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# List of Abstracts from the Thirty-second Annual Meeting of the Association for Chemoreception Sciences

*The full content of these abstracts is available online at www.chemse.oxfordjournals.org.*

## GIVAUDAN LECTURE - NORMAL AND CANCER STEM CELLS AND THE DEVELOPMENT OF MALIGNANCY

### 1 Normal and Cancer Stem Cells and the Development of Malignancy

**Robert A. Weinberg**

## PLATFORM PRESENTATIONS - TIP OF THE TONGUE

### 2 Analysis of *Drosophila* TRPA1 reveals an ancient origin for human chemical nociception

**Paul A Garrity, Kyeongjin Kang, Stefan R Pulver, Vincent C Panzano, Leslie C Griffith, Douglas L Theobald**

### 3 A subpopulation of mouse Type II taste cells express functional voltage-gated calcium channels

**Pin Liu, Timothy A. Gilbertson**

### 4 Ryanodine Receptors selectively contribute to the formation of Taste evoked-calcium signals in Mouse taste cells

**Michelle R Rebello, Kathryn F Medler**

### 5 Acetylcholine, released from taste buds during gustatory stimulation, enhances taste responses

**Robin Dando, Yijen A. Huang, Stephen D. Roper**

### 6 Epithelial Sodium Channel (ENaC) is Involved in Reception of Sodium Taste: Evidence from Mice with a Tissue-Specific Conditional Targeted Mutation of the ENaC$\alpha$ Gene

**Natalia P. Bosak, Masashi Inoue, Theodore M. Nelson, Edith Hummler, Yutaka Ishiwatari, Alexander A. Bachmanov**

### 7 Novel proteolyzed ENaC isoforms and corresponding salt taste enhancing compounds

**Kambiz Shekdar, Jessica Langer, Purvi Shah, Joseph Gunnet, Dennis Sawchuk**

### 8 Recovery from Potassium Chloride (KCl) Loading Alters Amiloride-Sensitive Salt Taste in Humans

**George M Feldman, Gerard L Heck, Smith L Nancy**

### 9 Comparative Analysis of Bitter Taste Receptor Agonist Activation

**Maik Behrens, Stephan Born, Anne Brockhoff, Masha Y. Niv, Wolfgang Meyerhof**

## SYMPOSIUM - GENETICS OF HUMAN OLFACTION

### 10 Environmental and Genetic Effects on Human Odor Perception

**Markus Perola**

### 11 Phenotype/Genotype Associations in Human Olfaction

**Charles J. Wysocki, Danielle R. Reed, Doron Lancet, Yehudit Hasin, Antti Knaapila, Jennifer Louie, Fujiko Duke, Lisa Oriolo**

### 12 A genome-wide perspective on the perception of musk-like odorants

**Antti Knaapila, Gu Zhu, Danielle R. Reed, Charles J. Wysocki, Hely Tuorila, Markus Perola, Nicholas G. Martin, Margaret J. Wright**

### 13 Next generation genomics of human olfactory variation

**Doron Lancet, Yehudit Hasin, Sebastian Waszak, Ifat Keydar, Miriam Khen, Charles J. Wysocki, Edna Ben-Asher, Yoav Gilad, Jan O. Korbel, Tsviya Olender**

### 14 Genetics of Olfactory Perception in Humans

**Leslie B Vosshall**

## PRESIDENTIAL SYMPOSIUM: NEUROTRANSMITTERS AND NEUROMODULATORS IN THE TASTE BUD

### 15 Cells, signals, and synapses in mammalian taste buds

**Stephen Roper**

### 16 Modulation of sweet taste responses by orexigenic and anorexigenic factors

**Yuzo Ninomiya**

### 17 Insulin regulates the function of epithelial sodium channels and salt taste preference

**Timothy Gilbertson, Arian Baquero**

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## SYMPOSIUM - CILIA, SENSORY DYSFUNCTION AND DISEASE

### 18 Olfactory Cilia: Linking Sensory Cilia Function and Human Disease

Jeffrey Martens

### 19 Molecular Organization of Olfactory Transduction Components in Cilia

Randall Reed, Abigail L. D. Tadenev, Adrian Cuenca

### 20 Intraflagellar Transport functions in cilia assembly and signalling processes, and also in exocytosis

Joel Rosenbaum, Cosima Baldari, Francesca Fanetti, Kaiyao Huang, Chris Wood

### 21 Genetic interactions dictate photoreceptor cilia biogenesis, homeostasis and survival

Anand Swaroop

### 22 Loss of Bardet-Biedl Syndrome Proteins Causes Aberrant Localization of Ciliary GPCRs in Central Neurons

Kirk Mykytyn

### 23 Usher protein function in ciliated neuroepithelium of the cochlea and retina

Dominic Cosgrove

## PLATFORM PRESENTATIONS - POLAK YOUNG INVESTIGATOR AWARD WINNERS

### 24 Nasal SCCs respond to bacterial quorum sensing molecules

Marco Tizzano, Brian D. Gulbransen, Aurelie Vandenbeuch, Tod R. Clapp, Jake P. Herman, Hiruy M. Sibhatu, Mair E. A. Churchill, Wayne L. Silver, Sue C. Kinnamon, Thomas E. Finger

### 25 GABA: an inhibitory neurotransmitter in taste buds

Rene Barro-Soria, Stephen D Roper

### 26 Birthdates of mitral cells regulate the soma location in mouse olfactory bulb

Fumiaki Imamura, Albert E. Ayoub, Pasko Rakic, Charles A. Greer

### 27 Faf1 as a Regulator of Olfactory Axon Guidance

Kai Cheng, Leonardo Belluscio

### 28 Food for Thought: Processing of Food and Non-Food Odors in the Human Brain

Sanne Boesveldt, Jessica Albrecht, Johannes Gerber, Simona Negoias, Thomas Hummel, Johan N. Lundstrom

## SYMPOSIUM - SENSORY INTEGRATION AND COMPETITION

### 29 Smelling sounds: olfactory–auditory sensory convergence in the olfactory tubercle

Daniel W. Wesson, Donald A. Wilson

### 30 Multisensory stimulation modulates perceptual ratings and neuronal activity

Jessica Albrecht, Jay A. Gottfried, Johan N. Lundstrom

### 31 fMRI and TMS studies of multisensory integration

Michael S Beauchamp

### 32 Odor information processing by the olfactory bulb analyzed in gene-targeted mice

Minmin Luo

### 33 Binaral rivalry and olfactory awareness

Denise Chen

### 34 Evidence of a central gustatory map in humans

Paul A.S. Breslin

## SYMPOSIUM - CHEMORECEPTION IN CONTEXT: INTERACTIONS WITH ENDOCRINE SYSTEMS AND METABOLIC STATE

### 35 Olfactory epithelium, a tissue under metabolic influences

Marie-Christine Lacroix, Karine Badonnel, Nicolas Meunier, Patrice Congar, Aïda Rodriguez-Enfedaque, Flore Renaud, Roland Salesse, Christine Baly, Monique Caillol

### 36 Olfactory neurons activity and olfactory perception are modulated by anorectic peptides, insulin and leptin

Brigitte Palouzier-Paulignan, Agnès Savigner, Pascaline Aimé, Patricia Duchamp-Viret, Michel Chaput, Xavier Grosmaitre, Minghong Ma, A. Karyn Julliard

### 37 The olfactory bulb as a metabolic sensor via insulin modulation

Debra A. Fadool, Kristal Tucker, David R. Marks, Melissa A. Cavallin, James M. Overton, Paola Pedarzani

### 38 Roles of taste signaling molecules in endocrine cells in pancreas and tongue

Zaza Kokrashvili, Peihua Jiang, Bedrich Mosinger, Robert F. Margolskee

### 39 Mechanisms of alimentary chemosensation and modulation

C. Shawn Dotson, Amanda E.T. Elson, Steven D. Munger

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## SYMPOSIUM - WIRING THE OLFACTORY SYSTEMS

### 40 Olfactory Ensheathing Cell Plasticity can be regulated by DNER, a protein highly expressed on Olfactory Receptor Neuron axons

A. Jane I Roskams, Kathryn Westendorf

### 41 Axon - matrix interactions regulate olfactory wiring

Helen B. Treloar, Arundhati Ray, Lu Anne V. Dinglasan, Melitta Schachner, Charles A. Greer

### 42 Faf1 as a Regulator of Olfactory Axon Guidance

Leonardo Belluscio, Kai Cheng

### 43 Reduced Avoidance Response to Predator Odorants Associated with Wiring Defects in the Olfactory System of Robo-2 Mutant Mice

Jean-François Cloutier, Manon Lépine, Tyler Cutforth, Jin H. Cho

## CLINICAL LUNCHEON (Ticketed event) - NEW CLINICAL TRIAL FUNDING OPPORTUNITIES AT NIDCD

### 44 New clinical trial funding opportunities at NIDCD

Gordon Hughes

## SYMPOSIUM - TRANSIENT DYNAMICS, METASTABLE STATES AND TEMPORAL CODING IN CHEMOSENSORY PROCESSING

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Mark Stopfer, Iori Ito, Maxim Bazhenov, Rose C-Y Ong, Baranidharan Raman

### 46 Multiple Roles for STDP in Shaping Olfactory Representations

Stijn Cassenaer

### 47 Timing in olfaction

Dmitry Rinberg, Roman Shusterman, Matt Smear, Thomas Bozza

### 48 Meta-stable states in taste processing

Donald B Katz

### 49 Analyzing neuronal networks using discrete-time dynamics

David Terman, Sungwoo Ahn, Alla Borisyuk, Brian H. Smith

### 50 Lessons from olfactory processing for odor recognition using artificial sensor arrays

Ramon Huerta, Kerem Muezzinoglu, Alex Vergara, Nikolai Rulkov, Mikhail Rabinovich

## PLATFORM PRESENTATIONS - THROUGH THE NOSE

### 51 $CO_2$ Receptor Response Modifying Odors; Novel Tools for Control of Mosquitoes

Stephanie Turner, Nan Li, Ring Carde, Anandasankar Ray

### 52 RNAi-mediated dissection of olfactory behavioral response profiles of odorant binding proteins in Drosophila melanogaster.

