

The 22nd International Symposium on Molecular and Neural mechanisms of Taste and Olfactory Perception (ISMNTOP XXII / YRUF XXII / AISCRIB XIII)

第22回国際シンポジウム“味覚嗅覚の分子神経機構”

(併催：第22回うま味若手フォーラム,
第13回アジア国際シンポジウム“化学受容と摂食行動”)

Organizer:

Ryusuke Yoshida

Okayama University, Japan

Yuzo Ninomiya

Okayama University, Japan

Kyushu University, Japan

Monell Chemical Senses Center, USA

PROGRAM & ABSTRACTS

February 28 - March 1, 2026

**Dental School Building 4F, Okayama University,
2-5-1, Shikata-cho, Kita-ku, Okayama, 700-8525, Japan**

Hosted by

**Department of Oral Physiology,
Graduate School of Medicine, Dentistry and
Pharmaceutical Sciences, Okayama University**

岡山大学大学院医歯薬学総合研究科口腔生理学分野

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**Umami Manufacturer's Association of Japan
Ajinomoto Co., Inc.
Japanese Association for the Study of Taste and Smell
(JASTS)**

Organizing Committee

Takeshi Imai (Kyushu University, Japan)
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Monell Chemical Senses Center, USA)

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<https://www.okayama-u.ac.jp/user/oralphys/ISMNTOP/ISMNTOP.html>

**The 22nd International Symposium on Molecular and Neural mechanisms
of Taste and Olfactory Perception
(ISMNTOP XXII / YRUF XXII / AISCRIB XIII)**

February 28th, Saturday -----

■ **Opening remarks** **12:50 - 13:00**

Ryusuke Yoshida (*Okayama Univ*)

■ **Session I** **13:00 - 14:15**

Peripheral taste

[Chair: Atsuko Yamashita (*Osaka Univ*), Keisuke Sanematsu (*Kyushu Univ*)]

IS1-1 13:00 - 13:25

The possible molecular mechanisms for gum preference in common marmosets

Hiroo Imai

Center for the Evolutionary Origins of Human Behavior, Kyoto University, Japan

IS1-2 13:25 - 13:50

Sweet Taste in Folivory: Functional Diversity of the T1R2/T1R3 Receptor in Malagasy Primates

Akihiro Itoigawa^{1,2}, Yasuka Toda^{2,3}, Yoshiro Ishimaru², Hiroo Imai⁴

¹*Institute for Protein Research, The University of Osaka, Japan,* ²*Department of Agricultural Chemistry, School of Agriculture, Meiji University, Japan,* ³*School of Life Science and Technology, Institute of Science Tokyo, Japan,*

⁴*Center for the Evolutionary Origins of Human Behavior, Kyoto University, Japan*

IS1-3 13:50 - 14:15

***Prox1* maintains taste bud structure via inhibition of apoptosis**

Hirohito Miura¹, Aya Hagimoto^{1,2}, Eriko Koyanagi-M¹, Norihito Oura^{1,3}, Mitsuru Saito¹, Tatsuro Tanaka²

¹*Dept. Oral Physiol.,* ²*Dept. Maxillofac. Radiol.,* ³*Dept. Oral Maxillofac. Surg., Kagoshima Univ. Grad. Sch. Med. Dent. Sci., Kagoshima, Japan*

▶ Break 14:15 - 14:30

■ **Special lecture 1** **14:30 - 15:10**

[Chair: Ryusuke Yoshida (*Okayama Univ*)]

More than sour: the many faces of OTOP1

Emily Liman

University of Southern California, USA

▶ Break 15:10 - 15:20

■ **Session II** **15:20 - 17:00**

Umami Taste

[Chair: Takashi Kondoh (*Kindai Univ*), Ken Iwatsuki (*Tokyo Univ Agri*)]

IS2-1 15:20 - 15:45

Non-human primate taste organoids reveal umami responsiveness and synergism

Ken Iwatsuki

Department of Nutritional Science and Food Safety, Faculty of Applied Biosciences, Tokyo University of Agriculture, Japan

IS2-2 15:45 - 16:10

Evaluation of umami taste in Japanese participants: enhancement by 5'-ribonucleotides and suppression by lactisole

Takashi Kondoh^{1,2}

¹*Dept. of Food Science and Nutrition, Faculty of Agriculture, Kindai University,* ²*Agricultural Technology and Innovation Research Institute, Kindai University, Japan*

IS2-3 16:10 – 16:35

Involvement of GPR91 in the perception of the umami-like shellfish taste of succinate

