

企画シンポジウム1 C会場 ■ Planned Symposium 1 Hall C

大会第1日：3月28日(火)・March 28 (Tue) 9:50 - 11:50

日韓合同シンポジウムー FAOPS2019に向けてー
心血管の機能と病態におけるミトコンドリア恒常性制御

Japan-Korea Joint Symposium – Towards FAOPS2019 –
Mitochondrial homeostasis in cardiovascular function and disease

オーガナイザー・Organizer：

西田 基宏 (自然科学研究機構岡崎統合バイオサイエンスセンター (生理学研究所) 心循環シグナル研究部門)
Motohiro Nishida (Div Cardiocirc Signal, Okazaki Inst Integr BioSci (Natl Inst Physiol Sci), NINS)

Jin Han (Dept Physiol, Col Med, CMDC, Inje Univ)

1PS01C1-1 Cardiac mitochondrial defects in the sepiapterin reductase KO mouse
Jin Han, Hyoungkyu Kim, Taehee Ko, Nari Kim, Sung-Ryul Lee, Kyungsoo Ko, Byoungdoo Rhee
Dept Physiol, Col Med, CMDC, Inje Univ, Busan, Korea

1PS01C1-2 ミトコンドリアtRNA修飾によるタンパク質恒常性の維持機構
○魏 范研¹, 鈴木 勉², 富澤 一仁¹
¹熊大・院医・分子生理, ²東京大学大学院工学系研究科化学生命工学専攻
Regulation of cellular protein homeostasis by mitochondrial tRNA modification
Fan-Yan Wei¹, Tsutomu Suzuki², Kazuhito Tomizawa¹
¹Dept Mol Physiol, Faculty of Life Sci, Kumamoto Univ, Kumamoto, Japan, ²Dept Chem Biotech, Sch Engineering, Univ Tokyo, Tokyo, Japan

1PS01C1-3 平滑筋Ca²⁺シグナルにおけるミトフュージン2の生理機能
○山村 寿男, 川崎 桂輔, 稲垣 奏, 鈴木 良明, 今泉 祐治
名市大・院薬・細胞分子薬効解析
Physiological functions of mitofusin 2 on cytosolic Ca²⁺ signaling in smooth muscle cells
Hisao Yamamura, Keisuke Kawasaki, Sou Inagaki, Yoshiaki Suzuki, Yuji Imaizumi
Dept Mol Cell Pharmacol, Grad Sch Pharmaceut Sci, Nagoya City Univ, Nagoya, Japan

1PS01C1-4 心筋ミトコンドリア動態のレドックス制御機構
○西田 基宏^{1,2,3,4}
¹岡崎生理研統合バイオ・心循環, ²九州大・院薬・創薬育薬研究施設, ³総研大・生理科学専攻, ⁴JST さきがけ「疾患代謝」
Mechanism underlying redox regulation of cardiac mitochondria dynamics
Motohiro Nishida^{1,2,3,4}
¹Div Cardiocirc Signal, Okazaki Inst Integr BioSci (Natl Inst Physiol Sci), NINS, Okazaki, Japan, ²Dept Transl Pharm Sci, Grad Sch Pharm Sci, Kyushu Univ, Fukuoka, Japan, ³Dept Physiol, SOKENDAI, Okazaki, Japan, ⁴JST, PRESTO

Aims & Scope

Maintenance of organellar functions has been now attracted attention as a new strategy for the prevention of cardiovascular diseases. Especially, mitochondria plays pivotal roles including energy production, Ca²⁺ handling, and autophagy. Mitochondrial dysfunction causes various muscular refractory diseases. Mitochondrial dynamics are precisely regulated by various environmental factors, such as hypoxia, oxidative stress (including electrophilic environmental pollutants) and hyperglycemia, and failure of mitochondrial quality control will increase the risk of cardiovascular diseases. In this symposium, we will introduce cutting-edge researches on the molecular mechanisms underlying controlling mitochondrial quality, and consider new strategies for the prevention or treatment of cardiovascular diseases.

企画シンポジウム8 C会場 ■ Planned Symposium 8 Hall C

大会第2日：3月29日(水)・March 29 (Wed) 13:30 - 15:30

**日台合同シンポジウムー FAOPS2019に向けて
イオンチャネルの生理・病態生理**

**Japan-Taiwan Joint Symposium– Towards FAOPS2019 –
Ion channels in physiology and patho-physiology**

オーガナイザー・Organizer：

樽野 陽幸 (京都府立医科大学大学院医学研究科 細胞生理学)

Akiyuki Taruno (Dept Mol Cell Physiol, Grad Sch Med, Kyoto Pref Univ Med)

Pei-Chun Chen (Dept Physiol, Grad Sch Basic Med, Natl Cheng Kung Univ)

2PS08C2-1 CALHMチャネルによる味覚の神経伝達

○樽野 陽幸¹, 丸中 良典^{1,2}

¹京都府立医大・院医・細胞生理, ²京都府立医大・院医・バイオイオノミクス

Neurotransmission of taste mediated by calcium homeostasis modulator ion channels

Akiyuki Taruno¹, Yoshinori Marunaka^{1,2}

¹Dept Mol Cell Physiol, Grad Sch Med, Kyoto Pref Univ Med, Kyoto, Japan, ²Dept Bio-Ionomics, Grad Sch Med, Kyoto Pref Univ Med, Kyoto, Japan

