

**The 17th International Symposium on Molecular and  
Neural Mechanisms of Taste and Olfactory Perception  
(ISMNTOP/YRUF/AISCRIB 2018)**

*in conjunction with*

**Special Events celebrating the 50<sup>th</sup> Anniversary of  
Monell Chemical Senses Center**

**第17回国際シンポジウム“味覚嗅覚の分子神経機構”**

(うま味若手フォーラム/アジア国際シンポジウム“化学受容と摂食行動”

2018) /米国モネル化学感覚センター50周年記念イベント

**Organizer: Yuzo Ninomiya**

**Research and Development Center for Five-Sense Devices  
Kyushu University**

## **PROGRAM & ABSTRACTS**

**November 30-December 2, 2018**

**Kyushu University Station-I and II for Collaborative  
Research (Maidashi campus), Fukuoka, Japan**

## **Hosted by**

**Kyushu University, Research and Development Center  
for Five-Sense Devices**

九州大学・五感応用デバイス研究開発センター

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(JASTS)**

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**ISMNTOP website:**

<http://ismntop.webcrow.jp/ISNMTOP/ISMNTOP.html>

**The 17th International Symposium on Molecular and Neural Mechanisms  
of Taste and Olfactory Perception  
(ISMNTOP2018 /YRUF2018/AISCRIB2018)  
in conjunction with Special Events celebrating the 50<sup>th</sup> anniversary of  
Monell Chemical Senses Center, USA**

**November 30<sup>th</sup>, Friday** -----

■ **Opening remarks 15:30 - 15:40** Yuzo Ninomiya (*Kyushu Univ*)

■ **Special Event: celebrating the 50<sup>th</sup> anniversary of Monell Chemical Senses Center**  
**I. Scientific Session 15:40 - 18:20**

[Chair: Yuzo Ninomiya (*Kyushu Univ*), Ichiro Matsumoto (*Monell Chemical Senses ctr*)]

SS1 15:40-16:20

Monell at 50 and its special relationship with Japan

Gary K. Beauchamp (*Monell Chemical Senses Ctr*)

SS2-SS8 16:20-17:50

SS2: Recalling those days I spent at 6-year-old Monell

Takashi Yamamoto (*Kio Univ*)

SS3: Umami taste efficacies with Monell Center since 1977

Kunio Torii

SS4: My first challenge to patch-clamp study in Monell

Kumiko Sugimoto (*Tokyo Med Dent Univ*)

SS5: Looking back on my last year in Monell

Tadashi Nakamura (*Univ Electro-Communications*)

SS6: Neurophysiological study on carbonation reception at Monell

Michio Komai (*Tohoku Univ*)

SS7: Monell's 40s: enduring memories from 2009 to 2014

Emi Taruno-Mura (*Suntory Grobal Innovation Ctr*)

SS8: My first year as Post-doc in Monell - Beginning Of Brand-new era -

Shingo Takai (*Kyushu Univ*)

SS9 17:50-18:20

Goals and plans for Monell's next 5-50 years

Robert F Margolskee (*Monell Chemical Senses Ctr*)

**December 1<sup>st</sup>, Saturday** -----

■ **Session I 10:00 - 12:35**

**Olfaction**

[Chair: Masahiro Yamaguchi (*Kochi Univ*), Takeshi Imai (*Kyushu Univ*)]

IS1-1 10:00 – 10:25

Olfactory marker protein buffers cAMP in olfactory receptor neurons

Noriyuki Nakashima

*Department of Physiology, Kurume University*

IS1-2 10:25 – 10:50

Involvement of the olfactory tubercle in odor-induced motivated behaviors in mice

Koshi Murata

*Division of Brain Structures and Functions, Faculty of Medical Sciences, University of Fukui*

**IS1-3 10:50 – 11:15**

**Olfactory neural circuits involved in physiological changes**

**Kunio Kondoh**<sup>1,2</sup>, Zhonghua Lu<sup>2</sup>, Linda B. Buck<sup>2</sup>

<sup>1</sup>*Division of Endocrinology and Metabolism, National Institute for Physiological Sciences, Okazaki, Japan,*