Shilpa Swarup, Trudy. F.C. Mackay, Robert. R.H. Anholt

### 53 Calcium imaging of retronasal odor responses in the olfactory bulb (OB) in the anesthetized rat

Shree H. Gautam, Justus V. Verhagen

### 54 Systems Level Decoding of Odor Receptor Chemical Space *In Silico*

Sean M. Boyle, Shane G. McInally, Anandasankar Ray

### 55 The Missense of Smell: Functional Variability in the Human Odorant Receptor Repertoire

Joel D. Mainland, Hiroaki Matsunami

### 56 NCKX4, a calcium regulator, efficiently terminates the olfactory response and moderates the extent of adaptation

Aaron B. Stephan, Steven Tobochnik, Johannes Reisert, Haiqing Zhao

### 57 CAGE MATCH! Effect of Rodent Housing Conditions on Aggressive Behavior and P2 Glomerular Anatomy

Ernesto Salcedo, Anthony Oliva, Jennifer Hellier, Kanthaiah Koka, Daniel Tollin, Xuan Ly, Diego Restrepo

### 58 A Brain-Machine Interface Through the Nose: Wheelchair Driving

Anton Plotkin, Lee Sela, Aharon Weissbrod, Nahum Soroker, Noam Sobel

## POSTER SESSION I: TASTE IMAGING & PSYCHOPHYSICS; CENTRAL TASTE; MULTIPLE MODALITIES; CENTRAL & PERIPHERAL OLFACTION

### 59 Bitter Taste can Induce Nausea

Catherine Peyrot des Gachons, Gary K. Beauchamp, Kenneth L. Koch, Robert M. Stern, Paul A.S. Breslin

### 60 NIH Toolbox: Proposed Assessment of Taste Function and Phenotype

Shristi Rawal, Linda M. Bartoshuk, Susan E. Coldwell, John E. Hayes, Howard J. Hoffman, Katyrna R. Minski, Gregory S. Smutzer, Valerie B. Duffy

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### 61 Effects of BMI on fMRI Activation to a Pleasant Taste During Hedonic Evaluation in Older Adults

Erin R Green, Aaron Jacobson, Lori Haase, Claire Murphy

### 62 Neuroanatomical correlates: psychophysical evaluation of different taste qualities during hunger and satiety

Lori Haase, Barbara Cerf-Ducastel, Erin Green, Aaron Jacobson, Claire Murphy

### 63 Validation of PROP Taste Strips for the NIH Toolbox Initiative

Hetvi Desai, Susan E. Coldwell, James W. Griffith, Lloyd Hastings, Gregory S. Smutzer

### 64 Differences in endogenous bitterness of Rebaudioside A do not appear to impact psychophysical compression of the sweetness power function

Ellen D Mahan, Julie A Peterson, John E Hayes

### 65 Neural Correlates of Self-Initiated Tasting in Humans

Danielle M Douglas, Maria G Veldhuizen, John Buckley, Micheal Fritz, Dana Small

### 66 Valid comparisons of food preferences

Linda M. Bartoshuk, Jaclyn J. Kalva, Lorenzo A. Puentes, Derek J. Snyder, Charles A. Sims

### 67 NIH Toolbox: Proposed Food Liking Survey

Katryna R. Minski, Linda M. Bartoshuk, John E. Hayes, Howard J. Hoffman, Shristi Rawal, Valerie B. Duffy

### 68 Experience with Na-cyclamate induces increased human taste sensitivity for glucose, fructose and maltose, but not for sucrose

Bennett R Collins, Linda L Kennedy, Alison N Le, Mike L Epstein, Julia S Sabin, Afza Safeer, Mike S Zemel, Sumita Chatterjee, Katherine Krevolin, Alexa T Navasero, Elizabeth T Rosen, Sarah Sherpo, Todd P Livdahl, Linda M Kennedy

### 69 Sweet taste intensity is enhanced by temporal fluctuation of odor and taste, and depends on phase shift

Kerstin MM Burseg, Sara M Rodrigues Camacho, Janine Knoop, Johannes HF Bult

### 70 Responses to Different Temporal Patterns of Electrical Stimulation of the Chorda Tympani and Glossopharyngeal Nerves in the Nucleus of the Solitary Tract

Andrew M. Rosen, Patricia M. Di Lorenzo

### 71 Lick-evoked Taste Responses in the Nucleus of the Solitary Tract of Awake Rats

Andre T. Roussin, Jonathan D. Victor, Patricia M. Di Lorenzo

### 72 Somatostatin modulates GABAergic neuron activity in the rostral nucleus of solitary tract (rNST)

Min Wang, Robert M. Bradley

### 73 Receptive Field Mapping of the Oral Cavity in the Rostral Nucleus of the Solitary Tract

James A. Corson, Alev Erisir, David Hill

### 74 Sucrose-best cells in the parabrachial nuclei preferentially project to the nucleus accumbens in the hamster

Cheng-Shu Li

### 75 Parabrachial taste responses to sucrose, fructose and Polycose in the rat

Carolyn E. Pritchett, Peter Kovacs, Andras Hajnal

### 76 The Role of Amygdala-Cortical Cooperation in Taste Processing

Caitlin E Piette, Donald B Katz

### 77 Roles of Gustatory Cortex and Central Amygdala in Processing Taste Concentration

Brian F Sadacca, Donald B Katz

### 78 Influence of the *Soa* Genetic Locus on Responses to Bitter Stimuli in Mouse Central Gustatory Neurons

David M. Wilson, John D. Boughter, Jr., Christian H. Lemon

### 79 Signal Detection Analysis of Oral Sensory Responses to Fat in Mouse Central Gustatory Neurons

Christian H. Lemon, David M. Wilson

### 80 Trigeminal input may compensate for taste loss during flavor perception

Jennifer J. Stamps, Linda M. Bartoshuk

### 81 *The thermal grill illusion*: an investigation comparing responses on the hand and the tongue

Carole Tournier, Claire Boucon, Nelly v-d Meer, Garmt Dijksterhuis

### 82 Flavor Integration of MSG and Citral: Response Time Measurement

Timothy G. Shepard, Maria G. Veldhuizen, Adam Y. Shavit, Lawrence E. Marks

### 83 Gustatory-Olfactory Interactions in Favor Perception?

Adam Y. Shavit, Timothy G. Shepard, Maria G. Veldhuizen, Kelly Burger, Lawrence E. Marks

### 84 Taste-odor interactions: Enhancement of odor or taste?

Danielle J Nachtigal, Barry Green, Samuel Hammond, Juyun Lim

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### 85 The Crucial Role of Familiarity in Cross-modal Enhancement on Lotion Quality Perception

Anne J. Kurtz, Brian Wansink, Terry E. Acree

### 86 Functional and Anatomical Integration of the Chemical Senses: Is there a Flavor Sense?

Johan N Lundstrom, Jessica Albrecht

### 87 Additivity of Brain Activation to Odor and Taste during Judgments of Intensity and Pleasantness

Claire Murphy, Aaron Jacobson, Erin R. Green, Lori Haase

### 88 The nose smells what the eyes see: Modulation of olfactory perception by vision

Jennifer Chen, Wen Zhou, Denise Chen

### 89 Stinking Consciousness!

Benjamin D Young

### 90 Model of dendrodendritic synaptic clustering along mitral cell lateral dendrites

Thomas S. McTavish, Michele Migliore, Michael L. Hines, Gordon M. Shepherd

### 91 The structure of human olfactory space

Alexei Koulakov, Brian Kolterman, Armen Enikolopov, Dmitry Rinberg

### 92 Spatio-temporal dynamics of olfactory processing based on event-related potential source imaging

Thomas Hummel, Agustina Lascano, Silvain J Lacroix, Basile N Landis, Christoph M Michel

### 93 Odorant-Induced BOLD Signal in the Brains of Anosmic Subjects

Sagit Shushan, Yaara Yeshurun, Yehuda Roth, Noam Sobel

### 94 Towards a Consensus Sensory Map of Perfumery Scents Based on Meaningful Psychological Dimensions of Odor Perception

Manuel Zarzo

### 95 Androstenone Suppresses Testosterone Response to Sex Female Pheromones in Mice

Vera V. Voznessenskaya, Maria A. Klyuchnikova

### 96 Androstadienone Modulates Attention-based Reactions in Men

Monika C.M. Frey, Johan N. Lundstrom, Peter Weyers, Andreas Mühlberger

### 97 Melatonin enhances olfactory bulb expression of gap junctions

John T Corthell, Tom D Beardsley, Laura J Blakemore, Paul Q Trombley

### 98 Odors eliciting Fear: a Conditioning Approach to Idiopathic Environmental Intolerance

Patricia Bulsing, Arne Leer, Monique A Smeets, Marcel van den Hout

### 99 Species specific regulation of the olfactory bulb dopaminergic phenotype

Kasturi Banerjee, Shivraj Bhosle, Harriet Baker, John W. Cave

### 100 The olfactory capabilities of mice with long-term unilateral naris occlusion (UNO) and contralateral bulbectomy (bulb-x)

Cathy J Angely, David M Coppola

### 101 Olfactory Performance in Three Transgenic Alzheimer's Disease Mouse Model Strains

Matthew E. Phillips, Hanna K. Osterman, Erik Boman, Hetal K. Patel, David H. Kim, Gordon M. Shepherd, Matthias Laska, David C. Willhite

### 102 GC-D neurons respond to the semiochemical carbon disulfide and mediate the social transmission of food preference

Steven D. Munger, Trese Leinders-Zufall, Lisa Heuvel, Renee E. Cockerham, Andreas Schmid, Petra Wandernoth, Gunther Wennemuth, Martin Biel, Frank Zufall, Kevin R. Kelliher

### 103 Gene Expression in the Olfactory Epithelium of β3GnT2 Mice.

Thomas K Knott, Pasil A Madany, Timothy R Henion, Ashley A Faden, Gary A Schwarting

