - Be sure to bring an AC adaptor to the presentation venue in case your computer's battery runs out.
  - Audio cannot be used during presentations.
- Information for poster Presenters
  (November 16, 13:30-14:30 at 1F, Sakura Hall)
  - Poster panel size; Height: 1820mm, Width: 1200mm
  - Please help by taking your own poster down.
  (Poster Removal time; November 16, 16:30)
Program

Monday, 16th November, 2015

9:15-9:30   Opening Remarks
Prof. Masahiko Yamaguchi (Dean, Tohoku University Graduate School Pharmaceutical Sciences)

9:30-11:00   Session 1 (S1-S4)
Chairman: Profs Jinghao Cui and Yoshiharu Iwabuchi
S1 9:30-9:50
Dr. Mieko Arisawa, Tohoku University (20min)
Rhodium-catalyzed Synthesis of Organosulfur Compounds Using Sulfur

S2 9:50-10:10
Dr. Naoki Kano, Tohoku University (20min)
Photo-Cross-Linked Small-Molecule Affinity Matrix as a Tool for Target Identification of Bioactive Small Molecules

S3 10:10-10:30
Dr. Haruhisa Kikuchi, Tohoku University (20min)
Development of Natural Product-like Library Derived from Diversity-Enhanced Extracts

S4 10:30-11:00
Dr. Jinghao Cui, Soochow University (30min)
Pulmonary Administration of A Novel siRNA-Loaded Epoxy Alkyl Amine Modified Lipoplex

11:00-11:20   Coffee Break
11:20-12:30  **Session 2 (S5-S6)**  
**Chairman: Profs Kohji Fukunaga and Xuechu Zhen**  
**S5** 11:20-12:00  
Dr. Xuechu Zhen, Soochow University (40min)  
Allosteric sigma-1 receptor modulator and its potential application  
**S6** 12:00-12:30  
Dr. Guanghui Wang, Soochow University (30min)  
The role of parkin in the regulation of mitochondrial clearance  

12:30-13:30  **Lunch**  

13:30-14:30  **Poster Session (P1-P39)**  

14:30-16:10  **Session 3 (S7-S10)**  
**Chairman: Profs Xinliang Mao and Yoshinori Kondo**  
**S7** 14:30-14:50  
Dr. Junken Aoki, Tohoku University (20min)  
TGFα shedding assay: an accurate and versatile method for detecting GPCR activation  
**S8** 14:50-15:10  
Dr. Masanori Tachikawa, Tohoku University (20min)  
Pathological impact of hemichannels-mediated gateway on the brain barrier transport dynamics  
**S9** 15:10-15:40  
Dr. Fumi Nagatsugi, Tohoku University (30min)  
Development of the crosslinking reactions to RNA for application in cells  
**S10** 15:40-16:10  
Dr. Xinliang Mao, Soochow University (30min)  
The ubiquitin ligase HERC4 suppresses multiple myeloma by modulating c-Maf stability
16:10-16:30
**Coffee Break**

16:30-18:00   **Session 4 (S11-S14)**
Chairman: Profs Huabing Chen and Noriyasu Hirasawa

**S11** 16:30-17:00
Dr. Huabing Chen, Soochow University (30min)
Theranostic nanoparticles for cancer imaging and synergistic therapy

**S12** 17:00-17:20
Dr. Nobuyuki Takahashi, Tohoku University (20min)
Nicotinamide benefits both mothers and pups in two contrasting mouse models of preeclampsia

**S13** 17:20-17:40
Dr. Yoshitaka Matsuo, Tohoku University (20min)
Ubiquitination of stalled ribosome triggers ribosome quality control

**S14** 17:40-18:00
Dr. Takakazu Nakabayashi, Tohoku University (20min)
Sensing of Intracellular Environments by Autofluorescence Lifetime Imaging

18:10-19:40
**Exchange Meeting** (Sakura Hall)
Tuesday, 17th November, 2015

9:00-10:00  **Session 5 (S15-S17)**
Chairman: Prof. Hideaki Hara

**S15** 9:00-9:20
Dr. Norifumi Shioda, Tohoku University (20min)
Pathophysiological significance of DNA/RNA G-quadruplex in neurons

**S16** 9:20-9:40
Mr. Yuta Yoshino, Gifu Pharmaceutical University (20min)
The extracellular fragment of GPNMB improves memory and increases hippocampal GluA1 levels in mice

**S17** 9:40-10:00
Dr. Hidefumi Fukumitsu, Gifu Pharmaceutical University (20min)
FGF2 and dental pulp cells transplantation improve locomotor function after spinal cord injury