Seiji Kitajima^{1, 2}, Yutaka Maruyama¹, Yutaka Ishiwatari¹, Motonaka Kuroda¹, Wolfgang Meyerhof², Maik Behrens^{2, 3}

¹*Institute of Food Sciences & Technologies, Ajinomoto Co., Inc., Japan,* ²*German Institute of Human Nutrition Potsdam-Rehbruecke, Dept. Molecular Genetics, Germany,* ³*Leibniz Institute for Food Systems Biology at the Technical University of Munich, Germany*

IS2-4 16:35 – 17:00

Diversity of nutrient sensation in the gut

Shih-Hua Chou, Hikari Takeshima, Takeshi Imai

Graduate School of Medical Sciences, Kyushu University, Japan

■ Poster session 1 17:00 - 18:15

■ Bus transportation 18:30 -

■ Short Talk Session & Social Gathering 19:00 – 21:00

@ REST&EVENT HALL FORTEEN

2nd basement, Central building, 6-36, Honmachi, Kita-Ku, Okayama

[Chair: Ryusuke Yoshida (*Okayama Univ*)]

Short talk session will start from 19:30

- 19:30 ISP01 Junko Inoko (*Nagoya Univ*)
- 19:33 ISP02 Sakura Moriyama (*Kyoto Univ*)
- 19:36 ISP03 Yu Zuo (*Okayama Univ*)
- 19:39 ISP04 Takashi Kondoh (*Kindai Univ*)
- 19:42 ISP05 Kana Tanaka (*Kindai Univ*)
- 19:45 ISP06 Minbo Li (*Dalian Polytechnic Univ*)
- 19:48 ISP07 Su Young Ki (*Korea Univ*)
- 19:51 ISP08 Min Gyeong Lee (*Korea Univ*)
- 19:54 ISP09 Toshiaki Yasuo (*Asahi Univ*)
- 19:57 ISP10 Shusuke Iwata (*Asahi Univ*)
- 20:00 ISP11 Geehyun Lee (*Seoul National Univ*)
- 20:03 ISP12 Jun Sakai (*Asahi Univ*)
- 20:06 ISP13 Hina Nishii (*Nagoya Univ*)
- 20:09 ISP14 Mamiko Ozaki (*Nara Women's Univ*)
- 20:12 ISP15 Yuyeon Lee (*DGIST*)
- 20:15 ISP16 Yujin Ahn (*DGIST*)
- 20:18 ISP17 Seung-Jun Yoo (*Hanyang Univ*)

March 1st, Sunday -----

■ Session III 9:00 - 10:40

Olfaction

[Chair: Izumi Fukunaga (*OIST*), Takeshi Imai (*Kyushu Univ*)]

IS3-1 9:00 – 9:25

Smelling Adrenaline in the Water: Olfactory Responses to Biogenic Amines in Zebrafish

Ling Fei Tee¹, Tetsuya Koide¹, Hokto Kazama², Yoshihiro Yoshihara¹

¹Laboratory for Systems Molecular Ethology, *RIKEN Center for Brain Science, Japan*, ²Laboratory for Circuit Mechanisms of Sensory Perception, *RIKEN Center for Brain Science, Japan*

IS3-2 9:25 – 9:50

Hierarchy in the frontal cortex in context-dependent olfactory decision-making

Josefine Reuschenbach, Maria Inês de Sá Ribeiro, Xiaochen Fu, **Izumi Fukunaga**

Sensory and Behavioural Neuroscience Unit, OIST Graduate University, Japan

IS3-3 9:50 – 10:15

Granule Cell Plasticity and Olfactory Learning

Itaru Imayoshi^{1,2}, Masayuki Sakamoto¹, Akiko Ide¹

¹The Graduate School of Biostudies, *Kyoto University, Japan*, ²Institute for Life and Medical Sciences, *Kyoto University, Japan*

IS3-4 10:15 – 10:45

Visualization of odor space and quality with 2D gas sensor

Kenshi Hayashi

Graduate School of Information Science and Electrical Engineering, Kyushu University, Japan

▶ Break 10:45 - 11:00

■ Special lecture 2 11:00 - 11:40

[Chair: Izumi Fukunaga (*OIST*), Takeshi Imai (*Kyushu Univ*)]

An odor patch foraging task to study learning and decision making

Cindy Poo, Tiffany Ona, Bruno Cruz

Allen Institute for Neural Dynamics, Seattle, WA, USA

■ Lunch & Poster session 2 & Voting 11:40 - 13:00

■ Session IV 13:00 - 14:55

Asian International Symposium on Chemo-Reception and Ingestive Behavior (AISCRIB XIII)