### 104 Genomic Effects of Unilateral Naris Occlusion (UNO) on the Olfactory Mucosa: A RNA Microarray Approach in Mouse

Chris T Waggener, David M Coppola

### 105 Unilateral smell loss- an early indicator for future global olfactory dysfunction

Volker Gudziol, Irene Paech

### 106 Gene expression and alternative splicing at the peak of proliferation during adult neurogenesis

Paula M Heron, Timothy S McClintock

### 107 OR and V1R Genes share Common Promoter Elements

Bettina Malnic, Jussara S Michaloski, Pedro AF Galante, Maíra H Nagai, Lúcia Armelin-Correa

### 108 The Molecular Components of Anion-Based Signal Amplification in Olfactory Cilia

Thomas Hengl, Hiroshi Kaneko, Kristin Dauner, Kerstin Vocke, Stephan Frings, Frank Moehrlen

### 109 Heterotrimeric G-protein βγ subunits in the Mouse Olfactory Epithelium

Aaron S. Sathyanesan, Adrian Feijoo, Abhinav Parikh, Julie Wolf, Weihong Lin

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## POSTER SESSION II: OLFACTORY PHYSIOLOGY & CELL BIOLOGY; TASTE MOLECULAR GENETICS; CHEMESTHESIS & TRIGEMINAL

### 110 Odor fear conditioning effects on piriform cortical odor processing in awake rats

Chien-Fu F. Chen, Donald A. Wilson

### 111 Physiological Roles of MOB CCKergic Neurons

Shaolin Liu, Michael T. Shipley

### 112 Mitral Cell Responses to Sensory Input Under Tonic Inhibition

Zuoyi Shao, Adam C. Puche, Michael T. Shipley

### 113 Ethanol Reduces Olfactory Bulb Output by Reducing Excitatory Drive to Mitral/Tufted Cells

Feras Jeradeh-Boursoulian, Abdallah Hayar

### 114 Lateral interactions in the in vivo olfactory bulb network of the rat show heterogeneous distance dependences and vary strongly with respect to respiratory phase

Matthew E Phillips, Gordon M Shepherd, David C Willhite

### 115 Effects of Sniffing on the Temporal Structure of Mitral/Tufted Cell Output from the Olfactory Bulb

Ryan M. Carey, Matt Wachowiak

### 116 NMDA Receptors modulate Spontaneous EPSC Bursts of Olfactory Bulb Superficial EPL Interneurons

Kathryn A. Hamilton, Yu-Feng Wang

### 117 Mitral Cell Activity during Odor Discrimination in a Mouse Model of Schizophrenia

Jennifer L. Hellier, Wilder Doucette, Nicole L. Arevalo, Diego Restrepo

### 118 Role of Group I and II Metabotropic Glutamate Receptors in Mouse Main Olfactory Bulb External Tufted Cell Responses to Olfactory Inputs

Wenling Zhang, Hongwei Dong, Qiang Nai, Matthew Ennis

### 119 Recognition and Coding of Social Cues by the Mammalian Grueneberg Ganglion

Andreas Schmid, Martina Pyrski, Martin Biel, Trese Leinders-Zufall, Frank Zufall

### 120 Is the Olfactory Epithelium Tuned to Olfactory Perception?

Hadas Lapid, Sagit Shushan, Anton Plotkin, Yehudah Roth, Noam Sobel

### 121 Chemical determinants of rat olfactory epithelium response

John W Scott, Lisa Sherrill

### 122 Diffusion limitation of cytoplasmic elements within the olfactory cilium

Hiroko Takeuchi, Takashi Kurahashi

### 123 Olfactory xenobiotic metabolizing enzymes have an impact on the stimulating properties of some odorants

Nicolas Thiebaud, Stephanie Veloso Da Silva, Ingrid Jakob, Gilles Sicard, Yves Artur, Jean-Marie Heydel, Anne-Marie Le Bon

### 124 Integrating heterogeneous Odor Response Data into a common Response Model: A DoOR to the Complete Olfactome

C Giovanni Galizia, Daniel Munch, Martin Strauch, Anja Nissler, Shouwen Ma

### 125 The multiple PDZ domain protein 1 (MUPP1) – mediator of the olfactosome?

Sabrina Baumgart, Robert Menzler, Ruth Dooley, Hanns Hatt, Eva Maria Neuhaus

### 126 Splice variants of the $Ca^{2+}$-activated $Cl^-$ channel Anoctamin 2

Samsudeen Ponissery Saidu, Aaron B. Stephan, Sonia M. Caraballo, Haiqing Zhao, Johannes Reisert

### 127 An electroolfactogram (EOG) study of odor response maps from the mouse olfactory mucosa?

David M Coppola, Sarah M Held, David A Brooks, Chris T Waggener

### 128 Neuropeptide Y modulates olfactory mucosa responses to odorant in fasted rat

Patrice Congar, Julia Negroni, Nicolas Meunier, Christine Baly, Roland Salesse, Monique Caillol

### 129 Investigation of Olfactory $CO_2$ Detection in Mice

Jessica K. Kenemuth, Allison J. Hensler, Lee Coates

### 130 ATP Maintains Homeostasis in Olfactory Epithelium in Vivo and in Vitro

Cuihong Jia, Sean Crudgington, Colleen C. Hegg

## P73 POSTER SESSION II: OLFACTORY PHYSIOLOGY & CELL BIOLOGY; TASTE MOLECULAR GENETICS; CHEMESTHESIS & TRIGEMINAL

### 131 Nickel Sulfate Induces Location-Dependent Atrophy of Mouse Olfactory Epithelium: Protective and Proliferative Role of Purinergic Receptor Activation

Colleen C. Hegg, Carlos Roman, Cuihong Jia

### 132 Using a 3-D Culture Model to Identify Factors that Regulate Olfactory Epitheliopoiesis

Woochan Jang, Jesse N. Peterson, Tyler T. Hickman, James E. Schwob

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### 133 Molecular markers of stem and progenitor cells are the same in human olfactory mucosa as in mice and rats

Eric H Holbrook, Enming Wu, James E Schwob

### 134 Glomerular targets of olfactory sensory neurons in adult female mice heterozygous for mutated CNGA2 with TRPM5 knockout background

David A. Dunston, Christy Thai, Weihong Lin

### 135 G protein-dependent activation of PLC and PI3K in mammalian olfactory receptor neurons

Katharina Klasen, Elizabeth A Corey, Daniela Brunert, Kirill Ukhanov, Hanns Hatt, Barry W Ache

### 136 Does Olfactory Marker Protein (OMP) function by interacting at calmodulin (CaM) binding sites?

Hyun J. Kwon, Kristen Varney, Joyce W. Margolis, David J. Weber, Frank L. Margolis

### 137 Isolation and characterization of immature olfactory sensory neurons

Melissa D. Nickell, Timothy S. McClintock

### 138 Gene Expression Profiling of the Olfactory Neurogenic Lineage

Richard C Krolewski, James E Schwob

### 139 Visualizing the Redistribution of Responses within the Rodent Olfactory Receptor Repertoire: Tracking Chemical, Conformational, and Concentration Changes

Zita Peterlin, Yadi Li, Kevin Ryan, Stuart Firestein

### 140 Taste Preferences of the FHH-Chr $n^{BN}$ Consomic Rat Strain Set

Michael G. Tordoff

### 141 Association Between Common Genetic Variation in the G-alpha Gustducin Gene and Human Sucrose Perception

Alexey A. Fushan, Christopher T. Simons, Jay P. Slack, Dennis T. Drayna

### 142 Do TAS1R3 promoter region SNP rs35744813 A allele carriers show a reduced response to concentrated sucrose?

John E Hayes, John E McGeary, Andrea Grenga, Robert M Swift

### 143 Polymorphism in Bitter Taste Receptors of Primates

Hiroo Imai, Nami Suzuki, Tohru Sugawara, Atsushi Matsui, Yasuhiro Go, Hirohisa Hirai

### 144 Community-Based Participatory Research in a Museum Setting

Nicole L Garneau, Jonathan Grudis, Meghan Sloan, Susan Nicholson-Dykstra, Cathy Sheldon, Bridget Coughlin

### 145 Morphological, physiological, and gene expression evidence for a supertasting phenotype in Gust-BDNF mice

Irina V. Nosrat, Shailaja Kishan Rao, Michelle Sims, Akira Ito, Weikuan Gu, Robert Margolskee, Christopher A. Nosrat

### 146 Segregated populations of fish taste bud cells express T2R bitter taste receptor genes in a genomic cluster-dependent manner

Shinji Okada, Shugo Nakamura, Toshitada Nagai, Yoshiro Ishimaru, Ichiro Matsumoto, Takashi Ieki, Takumi Misaka, Keiko Abe

### 147 Changes in the Expression of Taste Receptor Genes in the Rat Circumvallate Papillae Caused by Zinc Deficiency

Minoru Ikeda, Hiroki Sekine, Kyoichi Takao, Shinichiro Kokubun

### 148 Expression of vesicular glutamate transporters 1 in chemically defined cell populations in the rat lingual fungiform papillae

Adeline Braud, Yves Boucher, Fawzia Zerari-Mailly

### 149 Identifying trigeminal stimulants of TRPA1

Paige M Richards, Wayne L Silver

### 150 TRPM5-Expressing Solitary Chemosensory Cells of Mouse Vomeronasal Organ: Regulation of Chemical Access

Kurt Krosnowski, Lana Zhang, Tatsuya Ogura, Weihong Lin

### 151 TRPM5 and ChAT-expressing solitary chemosensory cells of mouse vomeronasal organ: anatomical and functional imaging studies

Tatsuya Ogura, Mikhael Bekkerman, Weihong Lin

### 152 Growth and Differentiation of Solitary Chemosensory Cells in Tracheal Epithelial Culture

C J Saunders, Susan D Reynolds, Thomas E Finger

### 153 Subpopulations of trigeminal ganglion neurons are depolarized by GABA

Nicole Schoebel, Jennifer Spehr, Hanns Hatt

### 154 First and second-order trigeminal sensory neurons respond to two novel cooling componds that modulate lingual thermosensitivity

