

The 4th International Symposium on Molecular and Neural Mechanisms of Taste and Olfactory Perception

10th, July

■ **Opening remarks 9:55 - 10:00** Yuzo Ninomiya (Kyushu Univ.)

■ **Session I 10:00 - 12:00**

Organization of Taste Receptor Systems

[Chairpersons: Satoshi Wakisaka (Osaka Univ.), Kuniaki Toyoshima (Kyushu Dent. Coll.)]

IS1-1. 10:00 - 10:20

Wnt/ β -catenin signaling pathway is essential for taste papillae development

Ken Iwatsuki, Robert F. Margolskee

Department of Neuroscience, Mount Sinai School of Medicine

IS1-2. 10:20 - 10:40

Jacalin, a histochemical marker of type IV cells of mammalian taste buds

Satoshi Wakisaka, Ryo Taniguchi, Hiroyuki Okada, Akira Ito, Yasuo Ichimori, Katsura Ueda, Shiho Honma

Department of Oral Anatomy and Developmental Biology, Osaka University Graduate School of Dentistry

IS1-3. 10:40 - 11:00

Differentiation of the basal cells of mouse taste buds

Hirohito Miura, Ayumi Nakayama, Hiroshi Tomonari, Shuitsu Harada

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

IS1-4. 11:00 - 11:20

Are neurosteroids possible messenger candidates for intercellular communication within the taste bud ?

Kuniaki Toyoshima, Yuji Seta, Takashi Toyono, Shinji Kataoka

Department of Bioscience, Division of Oral Anatomy and Neurobiology, Kyushu Dental College

IS1-5. 11:20 - 11:40

Expression of GABA-producing enzyme, glutamate decarboxylase, in mouse taste bud

Hiroshi Ueno¹⁾, Nakamura, Y.²⁾, Yanagawa, Y.³⁾, Obata, K.⁴⁾ and Watanabe, M.⁵⁾

¹⁾Laboratory of Applied Microbiology and Biochemistry, Nara Women's University; ²⁾Graduate School of Humanities and Sciences, Nara Women's University; ³⁾Department of Anatomy, Osaka Medical College; ⁴⁾Department of Genetic and Behavioral Neuroscience, Gunma University Graduate School of Medicine; ⁵⁾Neuronal Network Mechanisms Research Group, RIKEN Brain Science Institute

11:40 - 12:00 General Discussion

[Discussants: Sadao Kiyohara (Kagoshima Univ.), Shigeru Takami (Kyorin Univ.), Kumiko Sugimoto (Tokyo Med. Dent. Univ.), Yuji Seta (Kyushu Dent. Coll), Tetsuya Ookura(NFRI)]

12:00 – 13:00 Lunch

■ **Session II 13:00 - 14:50**

YR Umami Forum: Amino acid Receptors

[chairpersons: Takayuki Marui (Ohu Univ.), Yukako Hayashi (Kyoto Univ.)]

IS2-1. 13:00 - 13:20

Two families of candidate taste receptors in fishes

Okada S., Ishimaru Y., Naito H., Nagai T., Yasuoka A., Matsumoto I., and Abe K.

Department of Applied Biological Chemistry, Graduate School of Agricultural and Life Sciences, The University of Tokyo

IS2-2. 13:20 - 13:40

Umami taste is still complex: evidence from functional imaging

Yutaka Maruyama¹⁾, Elizabeth Pereira¹⁾, Nirupa Chaudhari^{1, 2)}, and Stephen D. Roper^{1, 2)}

¹⁾*Department of Physiology and Biophysics and* ²⁾*Program in Neuroscience, University of Miami Miller School of Medicine*

IS2-3. 13:40 - 14:00

Allelic Variation of the *Tas1r3* Taste Receptor Gene Selectively Affects Behavioral and Neural Taste Responses to Sweeteners in the F2 Hybrids between C57BL/6ByJ and 129P3/J Mice

Masashi Inoue

Tokyo University of Pharmacy and Life Sciences

IS2-4. 14:00 - 14:20

An umami taste receptor in the GI tract

A. M. San Gabriel¹⁾, H. Uneyama¹⁾, T. Maekawa¹⁾, S. Yoshie²⁾, and K. Torii¹⁾

¹⁾*The Physiology and Nutrition group, Institute of Life Sciences, Ajinomoto Co., Inc.*

²⁾*Department of Anatomy, Nippon Dental University*

IS2-5. 14:20 - 14:50

Taste signal transduction proteins are co-expressed in solitary cells of the gastro-intestinal tract

Carole Bezençon, Johannes le Coutre and Sami Damak

Nestlé Research Center, CH-1000 Lausanne, Switzerland

[Discussants: Kunio Torii (Ajinomoto Co., Inc.), Teiichi Tanimura (Kyushu Univ.), Noritaka Sako (Asahi Univ.), Yuko Kusakabe (Natl. Food Res. Inst.), Takashi Toyono (Kyushu Dent. Coll.)]

14:50 – 15:10 Break

■ Session III 15:10 -18:30

Chemical Signaling Circuits from Receptor Cells to CNS

[Chairpersons: Shuitsu Harada (Kagoshima Univ.), Mamiko Ozaki (Kobe Univ.)]