<sup>2</sup>*Basic Sciences Division, Fred Hutchinson Cancer Research Center, Seattle, USA*

▶ Break 15min

**IS1-4 11:30 – 11:55**

**The Mitf transcription factor is required for intrinsic plasticity of olfactory projection neurons**

**Petur Henry Petersen**

*Laboratory of Neurobiology, University of Iceland*

**IS1-5 11:55 – 12:35 (invited talk)**

**Concentration invariant odor identity coding**

**Dmitry Rinberg**

*Department of Neuroscience and Physiology, Neuroscience Institute, NYU Langone Health, New York, USA*

■ **Session II 13:40 – 16:00**

**Asian International Symposium on Chemo-Reception and Ingestive Behavior 2018**

**(AISCRIB2018)**

[Chair: Mamiko Ozaki (*Kobe Univ*), Akiyuki Taruno (*Kyoto Pref Univ Med*)]

**IS2-1 13:40 – 14:10 (invited talk)**

**Comprehensive functional screening of taste sensation *in vivo***

**Myunghwan Choi**

*Department of Biomedical Engineering, Sungkyunkwan University, Suwon, South Korea*

**IS2-2 14:10 – 14:35**

**Mechanism of odorant receptor class choice in mice**

**Junji Hirota**<sup>1,2</sup>

<sup>1</sup>*Center for Biological Resources and Informatics, Tokyo Institute of Technology, Yokohama 226-8501, Japan,*

<sup>2</sup>*Department of Life Science and Technology, Graduate School of Life Science and Technology, Tokyo Institute of Technology, Yokohama 226-8501, Japan*

**IS2-3 14:35 – 15:00**

**Peripheral modification of odor information: Ultrastructure and function of a gap junction-mediated novel neural network within an olfactory sensory unit of ant**

**Mamiko Ozaki**

*Department of Biology, Graduate School of Science, Kobe University, Nada, Kobe 657-8501, Japan*

**IS2-4 15:00 – 15:30 (invited talk)**

**Neural circuits determining the predictive value of an odor**

Nobuhiro Yamagata, **Hiromu Tanimoto**

*Graduate School of Life Sciences, Tohoku University*

**IS2-5 15:30 – 16:00 (invited talk)**

**Mechanisms of taste avoidance learning in the nematode *C. elegans***

Moon-Sun Jang<sup>1</sup>, Hirofumi Kunitomo<sup>1</sup>, Yu Toyoshima<sup>1</sup>, Masahiro Tomioka<sup>1</sup>, Stephen Wu<sup>3</sup>, Suzu Oe<sup>2</sup>, Yuishi Iwasaki<sup>4</sup>, Ryo Yoshida<sup>3</sup>, Takeshi Ishihara<sup>2</sup>, **Yuichi Iino**<sup>1</sup>

<sup>1</sup>*Department of Biological Sciences, the University of Tokyo,* <sup>2</sup>*Department of Biology, Kyushu University,* <sup>3</sup>*The Institute of Statistical Mathematics,* <sup>4</sup>*Department of Intelligent Systems Engineering, Ibaraki University*

▶ Break 16:00 - 16:20

■ **Session III 16:20 – 18:00**

**Human Sensory Perception**

[Chair: Kumiko Sugimoto (*Tokyo Med Dent Univ*)]

**IS3-1 16:20 - 17:00 (invited talk)**

**Human sensory perception of oleocanthal, a natural anti-inflammatory in extra virgin olive oil**

Catherine Peyrot Des Gachons, **Gary K. Beauchamp**

*Monell Chemical Senses Center, USA*

**IS3-2 17:00 – 17:30 (invited talk)**

**Genotyping Analysis of Bitter-Taste Receptor Genes TAS2R38 and TAS2R46 in Japanese Patients with Gastrointestinal Cancers**