Christopher T. Simons, Amanda H. Klein, Karen L. Zanotto, Mirela Iodi Carstens, T. Scott McCluskey, Guillaume Blancher, Jay P. Slack, E. Carstens

### 155 Tingle sensation by a sanshool derivative and its effects on primary sensory neurons

Amanda H. Klein, Carolyn M. Sawyer, Margaret A. Ivanov, Susan Cheung, Mirela Iodi Carstens, Christopher T. Simons, Jay Slack, E. Carstens

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### 156 $Ni^{2+}$-Ions directly activate transient receptor potential V1

Matthias Luebbert, Debbie Radtke, Hanns Hatt, Christian H. Wetzel

### 157 Chloride Homeostasis in Trigeminal Sensory Neurons

Debbie Radtke, Nicole Schöbel, Jennifer Spehr, Hanns Hatt

### 158 Pain Processing Networks Revealed Using Fully Exploratory Analysis: An FMRI Study Using Trigeminal Stimulation

Martin Wiesmann, Veronika Schoepf, Christian Windischberger, Christian H Kasess, Jessica Albrecht, Rainer Kopietz, Anna Maria Kleemann, Ewald Moser

### 159 Real-time PCR of trigeminal receptor mRNAs in human nasal biopsies

Jacqueline Zimmermann, Thomas Hummel, Andreas Hermann, Alexander Storch, Sylvia Kanzler, Mandy Scheibe, Martin Witt

## POSTER SESSION III: OLFACTORY PERCEPTION, HUMAN PSYCHOPHYSICS & ANIMAL BEHAVIOR; PERIPHERAL TASTE DEVELOPMENT & SIGNALING

### 160 Determinants of Measured Olfactory Sensitivity: Reprise

William S. Cain, Roland Schmidt, J. Enrique Cometto-Muñiz

### 161 The relationship between nasal cycle and cognitive processing

E. Leslie Cameron, Laura Lipton, Richard L. Doty

### 162 Characterizing the Relationship between Naming and Recognition Memory for Odors and Sounds

Trevor C. Cessna, Melinda S. Brearton, Kathleen M. VanDeGrift, Konstantin A. Rybalsky, Robert A. Frank

### 163 The Effect of Odor Naming Feedback on Odor Naming And Recognition Memory

Robert Frank, Erica Mannea

### 164 Smell and Prejudice: Affect influences on olfactory threshold

Jhoette M Dumlao, Jhanvi Menon, Alan Hirsch, Oliaga Vrilos

### 165 Effects of odor on time perception

Musbah M.M Eghil, Svetlana Yakov, Alan R. Hirsch, Arvinder Kaur, Sally Freels, Marwa F.A Gamra

### 166 Odor-related Affective Feelings: Structure and Inter-individual Variability

Camille Ferdenzi, Annett Schirmer, S. Craig Roberts, Sylvain Delplanque, Isabelle Cayeux, Christelle Porcherot, Maria-Inès Velazco, David Sander, Klaus R. Scherer, Didier Grandjean

### 167 The Effect of Two Ambient Aromas on Human Physiology and Food Choice

Rene A de Wijk, Suzet Zijlstra

### 168 Perfume Masculinity/Femininity Affects Face Gender Judgments

Theresa White

### 169 Olfactory Brown

Tali Weiss, Kobi Snitz, Elad Schneidman, Noam Sobel

### 170 Influence of Odor Pleasantness on Perceived Intensity in Binary Mixtures

Miki Wakamatsu, Yukio Sone, Hisanori Nagata, Hiroki Shikata, Yuichi Furudono

### 171 Long-term reductions of olfactory sensitivity due to short-term intermittent exposures to a peri-threshold odorant

Sarah Ezzell, Jennifer Chen, Wen Zhou, Meng Zhang, Denise Chen

### 172 The relationship between positive odor-evoked memories and product evaluation

Haruko Sugiyama, Akiko Oshida, Paula Thueneman, Susan Littell, Atsushi Katayama, Mitsuyoshi Kashiwagi, Satoshi Hikichi, Rachel S. Herz

### 173 A Compact Multi-functional Olfactometer for fMRI Examinations

Qing X Yang, Weidong Yang, Lucas Ansel, Xiaoyu Sun, Jianli Wang, Christopher W Weitekamp

### 174 Behavioral characteristics when smelling odors and making selections

Shiori Nakano, Saho Ayabe-Kanamura

### 175 Odor Interactions among Ternary Mixtures by Human

Toshio Miyazawa, Michelle Gallagher, George Preti, Shuichi Muranishi, Paul M. Wise

### 176 The Monell Odor Identification Task for the NIH Toolbox: Comparing Response Alternatives for 3 and 4 Year Olds

Christopher Maute, Aleida Silva-Garcia, Sara Castor, Julie A. Mennella, Pamela H. Dalton

### 177 Process differences between physical and physiological odor mixtures

Malin Brodin, Simona Negoias, Mats J Olsson

### 178 Rapid yet short-lived olfactory plasticity in wake and in sleep

Anat Arzi, Noam Sobel

### 179 Effect Of Eye Closure On Olfactory Detection Threshold

Amit K Bhise, Alan R Hirsch, Amal Asiri

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### 180 Newly Discovered Specific Anosmias

Charles J. Wysocki, Jennifer Louie, Lisa Oriolo, Angelica Au, Edward Strojan, Makoto Emura, Michael Lankin

### 181 Early Odor Learning in Tree Swallows (*Tachycineta bicolor*)

Meredyth P. Duncan, Ashley A. Miniet, Julie C. Hagelin

### 182 Exploring the Olfactory Ability of the Kea (*Nestor notabilis*), an Endangered Parrot from New Zealand

Kimberly F. Kramer, Regina L. Kukola, Christine Q. Ernst, Julie C. Hagelin

### 183 Songbird Chemosignaling: Differentiation and Detection of Volatile Compounds by Dark-eyed Juncos

Danielle J Whittaker, Helena A Soini, Jonathan W Atwell, Allison Miller, Amanda L Posto, Milos V Novotny, Ellen D Ketterson

### 184 Impact of Complexity on the Processing of Odour Mixture in Newborn Rabbits

Charlotte Sinding, Thierry Thomas-Danguin, Benoist Schaal, Gérard Coureaud

### 185 Developmental and Odor-induced Changes in Odorant Receptor mRNA Expression During Olfactory Imprinting and Homing in Pacific Salmon, *Oncorhynchus spp*

Andrew H. Dittman, Darran May, Michelle A. Havey

### 186 Comparative study of the response of *Aedes aegypti* and *Culex quinquefasciatus* to host odor cues

Shahid Majeed, Sharon R Hill, Göran Birgersson, Rickard Ignell

### 187 Influence of complex learning contexts on olfactory discrimination abilities and bulbar network

Mélissa Moreno, Joelle Sacquet, Anne Didier, Nathalie Mandairon

### 188 Alteration of the scent of age by the xenobiotic citronellal ingestion

Kazumi Osada, Masaaki Hanawa, Kenji Tsunoda, Hiroshi Izumi

### 189 Lesions of the Medial Amygdala Impair Lordosis And Olfactory Responses to Urinary Volatiles in Female Mice

Brett DiBenedictis, Katie Ingraham, Michael J Baum, James A Cherry

### 190 Butylated hydroxytoluene is a ligand of urinary proteins of female mice

Jae Kwak, Adam Faranda, Maryanne Opiekun, George Preti, Kazumi Osada, Kunio Yamazaki, Gary Beauchamp

### 191 The role of the neurotrophin receptor, TrkB, in taste system development

Da Fei, Robin F. Krimm

### 192 Replacement of BDNF by NT4 rescues gustatory neuron targeting but not taste bud number in the tongue

Tao Huang, Robin F Krimm

### 193 Involvement of Wnt/β-catenin signaling in the renewal of mature taste bud of mice

Dany Gaillard, Jason Nealy, Sarah E Millar, Fei Liu, Linda A Barlow

### 194 Wnt/β-catenin Signaling within Taste Bud Progenitor Cells Impacts Both Taste bud and Taste Papilla Development

Shoba Thirumangalathu, Linda A. Barlow

### 195 Adult Mice with Genetic Deletion of SHH in Tongue Epithelium Have Fungiform Taste Buds and Papillae with Aberrant Morphology

Elizabeth A. Harvey, Linda A. Barlow

### 196 Gli Transcriptional Activity in Hedgehog Signaling Regulates Tongue Epithelial Integrity and Postnatal Papilla and Taste Bud Support

Hong-Xiang Liu, Marina Grachtchouk, Andrzej A. Dlugosz, Charlotte M. Mistretta

### 197 Peripheral taste system morphology in taster and non-taster mice

W. Wes Shelton, Akira Ito, Irina V. Nosrat, Christopher A. Nosrat

### 198 Mosaic Analysis with Double Markers (MADM) as a method to map cell fates in adult mouse taste buds

Preston D. Moore, Jarrod D. Sword, Dennis M. Defoe, Theresa A. Harrison

### 199 Oxytocin Receptor Is Expressed In A Subset Of Glial-like Cells In Mouse Taste Buds

Isabel Perea-Martinez, Michael Sinclair, Gennady Dvoryanchikov, Nirupa Chaudhari

### 200 Glutamatergic and Catecholaminergic Markers are Present in Fibers Innervating Mouse Taste Buds

Elizabeth Pereira, Jeff A. Grant, Yijen A. Huang, Xinzhong Dong, Stephen D. Roper

### 201 Orally Administered Capsaicin Reduces Taste Bud Volumes in Rats Treated as Adults, but Not Those Treated as Neonates

Kaeli K. Samson, Suzanne I. Sollars

### 202 Lipopolysaccharide-Induced Inflammation Attenuates Taste Progenitor Cell Proliferation and Taste Bud Cell Renewal

Zachary J Cohn, Agnes Kim, Liquan Huang, Joseph Brand, Hong Wang

### 203 Distinct GABA synthesizing enzymes and GABA receptors in each cell type of mouse taste buds

Gennady Dvoryanchikov, Nirupa Chaudhari

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### 204 Expression patterns of adrenergic receptors in rat posterior taste buds