[Chair: Seok Jun Moon (*Yonsei Univ*), Akiyuki Taruno (*Kyoto Univ/ Kyoto Pref Univ Med*)]

IS4-1 13:00 – 13:30 (special talk)

Regional, cell-type, and modal specification of taste bud organoids

Yong Taek Jeong^{1,2}

¹Department of Pharmacology, *Korea University College of Medicine*, ²Department of Biomedical Science, *Korea University College of Medicine, Republic of Korea*

IS4-2 13:30 – 14:00 (special talk)

Brain mechanisms of blood glucose regulation mediated by sweetness and prediction

Chitoku Toda

Department of Neuroscience for Metabolic Control, Faculty of Life Sciences, Kumamoto University, Japan

IS4-3 14:00 – 14:30

Brain-body interactions underlying emotion, memory, and glucose homeostasis

Takuva Sasaki

Department of Pharmacology, Tohoku University, Japan

IS4-4 14:30 – 14:55

Genetic dissection of the class I odorant receptor gene cluster in mice

Tetsuo Iwata^{1,2}, Sirapop Nithiuthai¹, Guo Xiao Peng¹, Hiro Kondo², Junji Hirota^{1,2}

¹Department of Life Science and Technology, School of Life Science and Technology, Institute of Science Tokyo, Japan, ²Bioscience Center, Institute of Science Tokyo, Japan



Break 14:55 – 15:10

■ Session V 15:10 – 16:50

New insight into taste system

[Chair: Keiko Yasumatsu (*Tokyo Dent Jr College*), Tadashi Inui (*Hokkaido Univ*)]

IS5-1 15:10 – 15:35

Circadian clock-gated cell renewal controls time-dependent changes in taste sensitivity.

Toru Matsu-ura

Department of Pathology, Kansai Medical University, Japan

IS5-2 15:35 – 16:00

A potential role of GPRC5C in sugar sensing and regulating glucose metabolism

Shingo Takai¹, Yuko Kawabata¹, Keisuke Sanamatsu^{1,2,3}, Yusaku Iwasaki⁴, Fuminori Kawabata⁵, Noriatsu Shigemura^{1,2}

¹Sect. of Oral Neurosci., Grad. Sch. Dental Sci., Kyushu Univ., ²R and D Center for Five-Sense Devices Taste and Odor Sensing, Kyushu Univ., ³OBT Res. Center, Kyushu Univ., ⁴Lab. of Animal Sci., Grad. Sch. Life and Env. Sci., Kyoto Pref. Univ., ⁵Physiol. of Domestic Anim., Faculty of Agric. and Life Sci., Hirosaki Univ.

IS5-3 16:00 – 16:25

Regulation of nutrient-specific feeding behaviors through the nodose petrosal ganglion

Hikari Takeshima¹, Shigefumi Yokota², Keisuke Ito³, Hideki Enomoto³, Takeshi Imai¹

¹Graduate School of Medical Sciences, Kyushu University, Fukuoka, Japan, ²Faculty of Medicine, School of Medicine, Department of Anatomy, Tottori University, Japan, ³Department of Physiology and Cell Biology, Kobe University Graduate School of Medicine, Kobe, Hyogo, Japan

IS5-4 16:25 – 16:50

Neural mechanism of specific appetite-induced food revaluation

Ken-ichiro Nakajima

Graduate School of Bioagricultural Sciences, Nagoya University, Japan

■ Closing remarks 16:50 -

Mamiko Ozaki (*Kobe Univ/Nara Women's Univ*)

[Discussants]

Emily Liman (*Univ Southern California*), Cindy Poo (*Allen Inst*), Yong Teak Jeong (*Korea Univ*), Moon SJ (*Yonsei Univ*), Kim KN (*Gangneung-Wonju National Univ*), Jung HS (*Yonsei Univ*), Sasaki T (*Tohoku Univ*), Toda C (*Kumamoto Univ*), Yamashita A (*Osaka Univ*), Sanematsu K (*Kyushu Univ*), Taruno A (*Kyoto Pref Univ Med*), Iwatsuki K (*Tokyo Univ Agri*), Imai T (*Kyushu Univ*), Fukunaga I (*OIST*), Imai H (*Kyoto Univ*), Inui T (*Hokkaido Univ*), Ozaki M (*Kobe Univ/Nara Women's Univ*), Inui-Yamamoto C (*Osaka Univ*), Yasumatsu K (*Tokyo Dent Jr College*), Itoigawa A (*Osaka Univ*), Miura H (*Kagoshima Univ*), Kondoh T (*Kindai Univ*), Kitajima S (*Ajinomoto*), Chou SH (*Kyushu Univ*), Tee LF (*RIKEN*), Imayoshi I (*Kyoto Univ*), Hayashi K (*Kyushu Univ*), Iwata T (*Inst Sci Tokyo*), Matsu-ura T (*Kansai Med Univ*), Takeshima H (*Kyushu Univ*), Nakajima K (*Nagoya Univ*), Sako N (*Asahi Univ*), Yasuo T (*Asahi Univ*), Iwata S (*Asahi Univ*), Takai S (*Kyushu Univ*), Nakashima N (*Kurume Univ*), Matsubara T (*Kyushu Dent Univ*), Toyono T (*Kyushu Dent Univ*), Mito Y (*Okayama Univ*), Horie K (*Okayama Univ*), Ohkuri T (*Suntory*), Kasahara M (*Ajinomoto*), Kohmura M (*Ajinomoto*)