**Michio Komai**

*Graduate School of Agricultural Science, Tohoku University*

**IS3-3 17:30 – 18:00 (invited talk)**

**Activity of frontal pole cortex reflecting hedonic tone of food and drink: fNIRS study in humans**

**Takashi Yamamoto**, Yuji Minematsu, Kayoko Ueji

*Department of Nutrition, Faculty of Health Sciences, Kio University, 4-2-4 Umami-naka, Koryo, Kitakatsuragi, Nara 635-0832, Japan*

■ **Poster Session & Social Gathering 18:10 – 21:00**

@ Collabo-Station II, 1F Communication lounge, Kyushu University

**December 2<sup>nd</sup>, Sunday -----**

■ **Session IV 9:50 – 11:45**

**Development and differentiation of the chemosensory system**

[Chair: Satoshi Wakisaka (*Osaka Univ*)]

**IS4-1 9:50 – 10:30 (invited talk)**

**A roadmap: from stem cells to taste receptor cells**

**Ichiro Matsumoto**

*Monell Chemical Senses Center, USA*

**IS4-2 10:30 – 10:55**

**Regulation of taste cell maturation**

**Hirohito Miura**, Eriko Koyanagi, Shuitsu Harada

*Department of Oral Physiology, Kagoshima University Graduate School of Medical and Dental Sciences, Kagoshima, Japan*

**IS4-3 10:55 – 11:20**

**KLF5 promotes expression of the mouse T1R1 amino acid (umami) receptor gene (*Tas1r1*) in C2C12 cells**

**Takashi Toyono**<sup>1</sup>, Yuki Hirata<sup>2</sup>, Yui Obikane<sup>2</sup>, Shinji Kataoka<sup>1</sup>, Mitsushiro Nakatomi<sup>1</sup>, Yuji Seta<sup>2</sup>

<sup>1</sup>*Division of Anatomy, Kyushu Dental University,* <sup>2</sup>*Division of Oral Reconstruction and Rehabilitation*

**IS4-4 11:20 – 11:45**

**Introducing *in vitro* culture system into researches of endoderm-derived cells**

**Ken Iwatsuki**

*Dept. Nutritional Science and Food Safety, Tokyo Univ. Agriculture, Tokyo, Japan*

▣ **Lunch and Poster Session 11:45– 12:50**

■ Session V 12:50 – 16:25

**Transporters, ion channels and GPCRs involved in chemosensory signaling**

[Chair: Ken Iwatsuki (*Tokyo Univ. Agricul*), Noriyuki Nakashima (*Kurume Univ*)]

**IS5-1 12:50 – 13:30 (invited talk)**

**Sugar and Fat and Everything Caloric: How and Why Taste Cells Sense Calories**

Sunil Sukumaran, M.H. Ozdener, **Robert F. Margolskee**

*Monell Chemical Senses Center, 3500 Market Street, Philadelphia, PA 19104, USA*

**IS5-2 13:30 – 14:00 (invited talk)**

**Ion channel synapses of the taste bud**

**Akiyuki Taruno**<sup>1,2</sup>, Zhongming Ma<sup>3</sup>, Makoto Ohmoto<sup>4</sup>, Ichiro Matsumoto<sup>4</sup>, Mizuho A. Kido<sup>5</sup>, Michael G. Tordoff<sup>4</sup>, J. Kevin Foskett<sup>3</sup>

<sup>1</sup>*Department of Molecular Cell Physiology, Kyoto Prefectural University of Medicine, Kyoto, Japan*, <sup>2</sup>*JST, PRESTO, Saitama, Japan*, <sup>3</sup>*Department of Physiology, University of Pennsylvania, Philadelphia, PA, USA*, <sup>4</sup>*Monell Chemical Senses Center, Philadelphia, PA, USA*, <sup>5</sup>*Department of Anatomy and Physiology, Saga University, Saga, Japan*

**IS5-3 14:00 – 14:30 (invited talk)**

**TRP channels and evolution**

**Makoto Tominaga**<sup>1,2</sup>

<sup>1</sup>*Division of Cell Signaling, National Institute for Physiological Sciences*, <sup>2</sup>*Thermal Biology Group, Exploratory Research Center on Life and Living Systems*