IS3-1. 15:10 - 15:30

A revisit to electrophysiology of gustatory receptor neurons in *Drosophila*.

Makoto Hiroi^{1) 2)}, Teiichi Tanimura¹⁾, Frédéric Marion-Poll²⁾

¹⁾ *Department of Biology, Graduate School of Sciences, Kyushu University*

²⁾ *UMR 1272, Physiologie de l'Insecte: Signalisation and Communication, INRA – INA P-G – Paris 6, Route de Saint Cyr, 78026 Versailles Cedex, France*

IS3-2. 15:30 - 15:50

Voltage-gated membrane currents of morphologically identified cells in frog taste discs

Hideyuki Fukami¹⁾, Takeshi Suwabe²⁾, Kazuhisa Okuda-Akabane¹⁾ and Yasuyuki Kitada¹⁾

¹⁾ Department of Oral Physiology, Iwate Medical University, School of Dentistry

²⁾ Department of Biologic and Materials Sciences, School of Dentistry, University of Michigan

IS3-3. 15:50 - 16:40

Transduction, voltage-gated currents, and calcium signaling in defined subsets of taste cells

Sue C. Kinnamon

Dept. of Biomedical Sciences, Colorado State Univ., Fort Collins, CO, and Rocky Mountain Taste and Smell Center, Univ. Colorado Denver Health Sciences Center, Aurora, CO, USA

IS3-4. 16:40 - 17:30

For mice lacking P2X ATP receptors, the world is a sour and bitter place

Thomas E. Finger

Rocky Mountain Taste & Smell Center, Univ. Colorado Medical School, Aurora, CO, USA

IS3-5. 17:30 - 17:50

Spatial distribution of the transsynaptic tracer originating from specific taste receptor cells during mouse development

Makoto Sugita, and Yoshiki Shiba

Department of Oral Physiology, Graduate School of Biomedical Sciences, Hiroshima University

IS3-6. 17:50 - 18:10

Taste modifying action of miracle fruit in humans as seen by magnetoencephalography

Takashi Yamamoto¹⁾, Chizuko Yamamoto¹⁾, Hajime Nagai²⁾, Kayo Takahashi¹⁾, Seiji Nakagawa³⁾, Masahiko Yamaguchi³⁾, and Mitsuo Tonoike³⁾

¹⁾Osaka University, ²⁾Cerebos Pacific Limited, ³⁾AIST

18:10 - 18:30 General Discussion for Session II and III

[Discussants: Takatoshi Nagai (Keio Univ.), Kumiko Sugimoto (Tokyo Med. Dent. Univ.), Tekenori Miyamoto (Jpn. Women's Univ.), Yukio Okada (Nagasaki Univ.), Shinya Kataoka (Kyushu Dent. Coll.), Takayuki Kawai (Natl. Food Res. Inst.)]

11th, July

■ Session IV 9:00 – 12:15

State-of-the-Art Research in Olfaction

[Chairperson: Kazushige Touhara (Tokyo Univ.)]

IS4-1. 9:00 - 9:30

The processing of odorant information from the olfactory organ through to forebrain

Alexander A. Nikonov and John Caprio

Dept. of Biol. Sci., LSU, Baton Rouge, LA 70803. USA.

IS4-2. 9:30 - 9:50

Deciphering the molecular basis of neural circuit development in the zebrafish olfactory system

Nobuhiko Miyasaka, Yuki Sato, and Yoshihiro Yoshihara

Laboratory for Neurobiology of Synapse, RIKEN Brain Science Institute

IS4-3. 9:50 - 10:10

Real-time dynamics of molecular elements within the nano-scale olfactory sensory cilia

Hiroko Takeuchi and Takashi Kurahashi

Dept of Frontierbiosciences, Osaka University

IS4-4. 10:10 - 10:40

Comprehensive analysis of ligand specificities of mammalian odorant receptors

Hiroaki Matsunami

Department of Molecular Genetics and Microbiology, Duke University Medical Center, USA

10:40 – 10:50 Break

IS4-5. 10:50 - 11:10

***In vivo* odorant receptor code in the mouse olfactory system**

Yuki Oka and Kazushige Touhara

Department of Integrated Biosciences, The University of Tokyo

IS4-6. 11:10 - 11:30

Glomerular map formation in the mouse olfactory system

Takeshi Imai^{1,2)} and Hitoshi Sakano^{1,2)}

¹⁾ *Department of Biophysics and Biochemistry, Graduate School of Science, The University of Tokyo*

²⁾ *CREST Program of Japan Science and Technology Agency*

IS4-7. 11:30 - 12:00

Olfactory receptors signal identity

Stuart Firestein

Columbia University, New York, USA

12:00 – 12:15 General Discussion

[Discussants: Noriyo Suzuki (Jpn. Chem. Sens. Res. Inst.), Hideto Kaba (Kochi Univ.), Masumi Ichikawa (Tokyo, Metro. Inst. Neurosci.), Makoto Kashiwayanagi (Asahikawa Med. Univ.)]

■ Concluding remarks 12:15 - 12:20

Hideto Kaba (Kochi Univ.)