Yuan Zhang, Tamara Kolli, Fang-li Zhao, Jianqun Yan, Scott Herness

### 205 Serotonin acts to facilitate tastant responses in the rat chorda tympani nerve

Luc Jaber, Fang-li Zhao, Scott Herness

### 206 Paroxetine, a selective serotonin reuptake inhibitor, does not alter concentration-dependent licking of prototypical taste stimuli by rats

Clare M Mathes, Alan C Spector

### 207 Activation of Synaptic Glutamate Receptors Stimulates Mouse Taste Cells and Induces Serotonin Release

Jeff A. Grant, Stephen D. Roper

### 208 The amiloride-insensitive component of the chorda tympani response to NaCl is larger in A/J than in C57BL/6J mice

Stuart A McCaughey, Chandra M Cherukuri, Alexander A Bachmanov

### 209 Differential regulation of chorda tympani (CT) taste nerve responses to sweet, salty, bitter and umami taste stimuli by phosphatidylinositol 4, 5-bisphosphate ($PIP_2$)

Vijay Lyall, Tam-Hao T Phan, Shobha Mummalaneni, Melone Pamela, John A. DeSimone

### 210 PKD2L1 is required for normal chorda tympani nerve responses to acids

Nao Horio, Ryusuke Yoshida, Yoshiro Ishimaru, Hiroaki Matsunami, Yuzo Ninomiya

### 211 Comparative analysis of ENaC and TRPV1-mediated NaCl responses of the rat chorda tympani nerve

Joanne M Garcia, Robert J Contreras

### 212 Anion Size Attenuates Summated Epithelial Potentials of Tongue and Single-cell Responses of Geniculate Ganglion Neurons to TRPV1-mediated Salt Stimulation in Rats

Joseph M Breza, Joanne M Garcia, Robert J Contreras

## POSTER SESSION IV: CHEMOSENSORY TRANSDUCTION AND SIGNALING

### 213 Estrogen Modulates Excitability and Olfactory Responses in Mouse Vomeronasal Neurons

Suraj Cherian, Ian McDaniels, Chun Yang, Rona J. Delay

### 214 Variation in vomeronasal receptor expression in a terrestrial salamander

Sarah K. Woodley, Karen M. Kiemnec-Tyburczy, Lynne D. Houck

### 215 Molecular characterization and localization of olfactory-specific ionotropic glutamate receptors in lobster olfactory receptor neurons

Elizabeth A Corey, Yuriy Bobkov, Barry W Ache

### 216 Measuring Ensemble Activity in Lobster ORNs through Calcium Imaging

Yuriy V. Bobkov, Kirill Y. Ukhanov, Ill Park, Jose C. Principe, Barry W. Ache

### 217 Ca Imaging of Response Properties of Olfactory Receptor Neurons of Spiny Lobsters, *Panulirus argus*

Manfred Schmidt, Tizeta Tadesse, Charles D Derby

### 218 Evolution of haematophagy: what one moth species can teach us

Sharon R. Hill, Jennifer Zaspel, Bill S. Hansson, Susan Weller, Rickard Ignell

### 219 Sex Pheromone Receptor Specificity in the European Corn Borer Moth, Ostrinia nubilalis

Kevin W Wanner, Andrew S Nichols, Jean E Allen, Peggy L Bunger, Stephen F Garczynski, Charles E Linn, Hugh M Robertson, Charles W Luetje

### 220 Molecular characterization of accessory proteins mediating sexual selection in two *Ostrinia* species

Jean E. Allen, Kevin W. Wanner

### 221 Behavioral and Olfactory Consequences of Slipping Imaginal Discs Between Two Moth Species

Seong-Gyu Lee, Kathy R. Poole, Charles E. Linn, Jr., Neil J. Vickers

### 222 Modulation of pheromone responses by cyclic nucleotides and DAG in antennal trichoid sensilla of the hawkmoth *Manduca sexta*

Andreas Nolte, Christian Flecke, Monika Stengl

### 223 Subunit Contributions to Insect Olfactory Receptor Function

Andrew S. Nichols, Charles W. Luetje

### 224 Enzymatic conversion of odorants in nasal mucus affects olfactory glomerular activation patterns and odor perception

Ayumi Nagashima, Kazushige Touhara

### 225 PI3K-dependent Inhibitory Signaling in Mammalian Olfactory Receptor Neurons

Kirill Ukhanov, Daniela Brunert, Barry W. Ache

### 226 Functional implication of PI3K beta and gamma in rodent olfaction

Daniela Brunert, Katharina Klasen, Elizabeth A. Corey, Kirill Ukhanov, Barry W. Ache

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### 227 Regulation of Sodium Calcium Exchanger (NCX) Activity by Calmodulin or Omp in the Olfactory Signaling Transduction Cascade

Manoj Tyagi, Frank L Margolis

### 228 Inhibition or Loss of Plasma Membrane Calcium ATPases Prolongs Desensitization In Mouse Olfactory Sensory Neurons

Judith Van Houten, Samsudeen Ponissery Saidu

### 229 Exogenous Odorant Receptor Suppresses Endogenous Receptor Expression in Cultured Olfactory Sensory Neurons

Huaiyang Chen, Qizhi Gong

### 230 Heterologous Expression of Mouse Pheromone Receptors Identifies Cognate Ligands

Sandeepa Dey, Hiroaki Matsunami

### 231 Muscarinic Receptor M3 Potentiates the Function of a Broad Range of Mammalian Odorant Receptors

Yun R. Li, Hiroaki Matsunami

### 232 The OR37 subfamily: establishment of the clustered expression pattern

Jörg Strotmann, Andrea Bader, Verena Bautze, Desirée Haid, Heinz Breer

### 233 Expression of odorant receptor genes on the olfactory epithelium following olfactory nerve transection

yongxiang wei, yuehong liu, ling yang, xutao miao, yayan lu, xiaochao liu

### 234 Olfactory Detection of Aldehydes: Comparison of Dose-Response Functions at the Behavioral and at the Cell/Receptor Levels

J. Enrique Cometto-Muniz, Michael H. Abraham

### 235 Retronasal but Not Oral-Cavity-Only Identifications of Isointense TRPM8 Agonists

Tiffany Y. Li, Jay K. Shah, Bruce P. Halpern

### 236 Characterization of $Ca^{2+}$ currents in identified subpopulations of rat geniculate ganglion neurons

Shiro Nakamura, Robert M. Bradley

### 237 Temperature Alters Summated Epithelial Potentials of Tongue and Single-Cell Responses of Geniculate Ganglion Neurons to Chemical Stimulation in Rats

Alexandre A. Nikonov, Robert J. Contreras

### 238 Primate Sweet taste is caused by impulses in a dedicated group of taste fibers

Tiffany Cragin, Göran Hellekant

### 239 Taste-location generalization as a novel tool to study rodent taste and flavor perception

Justus V. Verhagen, John Buckley, Michael Fritz, Ron Goodman, Tom D'Alessandro, Shree H. Gautam

### 240 Behavioral and anatomical characterization of sucralose preferring and avoiding rats

Gregory C Loney, Ann Marie Torregrossa, Lisa A Eckel

### 241 Natural Variation in Sucralose Drinking Patterns in Rats

Ann-Marie M. Torregrossa, Gregory C. Loney, James C. Smith, Lisa A. Eckel

### 242 Experience induced changes in sugar taste sensitivity take place in or before the sugar taste receptor cell of Drosophila melanogaster

Kristina M. Gonzalez, Gregory C.H. Chua, Marie-J. Sellier, Todd P. Livdahl, Frederick Marion-Poll, Linda M. Kennedy

### 243 Taste aversion to quinine in mosquitoes

Jae Kwak, Natasha Rivers, Paul A S Breslin

### 244 Plant Root Exudates as Chemoattractants for *Paramecium*

Wade E. Bell, Megan Strand, Anne B. Alerding

### 245 Sensory mechanisms of chemical deterrence by sea hare ink against predatory blue crabs

Juan F. Aggio, Charles D. Derby

### 246 The Taste of Salicin in Hamsters

Nicole H Strobel, Marion E Frank, Thomas P Hettinger, Bradley K Formaker

### 247 Is there More than Bitter to the Taste of Salicin in Hamsters?

Liangfang Zhao, Marion E Frank, Thomas P Hettinger, Bradley K Formaker

### 248 Perceptual Mapping of Cooling Ingredients – The Role of Ethnic, Biological and Product-Use Variables

Beverly J Tepper, Yvonne Koelliker, Jennifer Mei, Carter Green

### 249 Both Warming and Cooling Enhance the Bite of Carbonation

Paul M Wise, Bruce Bryant

### 250 Expression, Solubilization, Purification and Reconstitution of the Human Epithelial Sodium Channel Involved with Salty Taste

Jesusa S. Josue, Yuri Kaulin, Joseph G. Brand

### 251 Taste-evoked chorda tympani responses to $CaCl_2$ are larger in PWD/PhJ than in C57BL/6J mice.

Chandra M Cherukuri, Stuart A McCaughey, Michael G Tordoff

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### 252 Calcium sensing receptor agonists induce response in taste cells

Yutaka Maruyama, Reiko Yasuda, Motonaka Kuroda, Yuzuru Eto

### 253 Expression and characterization of ligand-binding domain of T1R1 taste receptor

Maud Sigoillot, Elodie Maîtrepierre, Loïc Briand

### 254 The interaction between PKD1L3 and PKD2L1 through their transmembrane domains is required for localization of PKD2L1 protein at taste pore in taste cells of circumvallate and foliate papillae

Yoshiro Ishimaru, Yuka Katano, Kurumi Yamamoto, Masato Akiba, Richard W. Roberts, Tomiko Asakura, Hiroaki Matsunami, Keiko Abe