**IS5-4 14:30 – 14:55**

**Warm sensitive TRP channels and oral mucosal barrier**

Reiko U. Yoshimoto<sup>1,2,3</sup>, Yasuyoshi Ohsaki<sup>2</sup>, Wei-qi Gao<sup>1</sup>, Ailin Cao<sup>1,2</sup>, **Mizuho A. Kido**<sup>1,2</sup>

<sup>1</sup>*Division of Histology and Neuroanatomy, Department of Anatomy and Physiology, Faculty of Medicine, Saga University*, <sup>2</sup>*Department of Oral Pathology*, <sup>3</sup>*Periodontology, Graduate School of Dental Science, Kyushu University, Fukuoka, Japan*

▶ Break 14:55 - 15:05

**IS5-5 15:05 – 15:35 (invited talk)**

**Protein thermal shift assay indicated a broad amino acid-binding capability of the ligand-binding domains of fish T1r taste receptor**

Takashi Yoshida<sup>1</sup>, Norihisa Yasui<sup>1</sup>, Nanako Atsumi<sup>1</sup>, Yuko Kusakabe<sup>2</sup>, **Atsuko Yamashita**<sup>1</sup>

<sup>1</sup>*Graduate School of Medicine, Dentistry and Pharmaceutical Sciences, Okayama University, Japan*, <sup>2</sup>*Food Research Institute, NARO, Japan*

**IS5-6 15:35 - 16:00**

**Functional diversification of primate taste receptors**

**Hiroo Imai**<sup>1</sup>, Akihiro Itoigawa<sup>1</sup>, Nami Suzuki-Hashido<sup>1</sup>, Emiko Nishi<sup>1</sup>, Takashi Hayakawa<sup>1</sup>, Laurentia Purba<sup>2</sup>, Kanthi Widayati<sup>2</sup>, Bambang Suryobroto<sup>2</sup>

<sup>1</sup>*Primate Research Institute, Kyoto University, Japan*, <sup>2</sup>*Department of Biology, Bogor Agricultural University, Indonesia*

**IS5-7 16:00 - 16:25**

**Mechanisms of kokumi and sweet taste in chickens**

**Fuminori Kawabata**<sup>1</sup>, Hikaru Omori<sup>2</sup>, Momoko Higashida<sup>2</sup>, Yuko Kawabata<sup>3</sup>, Shotaro Nishimura<sup>2</sup>, Shoji Tabata<sup>2</sup>

<sup>1</sup>*Physiology of Domestic Animals, Faculty of Agriculture and Life Science, Hirosaki University*, <sup>2</sup>*Laboratory of Functional Anatomy, Faculty of Agriculture, Kyushu University*, <sup>3</sup>*Section of Oral Neuroscience, Graduate School of Dental Sciences, Kyushu University*

■ Closing remarks 16:25 - Mamiko Ozaki (*Kobe Univ*)

[Discussants:

Gary K. Beauchamp (Monell Chem Senses Center), Robert F. Margolskee (Monell Chem Senses Center), Ichiro Matsumoto (Monell Chem Senses Center), Dmitry Rinberg (NYU), Myunghwan Choi (Sungkyunkwan Univ), Hyung Joon Ahn (Yonsei Univ), Yamamoto T (Kio Univ), Sugimoto K (Tokyo Med Dent Univ), Komai M (Tohoku Univ), Nakamura T (Univ Electro-Comm), Miyamoto T (Nippon Womens Univ), Iino Y (Univ of Tokyo), Tominaga M (Okazaki Inst for Integ Biosci), Torii K (Torii Nutrient-stasis Inst Inc), Wakisaka S (Osaka Univ), Ozaki M (Kobe Univ), Hirota J (Tokyo Inst Tech), Ohmoto M (Tokyo Inst Tech), Tanimoto H (Tohoku Univ), Toyono T (Kyushu Dent Coll), Seta Y (Kyushu Dent Coll), Iwatsuki K (Tokyo Univ Agricul), Taruno A (Kyoto Pref Univ of Med), Kawabata F (Hirosaki Univ), Imai H (Kyoto Univ), Kido M (Saga Univ), Sako N (Asahi Univ), Yasuo T (Asahi Univ), Yamashita A (Okayama Univ), Kawai T (NARO), Miura H (Kagoshima Univ), Uchida K (Fukuoka Dent Coll), Inoue M (Tokyo Pharm Univ), Yasoshima Y (Osaka Univ), Sakai N (Tohoku Univ), Miyazaki T (NIH-NICHD), Matsui T (Kyushu Univ), Toko K (Kyushu Univ), Imai T (Kyushu Univ), Yamaguchi M (Kochi Univ), Nakashima N (Kurume Univ), Murata K (Univ of Fukui), Kondoh K (NIPS), Petur Henry Petersen (Univ of Iceland), Osada K (Hokkaido Iryo Univ), Kimura T (Ajinomoto Co Inc), Ninomiya K (Ajinomoto Co Inc), Kohmura M (Ajinomoto Co Inc), Ogiwara Y (Ajinomoto Co Inc), Ishiwatari Y (Ajinomoto Co Inc), Maruyama Y (Ajinomoto Co Inc), Kubo S (Ajinomoto Co Inc), Ohkuri T (Suntory Global Innovation Center Ltd), Shikata H (JT), Jyotaki M (JT), Yokomukai Y (ILSI), Nagai H (Zensho Holdings)]



## ■ Poster Session

### ISP01

#### Regulation of actin cytoskeleton via LIMK mediates dendrite remodeling in mitral cells

Shuhei Aihara, Takeshi Imai

*Graduate School of Medical Sciences, Kyushu University, Fukuoka, Japan*

### ISP02

#### Spontaneous Activity-Dependent Discrete Circuit Formation in the Developing Olfactory Bulb

Satoshi Fujimoto<sup>1</sup>, Marcus N. Leiwe<sup>1</sup>, Yuko Muroyama<sup>2</sup>, Tetsuichiro Saito<sup>2</sup>, Takeshi Imai<sup>1</sup>

*<sup>1</sup>Graduate School of Medical Sciences, Kyushu University, Fukuoka, Japan, <sup>2</sup>Graduate School of Medicine, Chiba University, Chiba, Japan*

### ISP03

#### Interglomerular presynaptic inhibition of olfactory sensory neurons

Shigenori Inagaki, Ryo Iwata, Takeshi Imai

*Graduate School of Medical Sciences, Kyushu University, Fukuoka, Japan*

### ISP04

#### Spontaneous network activity in the awake neonatal mouse olfactory bulb

Marcus Leiwe, Satoshi Fujimoto, Takeshi Imai

*Graduate School of Medical Sciences, Kyushu University, Fukuoka, Japan*

### ISP05

#### Genetic tools for neuronal circuit tracing

Richi Sakaguchi, Marcus Leiwe, Takeshi Imai

*Graduate School of Medical Sciences, Kyushu University, Fukuoka, Japan*

### ISP06

#### Oxytocin receptor signaling contributes to olfactory avoidance behavior induced by an unpleasant odorant

Kazumi Osada<sup>1</sup>, Tohru Ohta<sup>2</sup>, Rie Takai<sup>2</sup>, Sadaharu Miyazono<sup>3</sup>, Makoto Kashiwayanagi<sup>3</sup>, Shizu Hidema<sup>4</sup>, Katsuhiko Nishimori<sup>4</sup>

*<sup>1</sup>Div. of Physiol. Sch. of Dent. HSUH, <sup>2</sup>Res. Inst. of Health Sci. HSUH, <sup>3</sup>Dept. of Sense. Physiol. Asahikawa Medical Univ., <sup>4</sup>Dept. of Mol. Biol. Grad. Sch. of Agri. Tohoku Univ.*