10:00-10:20  **Coffee Break**

10:20-11:20  **Session 6 (S18-S19)**
Chairman: Prof. Hidefumi Fukumitsu

**S18** 10:20-10:40
Dr. Atsushi Matsuzawa, Tohoku University (20min)
Regulatory mechanisms of stress-responsive kinase signaling by ubiquitination

**S19** 10:40-11:20
Dr. Feng Han, Zhejiang University (40min)
Resolution the inflammatory response during neurovascular damage: Cross-talk between microvessels and brain
11:30-11:45
Closing Remarks
Prof. Xuechu Zhen (Dean, Soochow University Graduate School Pharmaceutical Sciences)

12:00-
Excursion and Round Table Discussion in Zao-Shikino Hotel
(023-693-1211)
Poster session
(P1-P39)
**P1:** Protein-biomineralized nanocomposites for cancer therapeutics
○ Tan Yang
Soochow University

**P2:** The homeostasis of brain endothelial semaphorin 3G signaling regulates hippocampal plasticity
○ Tan Chao and Feng Han
Zhejiang University

**P3:** Ischemia/reperfusion-induced upregulation of TIGAR in brain is mediated by SP1 and modulated by ROS and hormones involved in glucose metabolism.
○ Meiling Sun, Zhipeng Zhou and Zheng-Hong Qin
Soochow University

**P4:** Anti-inflammatory activity of allosteric modulation of sigma-1 receptors in microglia.
○ Yu Zhang, Zhuang Wu and Xuechu Zhen
Soochow University

**P5:** Synthetic studies on pyranoindoles having inhibitory activity for HCV NS5B polymerase
○ Akihiro Noro, Kentaro Okano, Hidetoshi Tokuyama
Graduate School of Pharmaceutical Sciences, Tohoku University

**P6:** Synthetic studies on amauromine and its congeners
○ Hiroyuki Hakamata, Hirofumi Ueda, Hidetoshi Tokuyama
Graduate School of Pharmaceutical Sciences, Tohoku University
P7: Synthesis of thiirane derivatives using rhodium-catalyzed sulfur addition reaction to reactive alkenes
Mieko Arisawa, Takuya Ichikawa, Masahiko Yamaguchi
Department of Organic Chemistry, Graduate School of Pharmaceutical Sciences, Tohoku University

P8: Concentration Threshold and Amplification Phenomena during Helix-dimer Formation of Sulfonamidohelicene Tetramer
Yo Kushida, Masanori Shigeno, and Masahiko Yamaguchi
Department of Organic Chemistry, Graduate School of Pharmaceutical Sciences, Tohoku University

P9: N,N-Dimethyl-1-aminoadamantane: A Novel Amine Catalyst for Kornblum-DeLaMare Rearrangement
Tetsuya Kuga, Yusuke Sasano, Yoshiharu Iwabuchi
Graduate School of Pharmaceutical Sciences, Tohoku University

P10: Development of hydroazulene-type chiral building blocks and application to sesquiterpenoid synthesis
Keisuke Morisaki, Hisataka Kobayashi, Ryunosuke Ichikawa, Takahiro Koseki, Naoto Hama, Yusuke Sasano, Naoki Kanoh, and Yoshiharu Iwabuchi
Graduate School of Pharmaceutical Sciences, Tohoku University

P11: Synthetic study of Asperterrestide A, a cytotoxic cyclic tetrapeptide.
Yuichi Masuda, Zhang Linnan, and Takayuki Doi
Graduate School of Pharmaceutical Sciences, Tohoku University
P12: Synthetic Study for Histone Deacetylase Inhibitor, Spiruchostatin A and its Analogues
Masahito Yoshida, Koji Umeda, Ken-ichi Sasahara, and Takayuki Doi
Graduate School of Pharmaceutical Sciences, Tohoku University

P13: Development of Alkaloid-like Compound Library by the Use of Diversity-enhanced Extracts
Keisuke Ichinohe, Haruhisa Kikuchi, Yoshiteru Oshima
Graduate School of Pharmaceutical Sciences, Tohoku University

P14: ZnCl₂-induced production of novel metabolites in the cellular slime mold Dictyostelium brunneum
Van Hai Nguyen, Haruhisa Kikuchi, Yoshiteru Oshima
Graduate School of Pharmaceutical Sciences, Tohoku University

P15: A Facile Electrochemical Detection of Hypochlorite Ion based on Ferrocene Compounds
Baozhen Wang and Jun-ichi Anzai
Anzai’s Lab, Pharmaceutical Sciences, Tohoku University