■ Poster Session

ISP01

Effects of obesity and GLP-1 receptor agonists on taste-guided licking behavior in mice

Junko Inoko, Rattanajearakul Nawarat, Ken-ichiro Nakajima

Department of Applied Biosciences, Graduate School of Bio-agricultural Sciences, Nagoya University

ISP02

Functional crosstalk between olfactory receptors and TRPV1 in integration of chemosensory responses

Sakura Moriyama^{1,2}, Shuji Hinuma², Shun'ichi Kuroda²

¹Institute for Integrated Cell-Material Sciences (iCeMS), Kyoto University, Kyoto, Japan, ²SANKEN, The University of Osaka, Osaka, Japan

ISP03

Application and Validation of a Photoactivatable Cre-loxP System for Spatiotemporal Gene Manipulation in Mouse Taste Buds

Yu Zuo¹, Kengo Horie¹, Yoshihiro Mitoh¹, Yasuhiro Yamada², Tomoka Takao³, Takeshi Takarada³, Shoichiro Kokabu⁴, Ryusuke Yoshida¹

¹Dept. Oral Physiol, Grad. Sch. f Med., Dent. Pharmac. Sci, Okayama University, ²Dept. Mol. Pathol., Grad. Sch. Med. Fac. Med., The University of Tokyo, ³Dept. Regenerative Sci., Grad. Sch. Med., Dent. Pharmac. Sci., Okayama University, ⁴Div. Mol. Signaling and Biochem., Kyushu Dental University

ISP04

Taste modulation of L-histidine: the liaison of sweet and bitter

Takashi Kondoh^{1,2}

¹Dept. of Food Science and Nutrition, Faculty of Agriculture, Kindai University, Japan, ²Agricultural Technology and Innovation Research Institute, Kindai University, Japan

ISP05

Lactisole reduces the perception of sweet and umami tastes in Japanese participants

Kana Tanaka¹, Mei Kondoh², Rinka Hirata², Tatsuki Itoh^{1,2}, Takashi Kondoh^{2,3}

¹Graduate School of Agricultural and Life Science, ²Faculty of Agriculture, and ³Agricultural Technology and Innovation Research Institute, Kindai University, Japan

ISP06

A taste bud organoid based biosensor reveals cellular mechanisms of umami detection and synergy

Minbo Li^{1,2,4}, Junjie Yi⁵, Xianbing Xu^{1,2}, Ming Du^{1,2,3}

¹Key Laboratory of Food Nutrition and Health of Liaoning Province, School of Food Science and Technology, Dalian Polytechnic University, China, ²SKL of Marine Food Processing & Safety Control, School of Food Science and Technology, Dalian Polytechnic University, China, ³College of Food Science and Engineering, Dalian Ocean University, China, ⁴Department of Oral Physiology, Graduate School of Medicine, Dentistry and Pharmaceutical Sciences, Okayama University, Japan, ⁵Faculty of Food Science and Engineering, Yunnan Institute of Food Safety, Kunming University of Science and Technology, China

ISP07

Systematic Evaluation of AAV Capsids and Delivery Routes for Efficient Targeting of Primary Visceral Sensory Neurons

Su Young Ki^{1,2}, Yong Taek Jeong^{1,2}

¹Department of Pharmacology, Korea University College of Medicine, Republic of Korea, ²BK21 Graduate Program, Department of Biomedical Sciences, Korea University College of Medicine, Republic of Korea

ISP08

Establishment of Anterior Tongue-Derived Taste Bud Organoids

Min Gyeong Lee, Yong Taek Jeong

Department of Pharmacology, Korea University College of Medicine, Korea

ISP09

Amiloride-Sensitive Taste Responses to Sodium Ascorbate and Post-Ingestive Suppression of Intake in Ascorbate-Replete ODS Rats