### ISP07

#### Effects of food hardness, elasticity, and amount taken at a time on salivation

Yukino Ogawa, Yuko Kusakabe

*Division of Food Function Research, National Agriculture and Food Research Organization (NARO)*

### ISP08

#### Functional screening platform for taste sensation *in vivo*

Jisoo Han<sup>1,2</sup>, Pyong-gang Choi<sup>1,2</sup>, Myunghwan Choi<sup>1,2</sup>

*<sup>1</sup>Department of Biomedical Engineering, Sungkyunkwan University, Suwon, South Korea. <sup>2</sup>Center for Neuroscience and Imaging Research, Institute for Basic Science (IBS), Suwon, South Korea.*

### ISP09

#### A New Method for Accuracy Evaluation of High-potency Sweeteners by Using Taste Sensor

Yuanchang Liu<sup>1</sup>, Xiao Wu<sup>2</sup>, Yusuke Tahara<sup>2</sup>, Rui Yatabe<sup>1</sup>, Hidekazu Ikezaki<sup>3</sup>, Kiyoshi Toko<sup>2,4</sup>

*<sup>1</sup>Graduate School of Information Science and Electrical Engineering, Kyushu University, Japan, <sup>2</sup>Research and Development Center for Five-Sense Devices, Kyushu University, Japan, <sup>3</sup>Intelligent Sensor Technology, Inc., Japan, <sup>4</sup>Institute for Advanced Study, Kyushu University, Japan*

### ISP10

#### Altered expression of gustatory-signaling elements in fungiform papillae taste buds cells of VC deficient rats

Toshiaki Yasuo, Tomoki Yamamura, Takeshi Suwabe, Noritaka Sako

*Department of Oral Physiology, Asahi University School of Dentistry, Mizuho 501-0296, Japan*

#### ISP11

##### **Contribution or association of flavor and/or texture of foods on food aversion learning**

**Kaiji Yamamichi**<sup>1</sup>, Takuya Onuma<sup>2</sup>, Nobuyuki Sakai<sup>1</sup>

<sup>1</sup>*Department of Psychology, Graduate School of Arts and Letters, Tohoku University, Japan,* <sup>2</sup>*Faculty of Humanity-oriented Science and Engineering, Kindai University, Japan*

#### ISP12

##### **Investigation of specific agonist of *Tas2r108* through calcium imaging**

**Su-Young Ki**, Ki-Myung Chung, Young-Kyung Cho, Kyung-Nyun Kim

*Department of Physiology and Neuroscience, College of Dentistry and Research Institute of Oral Sciences, Gangneung-Wonju National University, Gangneung, 210-702, Korea*

#### ISP13

##### **Multicolor lineage tracing of Sox2-expressing cells in the oral epithelium**

**Makoto Ohmoto**<sup>1,2</sup>, Junji Hirota<sup>2,3</sup>, Ichiro Matsumoto<sup>1</sup>

<sup>1</sup>*Monell Chemical Senses Center, Philadelphia, PA, U.S.A.,* <sup>2</sup>*Center for Biological Resources and Informatics,*

<sup>3</sup>*Department of Life Sciences and Technology, Tokyo Institute of Technology, Yokohama, Kanagawa, Japan*

#### ISP14

##### **Association between the decrease of taste sensitivity and masticatory function in the elderly**

**Hyo-Jung Jung**, Yong-Guang Min, Youn-Jung Park, Bok-Eum Kim, Hyung-Joon Ahn

*Department of Orofacial pain & Oral medicine, Yonsei University College of Dentistry, Seoul, Republic of Korea*

#### ISP15

##### **Leptin signaling pathway linking from activation of leptin receptor to K<sub>ATP</sub> channel activation in sweet sensitive taste cells in mice**

**Ryusuke Yoshida**<sup>1</sup>, Robert F. Margolskee<sup>2</sup>, Yuzo Ninomiya<sup>2,3</sup>

<sup>1</sup>*Department of Oral Physiology, Graduate School of Medicine, Dentistry and Pharmaceutical Science, Okayama University, Japan,* <sup>2</sup>*Monell Chemical Senses Center, PA, USA,* <sup>3</sup>*Division of Sensory Physiology, Research and Development Center for Five-Sense Devices, Kyushu University, Japan*