P16: Copper-Catalyzed C(sp³)-H Aminative Cyclization of 2-Alkyl-N-arylbenzamides: A Novel Approach for the Synthesis of N-Aryl-isoindolinones
Kanako Kumada, Takehiro Kameyama, Jun Kadokawa, Yoshinori Kondo
Graduate School of Pharmaceutical Sciences, Tohoku University
**P17:** Pd-catalyzed C(sp^2^)-H Selective Aminocarbonylation of 2-Halophenethylamines  
○ Hiroshi Taneda, Kiyofumi Inamoto, Yoshinori Kondo  
Graduate School of Pharmaceutical Sciences, Tohoku University

**P18:** Development of Deoxygenative Cyclization of 2-Nitrobiaryls by Silylborane  
○ Masahiro ABE, Kanako KUMADA, Yoshinori KONDO  
Graduate School of Pharmaceutical Sciences, Tohoku University

**P19:** Development of the Effective Chemical Strategy for Regulation of Gene Expression  
○ Fumi Nagatsugi ^1^, Shinya Hagihara ^2^, Shuhei Kusano ^3^  
1 Tohoku University, IMRAM 2 Nagoya University, 3 Fukuoka University

**P20:** Application of scrambled internal standard peptides to MALDI-MS/MS-based plasma protein quantification  
○ Toshihiro Yoneyama ^1^, Sumio Ohtsuki ^2^, Yasuo Uchida ^1^, Masanori Tachikawa ^1^, Tetsuya Terasaki ^1^  
1 Graduate School of Pharmaceutical Sciences, Tohoku University, Japan, 2 Faculty of Life Sciences, Kumamoto University, Japan

**P21:** Plasma protein biomarker discovery of glioblastoma multiforme based on comprehensive data independent MS/MS acquisition  
○ Eisuke Miyauchi ^1^, Masanori Tachikawa ^1^, Takuya Furuta ^2^, Mitsutoshi Nakada ^2^, Sumio Ohtsuki ^3^, Tetsuya Terasaki ^1^  
1 Graduate School of Pharmaceutical Sciences, Tohoku University, Japan, 2 Graduate School of Medical Sciences, Kanazawa University, Japan, 3 Faculty of Life Sciences, Kumamoto University, Japan
**P22:** Regulation of inflammatory responses through Roquin-2-mediated suppression of ASK1 activation
○ Yuki Kudoh, Yusuke Hirata, Takuya Noguchi, and Atsushi Matsuzawa

**P23:** Elucidation of trans-fatty acid-specific biological effects on cellular functions in macrophages
○ Miki Takahashi, Yuki Kudoh, Yusuke Hirata, Takuya Noguchi, and Atsushi Matsuzawa

**P24:** Molecular mechanisms of cellular dysfunction caused by antibacterial cephalosporins
○ Natsumi Mutoh, Yusuke Hirata, Takuya Noguchi, and Atsushi Matsuzawa

**P25:** A Novel and Sensitive Assay for Heme Oxygenase Activity
Saki Iwamori¹, ○ Emiko Sato¹,², Daisuke Saigusa³, Kouichi Yoshinari⁴, Sadayoshi Ito², Hiroshi Sato¹,², Nobuyuki Takahashi¹,²
¹ Division of Clinical Pharmacology and Therapeutics, Tohoku University Graduate School of Pharmaceutical Sciences 2 Division of Nephrology, Endocrinology and Vascular Medicine, Department of Medicine, Tohoku University 3 Department of Integrative Genomics, Tohoku Medical Megabank Organization, Tohoku University 4 Department of Molecular Toxicology, School of Pharmaceutical Sciences, University of Shizuoka
P26: A novel reduced uterine perfusion pressure (RUPP) model of preeclampsia in mice
 Tomofumi Fushima¹, Akiyo Sekimoto¹, Yuji Oe², Emiko Sato¹,², Sadayoshi Ito², Hiroshi Sato¹,², Nobuyuki Takahashi¹,²
 ¹Tohoku University Graduate School of Pharmaceutical Sciences
 ²Division of Nephrology, Endocrinology, and Vascular Medicine, Tohoku University Graduate School of Medicine

P27: Coagulation factor Xa and protease-activated receptor 2 are novel therapeutic targets for diabetic nephropathy
 Yuji Oe¹, Sakiko Hayashi², Tomofumi Fushima², Emiko Sato¹,², Kiyomi Kisu¹, Hiroshi Sato¹,², Sadayoshi Ito¹, Nobuyuki Takahashi¹,²
 ¹Division of Nephrology, Endocrinology, and Vascular Medicine, Tohoku University Graduate School of Medicine
 ²Division of Clinical Pharmacology and Therapeutics, Tohoku University Graduate School of Pharmaceutical Sciences & Faculty of Pharmaceutical Sciences