### 255 Residual Glucose Taste in T1R3 Knockout but not TRPM5 Knockout Mice

Steven Zukerman, Robert F. Margolskee, Anthony Sclafani

### 256 Herbicides and Antilipid Drugs Block Human T1R3 Receptors

Bedrich Mosinger, Zaza Kokrashvili, Robert F Margolskee, Emeline L Maillet

### 257 Allosteric regulation of taste chemosensors: insights from molecular modeling and docking

Wely B. Floriano, Desiree Daniels, Chloe Thai

### 258 Direct NMR measurement of ligand binding to the human sweet taste receptor domains

Rani Parvathy, Outhiriaradjou Benard, Mike Goran, John L. Markley, Marianna Max, Fariba Assadi-Porter

### 259 Suppressing effect of cyclodextrin to taste modifiers

Keisuke Sanematsu, Seiji Nakamura, Yuzo Ninomiya

### 260 Characterizing the interaction of miraculin, a taste-modifying protein, with human sweet taste receptor

Ayako Koizumi, Asami Tsuchiya, Ken-ichiro Nakajima, Keisuke Ito, Tomiko Asakura, Keiko Abe, Takumi Misaka

### 261 Structural role of the terminal disulfide bond in the sweetness of brazzein

Sannali M. Dittli, Hongyu Rao, Emeline Maillet, Marianna Max, John Markley, Fariba Assadi-Porter

### 262 Expression of GABA receptor subunits and $Cl^-$ transporters of taste buds in mice

Toshiaki Yasuo, Ryusuke Yoshida, Noriatsu Shigemura, Robert F. Margolskee, Yuzo Ninomiya

### 263 GABA Inhibition in Mouse Taste Buds

Yijen A. Huang, Stephen D. Roper

### 264 Intracellular $Ca^{2+}$ and TRPM5-mediated membrane depolarization are required for taste cells to secrete ATP

Yijen A. Huang, Stephen D. Roper

### 265 Pannexin-1 and Connexin-43 Immunoreactivity in Rodent Taste Buds

Ruibiao Yang, Amanda Bond, Stacey Thomas, John Kinnamon

### 266 Potential modulatory effects of serotonin in taste receptor cell excitability

Fang-li Zhao, Scott Herness

## POSTER SESSION V: CENTRAL OLFACTION; CHEMOSENSORY PSYCHOPHYSICS & CLINICAL STUDIES

### 267 Co-stimulation with an olfactory stimulus enhances arousal responses to trigeminal stimulation during sleep in humans

Boris A. Stuck, Franziska Lenz, Jann Baja, Clemens Heiser

### 268 Odor fear conditioning and olfactory system slow-wave sleep

Dylan C. Barnes, Julie Chapuis, Donald A. Wilson

### 269 A neural pathway underlying dynamic control of odor-induced responses to a wide range of odor concentrations

Hong Lei, Hong-Yan Chiu, John G. Hildebrand

### 270 Transformation of olfactory information by neural networks in the honey bee 'olfactory cortex'

Martin F Strube-Bloss, Marco A Herrera-Valdez, Brian H Smith

### 271 An Ih-dependent Switch from Inhibition to Excitation in ET Cells by Co-release of GABA and DA from SA Cells

Zuoyi Shao, Shaolin Liu, Adam C. Puche, Michael T. Shipley

### 272 Olfactory-visual integration facilitates perceptual discrimination of facial expressions

Emily Cahill, Lucas Novak, Wen Li

### 273 Characterization of somatostatin systems in the mouse olfactory bulb

Cécile Viollet, Gabriel Lepousez, Aurélie Mouret, Catherine Loudes, Jacques Epelbaum

### 274 Glutamate modulates inhibitory inputs of GABAergic interneurons in the superficial EPL of the main olfactory bulb

Yu-Feng Wang, Kathryn A Hamilton

### 275 Ion Channel in the Olfactory Bulb Subserves as a Metabolic Sensor

Kristal R. Tucker, Melissa Cavallin, J. Michael Overton, Debra A. Fadool

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### 276 The Expression Pattern of TrpM5 and NT-3 in the Ventral Main Olfactory Bulb of Mice Reveals Two Distinct Populations of Glomeruli

Shane H Rolen, Thomas E Finger, Diego Restrepo

### 277 Expression and function of Rap1gap2 in the developing olfactory system

Benjamin A Sadrian, Qizhi Gong

### 278 Dishevelled-1 in mouse olfactory system development

Diego J Rodriguez-Gil, Wilbur Hu, Charles A Greer

### 279 MMP-2 expression in the olfactory bulb is associated with neuronal reinnervation

Stephen R Bakos, Richard M Costanzo

### 280 In Vivo Expression of Osterix in Mouse Olfactory Bulb

Jung-Eun Kim, Ji-Soo Park

### 281 Calbindin, Parvalbumin and Calretinin Immunoreactivity in the Medial Amygdala of Male Hamsters

Lindsey M Silz, Michael Meredith

### 282 Sexually Relevant Olfactory Stimuli Activate the Medial Preoptic Nucleus in an Age-Dependent Manner

Daniel J Tobiansky, Juan M Dominguez

### 283 Anatomical and Molecular Characterization of Centrifugal Cells Within the Olfactory Cortex

Andrew N. Young, Qian-Quan Sun

### 284 Reversible Partial Deafferentation of the Zebrafish Olfactory Bulb with Repeated Detergent Application

Taylor R. Paskin, Tania R. Iqbal, Christine A. Byrd-Jacobs

### 285 Hemi-bulb Organization in the Elasmobranch Brain

Tricia L Meredith, Anne Hansen

### 286 Lateral Connections in the Olfactory Bulb: a Transsynaptic Tracing Study

David H. Kim, Andrew Y. Chang, Gordon M. Shepherd, David C. Willhite

### 287 How stable are olfactory bulb structures in color mutations of *Neovison vison*?

Willi Bennegger, Elke Weiler

### 288 Effect of odor exposure on glomerular size in the mouse olfactory bulb

Nicolas Busquet, Josephine Todrank, Giora Heth, Diego Restrepo

### 289 An Axis-Based Olfactory Neural Code that Predicts Behavior and Perception

Rafi Haddad, Elad Schneidman, Noam Sobel

### 290 Postnatal Development in Piriform Cortex

Amy A Sarma, Marion B Richard, Charles A Greer

### 291 Oxytocin and vasopressin in the medial amygdala modulate approach/avoidance responses to chemosignals associated with health condition in male rats

Hiroyuki Arakawa, Keiko Arakawa, Stephanie Cruz, Terrence Deak

### 292 A clinical test of gustatory function including umami taste

Christian A Mueller, Karin Pintscher, Bertold Renner

### 293 Individual differences in human umami taste perception

P. Bano Singh, Benno Schuster, Han-Seok Seo

### 294 Coding Mixture Components in Sucrose-Nacl Mixtures

Marion E. Frank, Holly F. Goyert, Thomas P. Hettinger

### 295 Monell Sucrose Preference Tracking Method: New Findings and Applications

Julie A. Mennella, James W. Griffith, Laura D. Lukasewycz, Gary K. Beauchamp, Susan E. Coldwell

### 296 Individual Differences in Salivary Amylase and the Perception of Oral Viscosity from Starch

Abigail L. Mandel, Catherine Peyrot des Gachons, Kimberly L. Plank, Suzie M. Alarcon, Paul A.S. Breslin

### 297 The Detection of Free Fatty Acids in Edible Taste Strips

Melissa Tiyouh, M. Hakan Ozdener, Sahbina A. Ebba, Gregory S. Smutzer

### 298 The Relative Satiety Value of Candy Bars in American Children

Michele Soto, Jack Hirsch, Alan Hirsch

### 299 Measuring referral of retronasal odors: The effect of taste

Barry Green, Karen Blacher, Danielle Nachtigal

### 300 A Modest Influence of Response Bias on the Enhancement of Taste-Like Properties of Odors

Sarah Nolan-Poupart, Barry Green, Maria G. Veldhuizen, Jessica Blanton, Dana M. Small

### 301 Not all Formulas are Alike: Differential Growth Patterns among Infants Fed Protein Hydrolysate or Cow Milk-Based Formulas

Alison K. Ventura, Laura D. Lukasewycz, Sara M. Castor, Gary K. Beauchamp, Julie A. Mennella

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### 302 Evaluation of Newborns' Movement by Image Segmentation while They Drink an Infant Formula

Rosa G. Herrera-Lee, Homero V. Rios-Figueroa, Jesus O. Angulo-Guerrero, Julie A. Mennella, Iñigo Verdalet-Guzman, Takuo Nakano, Lech Ozimek, Eryck R. Silva-Hernandez

### 303 Factors Influencing Mothers' Perceptions of their Infants' Liking of a Green Vegetable

Catherine A. Forestell, Julie A. Mennella

### 304 A study examining the incidence of taste disorders in the general population

Antje Welge-Luessen, Patrick Doerig, Franziska Krone, Markus Wolfensberger

### 305 Effects of aging on the injured peripheral taste system

Lynnette P McCluskey, Arkadiy Yadgarov, Lianying He

### 306 Cigarette Smoking, Obesity and Fat Perception in Women

M. Yanina Pepino, Susana Finkbeiner, Julie A. Mennella

### 307 Chemosensory Loss: Functional Consequences of the World Trade Center Disaster

Pamela H. Dalton, Richard E. Opiekun, Tamika Wilson, Christopher Maute, Mehmet H. Ozdener, Kai Zhao, Edward Emmett, Peter S.J. Lees, Robin Herbert, Jacqueline Moline

### 308 "Gender and Burning Mouth Syndrome"

Svetlana Yakov, Yuri L. Yakov, Alan R. Hirsch, Sally Freels

### 309 Surgery for Mucosal Contact-Point Headache

Woo Yong Bae, William S. Cain, Jae Hoon Lee, Tae Joo Ahn

### 310 Pharyngeal insensitivity in patients with obstructive sleep apnea compared to healthy subjects

Clemens Heiser, Ingo Zimmermann, Karl Hörmann, Boris A. Stuck

### 311 Intensity of Salt Taste and Hypertension

Mary E. Fischer, Karen J. Cruickshanks, Alex Pinto, Barbara E. K. Klein, Ronald Klein, F. Javier Nieto, James S. Pankow, Derek J. Snyder