#### ISP16

##### **Miso flavor could be generalized to a saltiness enhancing flavor**

**Takayuki Kawai**<sup>1</sup>, Yuko Kusakabe<sup>1</sup>, Yukino Ogawa<sup>1</sup>, Yuji Wada<sup>2</sup>

<sup>1</sup>*Food Research Institutes, NARO, Tsukuba, Japan,* <sup>2</sup>*College of Sci. and Eng., Ritsumeikan Univ., Kusatsu, Japan*

#### ISP17

##### **The potential effects of insulin signaling on mouse taste bud organoid**

**Shingo Takai**<sup>1</sup>, Robert F. Margolskee<sup>2</sup>, Peihua Jiang<sup>2</sup>, Yuzo Ninomiya<sup>2,3</sup>, Noriatsu Shigemura<sup>1,3</sup>

<sup>1</sup>*Section of Oral Neuroscience, Faculty of Dental Science, Kyushu University,* <sup>2</sup>*Monell Chemical Senses Center,* <sup>3</sup>*R & D Center for Five-Sense Devices, Kyushu University.*

#### ISP18

##### **Genetic identification of gustatory second-order neurons to dissect information processing between the taste sensory system and the feeding/reward systems in *Drosophila***

**Takaaki Mivazaki**<sup>1,2,3</sup>, Tzu-Yang Lin<sup>1</sup>, Chi-hon Lee<sup>1</sup>, Mark Stopfer<sup>1</sup>, Kei Ito<sup>2</sup>, Emiko Suzuki<sup>3,4</sup>

<sup>1</sup>*NIH-NICHD,* <sup>2</sup>*IMCB, Univ. Tokyo,* <sup>3</sup>*National Institute of Genetics, Japan,* <sup>4</sup>*SOKENDAI*

#### ISP19

##### **Adrenomedullin enhances chorda tympani nerve responses to sugars but not to artificial sweetener in mice**

**Shusuke Iwata**<sup>1</sup>, Keiko Yasumatsu<sup>1</sup>, Mayuko Inoue<sup>1</sup>, Ryusuke Yoshida<sup>2</sup>, Yuzo Nimomiya<sup>1,3</sup>

<sup>1</sup>*Research and Development Center for Five-Sense Devices, Kyushu University, Japan,* <sup>2</sup>*Department of Oral Physiology, Graduate School of Medicine, Dentistry and Pharmaceutical Science, Okayama University, Japan,* <sup>3</sup>*Monell Chemical Senses Center, USA*

#### ISP20

##### **Salt taste preference and amiloride-sensitive ENaC in chickens**

**Yui Hayase**, Fuminori Kawabata, Yuko Kawabata, Shotaro Nishimura, Shoji Tabata

*Laboratory of Functional Anatomy, Faculty of Agriculture, Kyushu University, Fukuoka, Japan*

**ISP21****Analysis of mRNA expressions and functions of sour taste receptor candidate PKD2L1 in chickens**

**Masashi Araki**, Fuminori Kawabata, Yuko Kawabata, Yuta Yoshida, Shotaro Nishimura, Shoji Tabata  
*Laboratory of Functional Anatomy, Faculty of Agriculture, Kyushu University, Fukuoka, Japan*

**ISP22****New agonists for chicken TRPA1**

**Kana Murayama**, Fuminori Kawabata, Ruojun Liang, Shotaro Nishimura, Shoji Tabata  
*Laboratory of Functional Anatomy, Faculty of Agriculture, Kyushu University, Fukuoka, Japan*

**ISP23****Identifying the functional bitter taste receptors in chickens**

**Takeo Muraoka**, Fuminori Kawabata, Yuko Kawabata, Bapon dey, Shotaro Nishimura, Shoji Tabata  
*Laboratory of Functional Anatomy, Faculty of Agriculture, Kyushu University, Fukuoka, Japan*