2PS08C2-2 Concerted trafficking regulation of Kv2.1 and K_{ATP} channels by leptin in pancreatic β-cells

Pei-Chun Chen¹, Yi Wu², Show-Ling Shyng²

¹Dept Physiol, Grad Sch Basic Med, Natl Cheng Kung Univ, Tainan, Taiwan, ²Dept Biochem and Mol Biol, OHSU, USA

2PS08C2-3 少数の分子による嗅覚情報伝達チャネルの修飾

○竹内 裕子, 倉橋 隆

阪大・院・生命・生理

Modification of the olfactory transduction channel by small molecules

Hiroko Takeuchi, Takashi Kurahashi

Grad Sch Front Biosci, Osaka Univ, Japan

2PS08C2-4 Regulation of adult neurogenesis in the mouse SGZ by Kv1.1 potassium channel

Shi-Bing Yang

Inst Biomed Sci, Academia Sinica, Taipei, Taiwan

Aims & Scope

Towards the success of FAOPS 2019 in Japan, the Physiological Society of Japan (PSJ) has been organizing joint symposia with FAOPS countries. Here, we would like to propose a joint symposium with the Chinese Physiological Society (CPS) (Taiwan). This CPS-PSJ joint symposium is focused on "ion channels in physiology and patho-physiology" and consists of 4 talks by 2 CPS speakers and 2 PSJ speakers.

Growing evidence has demonstrated that ion channels play important roles in health and diseases throughout our body. Since ion channels mediate many physiological processes, malfunction of ion channels lead to diseases (a.k.a. channelopathy). Thus, knowing ion channels involved in physiological systems and their regulatory mechanisms is crucial for treating channelopathies. In this symposium, we would like to introduce recent advances in ion channel researches lead by Taiwanese and Japanese researchers. Taruno will talk about discovery of a novel ion channel that mediates neurotransmission of tastes. Chen will present their work on concerted trafficking regulation of Kv2.1 and K_{ATP} channels by leptin in pancreatic β-cells. Takeuchi will introduce how the olfactory transduction channels are modified by small molecules. And finally, Yang will discuss regulation of adult neurogenesis by Kv1.1 channel.

企画シンポジウム14 C会場 ■ Planned Symposium 14 Hall C

大会第3日：3月30日(木)・March 30 (Thu) 8:50 - 10:50

日中合同シンポジウム—FAOPS2019に向けて—
Computational physiologyの進展

Japan-China Joint Symposium – Towards FAOPS2019 –
Progress in computational physiology

オーガナイザー・Organizer：

松岡 達 (福井大学医学部 統合生理学)

Satoshi Matsuoka (Dept Integ Sys Physiol Fac Med Sci Univ Fukui)

Jianwei Shuai (Dept Physics, Xiamen Univ)

3PS14C1-1 Simulation study of multiscale Ca^{2+} signals

Jianwei Shuai

Dept Physics, Xiamen Univ, China

3PS14C1-2 小型中枢神経シナプスにおける伝達物質放出機構の実験とモデルによる解析

○川口 真也

同志社大・脳科学研究科

Experimental and model analysis of transmitter release mechanisms at small presynaptic terminals in the CNS

Shinya Kawaguchi

Grad Sch Brain Sci, Doshisha Univ, Kyoto, Japan

3PS14C1-3 心臓ミトコンドリアエネルギー代謝の Ca^{2+} 調節に関するシミュレーション研究

○松岡 達¹, 竹内 綾子¹, 齋藤 隆太², 姫野 友紀子³

¹福井大学・医・統合生理, ²田辺三菱製薬・先端医薬研究所, ³立命館大学・生命科学・生命情報

A simulation study on Ca^{2+} regulation of energy metabolism in cardiac mitochondria

Satoshi Matsuoka¹, Ayako Takeuchi¹, Ryuta Saito², Yukiko Himeno³

¹Dept Integ Sys Physiol Fac Med Sci Univ Fukui, Fukui, Japan, ²Adv Drug Res Lab Mitsubishi Tanabe Pharma Co. Saitama, Japan, ³Dept Bioinfo, Col Life Sci, Ritsumeikan Univ, Shiga, Japan

3PS14C1-4 心臓興奮伝導における生理学のおよび病態生理学的モデリング研究 (AP4)

○津元 国親, 倉智 嘉久

大阪大・院医・薬理

Physiological and pathophysiological modeling studies of excitation conduction in the heart: prediction from changes in the subcellular Na^+ channel distribution

Kunichika Tsumoto, Yoshihisa Kurachi

Div Pharma, Grad Sch Med, Osaka Univ, Osaka, Japan

Aims & Scope

Mathematics and computational analysis have been useful tools for integrative and quantitative understanding of logic of life, physiology. The application has been widely spreading. In this symposium, we will introduce recent progress of computational physiology in China and Japan to further facilitate quantitative research using computation. Profs. Shuai (China), Kawaguchi, Tsumoto and Matsuoka will present simulation-based physiological study on multiscale Ca^{2+} signals, transmitter release dynamics at a small CNS presynaptic terminal, electrical conduction in the physiological and pathophysiological heart and cardiac energy metabolism, respectively. We expect this symposium will foster collaborative works in physiology between China and Japan.