### 312 Development of an Electronic Tongue (ET) to Evaluate the Bitterness Intensity of Rx and OTC Formulations

Marie O. Richardson, Lisa A. Glover, Phil B. Stern, David Clapham, Ken A. Saunders, Andrey. Legin, Evgeny. Legin, Dmitry . Kirsanov, Alisa. Rudnitskaya, Boris. Seleznev

### 313 GLMS for Ratings of Taste Intensity by the Elderly: Ready for the Toolbox?

Marcia L. Pelchat, Gina M. Carfagno, Susan E. Coldwell

### 314 How Does Context Affect Taste Intensity?

Lawrence E Marks, Timothy G. Shepard, Adam Y. Shavit, Maria G. Veldhuizen

### 315 Taste Perception and Sensitivity to Emotional Disgust

Rachel S. Herz

### 316 Effects of Taste Responsiveness on the Hedonic Reactivity to Sweetness and Bitterness

Juyun Lim, Alison Wood

## POSTER SESSION VI: PERIPHERAL AND CENTRAL TASTE; PERIPHERAL OLFACTION

### 317 Individual Predictors of Oral Free Fatty Acid Detection and Triacylglycerol Response

Richard D Mattes

### 318 Measurement of fat perception and electrophysiological assessment of taste function in patients with anterior lingual hemiageusia

Viola Engelhardt, Thomas Hummel, Nicole Schöbel, Hanns Hatt, Basile Landis

### 319 Bitter Taste Receptor Signaling in the Gut Stimulates ABCB1 through a Paracrine Mechanism Involving CCK/Gastrin and its Receptor

Tae-Il Jeon, Young-Kyo Seo, Timothy F Osborne

### 320 TRPM5 is required for fatty acid transduction in mouse taste cells

Timothy A Gilbertson, Pin Liu, Robert F Margolskee

### 321 Dietary Modulation of the Fatty Acid Transduction Pathway

Dane R. Hansen, Heather Curtis, Timothy A. Gilbertson

### 322 Glossopharyngeal nerve transection eliminates preference for a corn oil emulsion but does not decrease high-fat diet intake or the associated acceleration of body weight gain in rats

Ginger D. Blonde, Alan C. Spector

### 323 Insect Olfaction and the Electrostatic Effect

Thomas M. Dykstra

### 324 Preference of the Fatty Acids Linoleate and Oleate during Long-Term 2-Bottle Tests

David W Pittman, Harry B Quedenfeld, Chelsea A Nill

### 325 Conditioned aversion to a novel taste infused directly into the mouse gut may be attributed to reflux into the oral cavity

Glen J. Golden, Amanda Hussey, Eleanora Robinson, Caroline Robiolle, Bruce A. Kimball

### 326 Structural Modeling of the Putative Fat Taste Receptor, CD36

D. Eric Walters

### 327 Does taste determine daily intake of dilute concentrations of glucose and fructose in C57BL/6 mice?

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John I Glendinning, Frans Beltran, Laura Benton, Sabrina Cheng, Jennifer Gillman, Heather N Spain

### 328 Glucose utilization supports preferences for sugars in mice

Xueying Ren, Jozelia G Ferreira, Sara J Shammah-Lagnado, Catherine W Yeckel, Ivan E de Araujo

### 329 Oxytocin Enhances Brief-Access Taste Preference for Sweet and Umami Stimuli

Michael S. Sinclair, Steven J. St. John, Nirupa Chaudhari

### 330 Generalization of conditioned taste aversion (CTA) to guanosine 5′-monophosphate (GMP) in C57BL/6 mice

Yuko Murata, Alexander A. Bachmanov

### 331 Cyclophosphamide Effects on Umami Taste of Mice

Nabanita Mukherjee, Eugene R Delay

### 332 Anatomical dissociation of melanocortin receptor agonist influences on taste- and gut-sensitive feeding processes

John-Paul Baird, Michael LaRiviere, Pallabi Guha, Mariana Palacios, Christopher Lim, Eduardo Matute, Julia Lord, Lindsay Grigg

### 333 Diminished Fat Preference in Preprodynorphin KO Mice

Sharif A. Taha, Jennifer A. Heckmann, Bilal Shahid, Lara Kapp

### 334 The Chorda Tympani Carries Two Anatomically Distinct Inputs to Rostro-Central Subdivision and to Rostro-Lateral and Ventral Regions of the NTS

Alev Erisir, James Corson

### 335 Chorda tympani nerve injury initiates a microglial response in the nucleus of the solitary tract (nTS)

Dianna L. Bartel, Thomas E. Finger

### 336 NaCl- induced c-fos expression in the nucleus of the solitary tract of mice that lack P2X receptor subunits necessary for taste transmission

Jennifer M Stratford, Thomas E Finger

### 337 Overexpression of BDNF in the Lingual Epithelium Alters Terminal Field Organization in the Mouse NTS

Chengsan Sun, David L. Hill

### 338 Development of intrinsic properties of rostral nucleus of solitary tract (rNST) neurons in embryonic and postnatal rats

Takeshi Suwabe, Catherine E. Krull, Charlotte M. Mistretta, Robert M. Bradley

### 339 Brainstem Sites Underlying Sucrose-Induced Analgesia in Neonatal Rats

Yi-Hong Zhang, Matthew Ennis

### 340 Brainstem convergence of efferents from the gustatory and visceral regions of the rat solitary nucleus

Susan P. Travers, Joseph B. Travers

### 341 Mapping the tongue onto the brainstem

Dustin M Graham, David L Hill

### 342 Competitive Changes in CT Terminal Field Morphology and Taste-Related Behaviors Following GSP and IX Nerve Section

Sara L Dudgeon, David L Hill

### 343 Analysis of functional and anatomical relationships between trigeminal inferior alveolar afferents and gustatory neurons within the nucleus of the solitary tract

Yves Boucher, Fawzia Zerari, Adeline Braud

### 344 Repeated Peripheral Nerve Injury Leads to Enhanced Growth of Terminal Fields in the Nucleus of the Solitary Tract of Adult Rat

Rebecca Reddaway, David L. Hill

### 345 Amino acid taste-evoked activity in the parabrachial nucleus of mice

John D Boughter, Kenichi Tokita

### 346 Quantification of c-Fos in the PBN reveals that visceral response does not play a role in strain differences observed in conditioned taste aversion between C57BL/6J and DBA/2J mice

April R. Glatt, Kenichi Tokita, John D. Boughter, Jr.

### 347 An Analysis of Spike Timing in Parabrachial Gustatory Neurons

Laura C. Geran, Susan P. Travers

### 348 Spatial differences in molecular characteristics of the pontine parabrachial nucleus

Naohiro Maeda, Mayuko Onimura, Makoto Ohmoto, Tadashi Inui, Takashi Yamamoto, Ichiro Matsumoto, Keiko Abe

### 349 The anterior insula drives the insula-opercular taste network during sensation of sweet taste

Maria G Veldhuizen, Darren Gitelman, Dana M Small

### 350 Central Amygdala Stimulation Activates Neurons in the Gustatory Brainstem and Increases the Number of Taste Reactivity Behaviors in Conscious Rats

Michael S. King, Paige Angelson, Joshua Hargrove, Matthew Clayman

### 351 Effects of expectation on gustatory processing and multi-area interactions

Matthew P.H. Gardner, Chad Samuelsen, Maolong Cui, Jozsef Fiser, Alfredo Fontanini

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### 352 Interaction Between Top-down and Bottom-up Synaptic Potentials in the Insular Cortex of Anesthetized Rats

Martha E Stone, Arianna Maffei, Alfredo Fontanini

### 353 Parametric evaluation of the time course of PKMzeta inhibitor effectiveness

Yaihara Fortis-Santiago, Joshua Figueroa, Emma Reid, Donald B. Katz

### 354 Umami and Saltiness: do they play with the same rules in the match of tastes? – an fMRI study

Emilia Iannilli, Bano Singh, Benno Schuster, Johannes Gerber, Basile N. Landis

### 355 Electrical neuroimaging of gustatory perception in humans

Kathrin Ohla, Julie Hudry, Johannes le Coutre

### 356 Multiple Neuronal Subpopulations emerge from the Olfactory Placode During Development

Alexandra M. Miller, Lydia R. Maurer, Charles A. Greer

### 357 Development of a Mouse Embryonic Stem Cell Model for Neurogenesis and Localization of RARa and RARg in these Cells.

FaMitah Q. Buchanan, Elvin A. Woodruff III, Cecile Rochette-Egly, Mary Ann Asson-Batres

### 358 Genetic Manipulation of Sox2 in the Adult Olfactory Epithelium During Lesion-Induced Regeneration

Adam I. Packard, James E. Schwob

### 359 The Transcription Factor p63 is Required for the Differentiation of Horizontal Basal Cells During Development

Nikolai Schnittke, Adam Packard, James E Schwob

### 360 IFT88 Regulates Olfactory Cilia Maintenance and Function

Jeremy C. McIntyre, Paul M. Jenkins, Dyke P. McEwen, Jeffrey R. Martens

### 361 Fasciculation of Molecularly Defined Subsets of Axons in the Developing Olfactory Nerve Pathway

Lydia R. Maurer, Alexandra M. Miller, Charles A. Greer

### 362 Bridging Multiple Time-Scales in the Signal Transduction of the Mouse Olfactory Receptor Neuron

Daniel P. Dougherty

### 363 A neural code for binary odorant mixture interactions in the nose

Ginny E Cruz, Graeme Lowe

### 364 Influence of the chemical structure on odor intensity and odor character of halogenated and methylated phenols

Andrea Strube, Andrea Buettner

### 365 The first quantitative model of the nasal aerodynamics in mouse

Jianbo Jiang, Yuehao Luo, Michael Dishowitz, Alexander C Wright, Kai Zhao

### 366 Implicit modulation of preferences for odors by explicit choices in long-term memory

Géraldine Coppin, Sylvain Delplanque, Charlène Fournier, David Sander

### 367 The eyes see what the nose smells: Olfactory modulation of visual perception in binocular rivalry

Wen Zhou, Yi Jiang, Sheng He, Denise Chen

### 368 Virus-infected female mice attract male mice through pheromone up-regulation.

Koichi Matsumura, Maryanne Opiekun, Takuya Tashiro, Kenji Mori, Kunio Yamazaki, Gary K. Beauchamp