P28: Simultaneous quantitative analysis of modified nucleosides by liquid chromatography-tandem mass spectrometry.
 Daisuke Jinno¹, Kazuki Saitoh¹, Shinnosuke Nankumo¹, Yoshitomi Kanemitsu¹, Hiroki Tsukamoto¹, Yotaro Matsumoto¹, Eikan Mishima², Chitose Suzuki³, Takaaki Abe⁴, Yoshihisa Tomioka¹
 ¹Laboratory of Oncology, Pharmacy Practice and Sciences, Graduate School of Pharmaceutical Sciences, Tohoku University.
 ²Division of Nephrology, Endocrinology, and Vascular Medicine and Tohoku Medical Megabank Organization, Tohoku University.
 ³Division of Nephrology, Endocrinology, and Vascular Medicine, Tohoku University.
 ⁴Division of Nephrology, Endocrinology, and Vascular Medicine, Department of Clinical Biology and Hormonal Regulation, and Department of Medical Science, Graduate School of Biomedical Engineering, Tohoku University.
**P29:** Inhibitory effect of nicotine on TSLP production by epidermal keratinocytes
- Jiangxu Dong, Ryosuke Segawa, Natsumi Mizuno, Masahiro Hiratsuka, Noriyasu Hirasawa
Laboratory of Pharmacotherapy of Life-Style Related Diseases, Graduate School of Pharmaceutical Sciences, Tohoku University

**P30:** Epigenetic regulation in Winged Eye induced trans-determination of organ identity in Drosophila
- Keita Masuko, Hirofumi Furuhashi, Shoichiro Kurata
Molecular Genetics, Grad. School Pharm. Sci., Tohoku Univ.

**P31:** Limitation of the application of diphenylhexatriene to evaluate the fluidity of membrane in the presence of Aβ
- Masako Suzuki, Takashi Miura, Takakazu Nakabayashi
Graduate School of Pharmaceutical Sciences, Tohoku University

**P32:** The control of cell aggregation by the NO photodissociation in the carbohydrate-binding protein
- Ippei Satoh, Hirotsgu Hiramatsu, Takakazu Nakabayashi
Graduate School of Pharmaceutical Sciences, Tohoku University

**P33:** Oligomerization and structural changes of hGal-1 induced via the binding of farnesyl group
- Kazumi Yamaguchi, Hirotsgu Hiramatsu, Takakazu Nakabayashi
Graduate School of Pharmaceutical Sciences, Tohoku University
**P34:** Glucagon-like peptide-1 protects the murine hippocampus against stressors
○Yuta Yoshino, Mitsue Ishisaka, Masamitsu Shimazawa, Hideaki Hara
Molecular Pharmacology, Department of Biofunctional Evaluation, Gifu Pharmaceutical University, Gifu, Japan

**P35:** Sigma-1 receptor stimulation rescues depressive-like behaviors in CaMKIV null mice
○Shigeki Moriguchi ¹, Hiroyuki Sakagfami ², and Kohji Fukunaga ¹
¹. Department of Pharmacology, Graduate School of Pharmaceutical Sciences, Tohoku University ². Department of Anatomy, School of Medicine, Kitasato University

**P36:** T-type Ca²⁺ channel activation by spiroimidazopyridine compound.
○Yasushi Yabuki¹, Minoru Wakamori², and Kohji Fukunaga¹
¹. Department of Pharmacology, Graduate School of Pharmaceutical Sciences, Tohoku University, Sendai, Japan. 2. Department of Oral Biology, Graduate School of Dentistry, Tohoku University, Sendai, Japan.

**P37:** Post-traumatic stress disorder-like behaviors in FABP3 null mice.
○ Ibuki Takahata¹, Yasushi Yabuki¹, Yuji Owada² and Kohji Fukunaga¹
¹. Department of Pharmacology, Graduate School of Pharmaceutical Sciences, Tohoku University, Sendai, Japan. 2. Department of Organ Anatomy, Graduate School of Medicine, Tohoku University, Sendai, Japan.
**P38:** Sigma-1 receptor-selective agonist, SA4503 rescues transverse aortic constriction-induced depressive-like behaviors in mice
○ Yasuharu Shinoda, Kohga Hirano, Hideaki Tagashira, Kohji Fukunaga
Department of Pharmacology, Graduate School of Pharmaceutical Sciences, Tohoku University

**P39:** Deficient dopamine D$_2$L receptor function causes stress vulnerability through activation of serotonergic neurons
○ Wataru Sugimoto, Norifumi Shioda, Kohji Fukunaga
Department of Pharmacology, Graduate School of Pharmaceutical Sciences, Tohoku University