Toshiaki Yasuo¹, Shinpei Takahashi¹, Shusuke Iwata¹, Takeshi, Suwabe², Noritaka Sako¹

¹Department of Oral Physiology, Asahi University School of Dentistry, Japan, ²Department of Oral Anatomy, Asahi University School of Dentistry, Japan

ISP10

Capsaicin Enhances Chorda Tympani Nerve and Behavioral Responses to Sugars via T1Rs-Independent Pathway in Mice

Shusuke Iwata¹, Toshiaki Yasuo¹, Shinpei Takahashi¹, Takeshi Suwabe², Keiko Yasumatsu³, Noritaka Sako¹, Yuzo Ninomiya⁴

¹Dept. Oral Physiol. Asahi Univ. Sch. Dent., ²Dept. Oral Anat. Asahi Univ. Sch. Dent., ³Tokyo Dental Junior College, ⁴Monell Chemical Senses Center

ISP11

Sweet OFF responses of sour cells: Cellular substrates underlying the aftertaste of artificial sweeteners

Geehyun Lee^{1,2}, Myunghwan Choi^{1,2}

¹School of Biological Sciences, Seoul National University, ²The Institute of Molecular Biology and Genetics, Seoul National University

ISP12

The chorda tympani nerve responses and preferences for different concentration of coffee mixed with thickeners in rats

Jun Sakai¹, Chikayo Maeda², Mana Oshio¹, Shinpei Takahashi³, Shusuke Iwata³, Toshiaki Yasuo³, Takeshi Suwabe⁴, Yoko Iwase², Hiroshige Taniguchi¹, Noritaka Sako³

¹Dept. Dent. Dysphagia Rehabil., Asahi Univ. Sch. Dent., Gifu, Japan, ²Dept. Dent. Disabil. Oral Health, Asahi Univ. Sch. Dent., Gifu, Japan, ³Dept. Oral Physiol., Asahi Univ. Sch. Dent., Gifu, Japan, ⁴Dept. Oral Anatomy, Asahi Univ. Sch. Dent., Gifu, Japan

ISP13

Gut-brain axis mediates Vitamin B1 specific appetite to elevate the preference of innately aversive diets.

Hina Nishii¹, Ken-ichiro Nakajima²

¹School of Agricultural Sciences, Nagoya University, ²Graduate School of Bioagricultural Sciences, Nagoya University

ISP14

‘Win-win’ defence of Brassicaceae seedlings by targeting insect olfaction and taste systems

Mamiko Ozaki^{1,2,3}, Tatsuya Uebi^{1,2}, Junpei Takagi^{4,5}, Somare Mizuho⁴, Tadashi Kunieda^{4,6}, Haruko Ueda⁴, Shigeru Matsuyama⁷, Toru Maeda^{1,8}, Shunya Habe¹, Kenji Yamada⁸, Ikuko Hara-Nishimura⁴

¹Graduate School of Science, Kobe University, ²KYOUSEI Science Center for Life and Nature, Nara Women's University, ³Graduate School of Engineering, Kobe University, ⁴Faculty of Science and Engineering, Konan University, ⁵Graduate School of Life Science, Hokkaido University, ⁶Division of Biological Science, Nara Institute of Science and Technology, ⁷Graduate School of Life and Environmental Sciences, University of Tsukuba, ⁸Malopolska Centre of Biotechnology, Jagiellonian University

ISP15

Comparing Bilateral and Unilateral Olfactory Recognition: Neural Correlates of Odor Recognition via EEG

Yuyeon Lee^{1,2}, Cheil Moon^{1,2}

¹Department of Brain Sciences, Graduate School, Daegu Gyeongbuk Institute of Science and Technology (DGIST), Daegu, Korea, ²Convergence Research Advanced Centre for Olfaction, Daegu Gyeongbuk Institute of Science and Technology, Daegu, Korea

ISP16

Effects of Olfactory Stimuli on Working Memory Performance and Prefrontal Cortex Activation

Yujin Ahn^{1,2}, Cheil Moon^{1,2}

¹Department of Brain Sciences, Daegu Gyeongbuk Institute of Science and Technology (DGIST), Daegu, Korea, ²Convergence Research Advanced Centre for Olfaction, Daegu Gyeongbuk Institute of Science and Technology (DGIST), Daegu, Korea

ISP17

Environmental Insults Disrupt the Olfactory Neuroimmune Axis and Brain Function

Seung-Jun Yoo

Department of Life Science, College of Natural Sciences, Hanyang University, Seoul, Republic of Korea