### 369 Human Male Superiority in Olfactory Sensitivity to the Sperm-Attractant Odorant Bourgeonal

Peter Olsson, Matthias Laska

## POSTER SESSION VII: OLFACTORY PSYCHOPHYSICS & CLINICAL STUDIES; CENTRAL OLFACTION

### 370 The characteristic aroma compounds in raw nonpareil almond kernel are enzymatic products

Jae Kwak, Adam Faranda, Joshua M Henkin, Michelle Gallagher, Larry Mink, George Pret, Patrick E McGovern

### 371 The Relationship between Intranasal Volume and Olfactory Performance

Valentin Schriever, Jessica Albrecht, Renée Mihail, Johannes Gerber, Johan N. Lundstrom

### 372 Olfactory Scintigraphy in Normal Volunteer by Intranasal Tl-201 Administration

Takaki Miwa, Hideaki Shiga, Junichi Taki, Seigo Kinuya, Kohshin Washiyama

### 373 Effects of Odor Discrimination Task Manipulation on Performance

Kathleen M. VanDeGrift, Lloyd Hastings, Melinda S. Brearton, Robert A. Frank, Brittany Carlisle, Katheryn G. Pointer

### 374 Time Course of Human Perceptual Odor Disadaptation

Ryan R. Keith, Erica Rodriguez, Swati Pradeep, Katherine Boylan, Danielle Broome, David W. Smith

### 375 Training the inter-nostril localization ability of olfactory chemicals

Simona Negoias, Oxana Aszmann, Johannes Gerber

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### 376 Similarities and differences between sensory systems in the localsiation of unilateral nasal stimuli.

Johannes Frasnelli, Valerie A. La Buissonniere Ariz, Olivier Collignon, Franco Lepore

### 377 Nasal Epithelial Responses in a Murine Model of Allergic Rhinitis

Virginia McM. Carr, Alan M. Robinson, Robert C. Kern

### 378 Influence of sinunasal diseases on olfactory function and quality of life

Franziska Krone, Ilona Croy, Jürgen Pade, Angelika Pade, Thomas Hummel

### 379 Olfactory neural responses of anosmics: A pilot fMRI study

Veronika Schöpf, Christian A Mueller, Christian Windischberger, Ewald Moser

### 380 Investigation of detection and pain thresholds at different sites at the human nasal mucosa in healthy subjects and patients with chronic rhinosinusitis

Mandy Scheibe, Annika Schmidt

### 381 Odors, Asthma and Risk Perception

Cristina Jaen, Pamela H. Dalton

### 382 "Olfaction in Burning Mouth Syndrome"

Yuri L. Yakov, Svetlana Yakov, Alan R. Hirsch

### 383 Eruction Sensitive Subjective Hypogeusia

Alan R. Hirsch

### 384 Identification of odor active substances in human amniotic fluid

Constanze Hartmann, Sébastien Doucet, Ralf Dittrich, Benoist Schaal, Andrea Buettner

### 385 Human Neonatal Responses to Androstenone

Sebastien Doucet, Constanze Hartmann, Ralph Dittrich, Robert Soussignan, Benoist Schaal, Andrea Buettner

### 386 The Scent of Nurturing: Experimental Evidence supporting the Priming of Infant Nurturing Behavior by Baby Powder Fragrance

Monique A. Smeets, Nikola M. Jörg, Judith Dubas, Henk Aarts

### 387 Effect of Sensory Education on Categorisation of Unknown Odors in Children

Caroline Reverdy, Christine Lange, Adeline Thibaut, Pascal Schlich, Egon Peter Köster

### 388 The Effect of the Stimulation of Traditional Korean Medicine Acupunctural Points on Olfactory Function

Nina J. Rhim, David E. Hornung

### 389 Phantosmia Treatment with Olfactory Counterstimulation- A Case Report

Amal Asiri, Allan Hirsch

### 390 Filial Catamenial Phantosmia

Jhanvi Menon, Alan R. Hirsch, Jhoette Dumlao

### 391 Developmental fine-tuning of olfactory discriminability

Xiaomeng Zhang, Kepu Chen, Wen Zhou

### 392 Quantifying Olfactory Function in the Aging U.S. Population: A Home Test.

David W. Kern, L. Philip Schumm, Martha K. McClintock

### 393 Olfaction and Executive Function in the Beaver Dam Offspring Study

Carla R. Schubert , Karen J. Cruickshanks, Guan-Hua Huang, Barbara EK Klein, Ronald Klein, James S. Pankow, David M. Nondahl

### 394 The Effect of Aging on Human Olfactory Ability

Caitlin E Welch, David E Hornung

### 395 Demographic Effects on Olfactory and Gustatory Function in Healthy Chinese

Ling Yang, Yongxiang Wei, Di Yu, Jinfeng Zhang, Yuehong Liu

### 396 Is there a shift in odor pleasantness with age?

Pauline Joussain, Johan Poncelet, Catherine Rouby, Moustafa Bensafi

### 397 Aging does not reduce the proliferative capacity nor the distribution of progenitor cells in the VNO

Jessica H Brann, Stuart Firestein

### 398 Clinical usefulness of Japanese version of University of Pennsylvania Smell Identification Test (UPSIT-J) to Japanese population

Masayoshi Kobayashi, Hitomi Ogihara, Kohei Nishida, Masako Kitano, Kazuhiko Takeuchi

### 399 The Odor Naming Power Test: Evaluating the Relationship of Odor Naming Ability and Recognition Memory Performance

Melinda S. Brearton, Trevor C. Cessna, Kathleen M. VanDeGrift, Lloyd Hastings, Robert A. Frank

### 400 Early Neurocognitive Changes Exhibited by Those at Risk for Alzheimer's Disease

Charlie D. Morgan, Claire Murphy

### 401 The Role of Odor Identification in Discriminating Depression from Probable Alzheimer's Disease in Older Adults

Emily S Bower, Claire Murphy

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### 402 Olfactory dysfunction in patients with Parkinson's disease is related to gray matter atrophy in regions of the olfactory cortex

Birgit Westermann, Elise Wattendorf, Thomas Hummel, Antje Welge-Luessen

### 403 The course of olfactory deficits in patients with Parkinson's disease - a long term study

Thomas Meusel, Birgit Westermann, Peter Fuhr, Antje Welge-Lüssen

### 404 Functional and morphometric studies of the olfactory system in patients with idiopathic normal pressure hydrocephalus

Dino Podlesek, Matthias Kirsch, Thomas Hummel, Johannes Gerber, Gabriele Schackert

### 405 Pre-exposure to odour mixture modifies the perceptual quality of the components

Thierry Thomas-Danguin, Charlotte Sinding, Boris Bervialle, Benoist Schaal, Gérard Coureaud

### 406 Is action inherently encoded into odor?

Yaara Yeshurun, Yadin Dudai, Noam Sobel

### 407 Determinants of the Pleasantness of Odor Mixtures

Per Møller, Ditte Hartvig, Wender Bredie

### 408 Body Odors Modulate Detection Speed of Visual Emotional Stimuli

Amy R. Gordon, Mats J. Olsson, Johan N. Lundstrom

### 409 Influence of Odor Hedonics, Food-relatedness and Motivational State on Human Sniffing

John Prescott, James Burns, Robert A Frank

### 410 Feeding and Ghrelin Administration Modify Sniff Behavior in Humans

Jenny Tong, Erica Mannea, Harold W Davis, Matthias H Tschoep, Robert A Frank

### 411 Olfactory sensitivity related to hunger state, BMI and negative mood

Lorenzo D Stafford, Kimberley Welbeck

### 412 Neural correlates of olfactory selective attention

Christina Zelano, Katie Phillips, Aprajita Mohanty, James Howard, Keng Nei Wu, Jay Gottfried

### 413 Differential activation of neural networks in an odor recognition task: an event-related fMRI study

Jean-Pierre Royet, Léri Morin-Audebrand, Barbara Cerf-Ducastel, Lori Haase, Sylvie Issanchou, Claire Murphy, Pierre Fonlupt, Claire Sulmont-Rossé

### 414 Odor Coding in the Human Brain: Effect of Expectation

Jane Plailly, James D Howard, Jay A Gottfried

### 415 Brain activity during lateralized olfactory stimulation and retrieval – an fMRI Study

Soraya Krieg, Thomas Meusel, Markus Klärhofer, André Arnoux, Thomas Hummel, Birgit Westermann, Antje Welge-Lüssen

### 416 Contextual modulation of odor valence coding

Aprajita Mohanty, James D. Howard, Katie M. Phillips, Keng Nei Wu, Christina Zelano, Jay A. Gottfried

### 417 Altered processing of olfactory stimuli in women with a history of childhood maltreatment: A functional MRI study

Ilona Croy, Julia Schellong, Johannes Gerber, Peter Joraschky, Emilia Iannilli, Thomas Hummel

### 418 Brain mechanisms controlling the soft palate

Roni Kahana, Lee Sela, Noam Sobel

### 419 A Brain-Machine Interface Through the Nose: Text Writing

Lee Sela, Anton Plotkin, Aharon Weissbrod, Nachum Soroker, Noam Sobel

### 420 Size Matters: Volumetric Relationship between the Olfactory Bulb and Olfactory Brain Areas

Eva C. Alden, Jessica Albrecht, Emilia Iannilli, Johannes Gerber, Thomas Hummel, Johan Lundstrom

### 421 Spontaneous $Ca^{2+}$ Oscillations in Olfactory Bulbs of Neonatal Mice

Mavis Irwin, Mary T Lucero

### 422 Purinergic Receptor-Mediated $Ca^{2+}$ Signaling in Cells of the Olfactory Bulb and the Periventricular Zone of the Lateral Telencephalic Ventricles

Ivan Manzini, Philipp Schulz, Thomas Hassenklöver, Anna Peters, Detlev Schild

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