# List of Abstracts from the Twenty-fourth Annual Meeting of the Association for Chemoreception Sciences

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

Opening Lecture (supported by the Givaudan Corporation)

Reorganization of sensory maps after sensory loss in developing and adult primates

J.H. Kaas

#### **SYMPOSIA**

Sensory Coding in the Molecular Era: The Neural Representation of Gustatory, Olfactory and Somatosensory Stimuli (supported in part by a grant from the National Institute on Deafness and Other Communication Disorders)

Introduction: sensory coding in the molecular era: the neural representation of gustatory, olfactory and somatosensory stimuli S.P. Travers

Similarities between the dynamic and distributed nature of neuronal ensemble activity in the primary somatosensory and gustatory cortices

M.A. Nicolelis

Individual neurons and taste quality coding

D.V. Smith

Olfactory coding

M. Leon and B.A. Johnson

Stem Cells and the Chemical Senses: Analytic and Therapeutic Approaches (supported in part by the Taste and Smell Program, National Institute on Deafness and Other Communication Disorders)

Introduction: stem cells and the chemical senses: analytic and therapeutic approaches

J.E. Schwob

NIH policy and funding of stem cell research

A.Y. Chiu

Stem cells and the nervous system

M.S. Rao

Induction of neurogenesis in the neocortex of adult mice

The analysis of progenitor and stem cell capacity in the mammalian olfactory epithelium

J.E. Schwob

Behavioral Analysis of Chemosensory Function (supported in part

by a grant from the National Institute on Deafness and Other Communication Disorders)

Introduction: behavioral analysis of chemosensory function J.I. Glendinning

Avian psychoacoustics

R.J. Dooling

Evolution in parallel: what behavioral studies of insects tell us about olfactory codes in general

B H Smith

What genes, second messengers and ion channels cannot tell us . . . or: why behavioral analysis of olfactory function is more important than ever

M. Laska

What is the best strategy for assessing taste-mediated ingestive responses in mice?

J.I. Glendinning

The Chemicals of the Chemical Senses (Presidential Symposium—supported in part by a grant from the National Institute on Deafness and Other Communication Disorders)

Introduction: the chemicals of the chemical senses

S. Firestein

Making molecules matter

P. Atkin:

Use of high throughput discovery techniques to create novel flavor and fragrance molecules

D.H. Rogers

Computational methods in structure-based odorant discovery N.G. Richards

**Designing fragrance ingredients** 

c sel

Molecular performance and perception informatics

C.D. Brooks

Chemosensation: Psychophysical Measurement in the 21st Century (supported in part by International Flavors and Fragrances, Inc., and by a grant from the National Institute on Deafness and Other Communication Disorders)

Introduction—chemosensation: psychophysical measurement in the 21st century

L.E. Marks

G.A. Gescheider

The perils of across-group comparisons

L.M. Bartoshuk

Using functional measurement to study chemosensory responses R.A. Frank

Nonmetric scaling of sensory events: advantages and disadvantages

B.A. Schneider

New Insights into Phosphoinositol Signaling (supported in part by a grant from the National Institute on Deafness and Other Communication Disorders)

**Introduction: new insights into phosphoinositol signaling** B.W. Ache and S.C. Kinnamon

The complex and intriguing lives of PIP2 with ion channels and transporters

D.M. Kang, S. Feng, C. Nasuholglu and D.W. Hilgemann

**Diversity and functions of TRP channel subfamilies** C. Harteneck

**3-Phosphoinositide signaling in olfactory receptor cells** B.W. Ache

Phosphoinositide signaling in taste cells S.C. Kinnamon

# POSTER AND SLIDE PRESENTATIONS

Signal transduction of umami taste by  $\alpha\text{-gustducin}$  and  $\alpha\text{-transducin}$ 

W. He, R.F. Margolskee and S. Damak

Effect of transgenic over-expression of NR2B on olfactory memory performance in the mouse

T.L. White and S.L. Youngentob

Odor detection and odor discrimination in bilaterally olfactory bulbectomized rats

B. Slotnick, E. Pickett and R. Cockerham

CNGA4 null mice exhibit behavioral defects in odor threshold sensitivity and adaptation

K.R. Kelliher, J. Ziesmann, S.D. Munger, R.R. Reed and F. Zufall

Regulation of insect olfaction by sensory arrestins

C.E. Merrill, J. Riesgo-Escovar, R.J. Pitts, J. Carlson and L.J. Zwiebel

Genetic manipulation of odor receptors in Drosophila

T. Shiraiwa, W. Van Der Goes Van Naters, D. Lessing, C. Warr, M. De Bruyne and J.R. Carlson

Live cell imaging of  ${\rm Mg}^{2+}$  influx during the biotin off-response in *Paramecium* 

W.E. Bell and M.H. Green

Use of real-time PCR to quantitate differences in expression of delayed rectifying potassium channels in taste cells

D.R. Hansen, S. Kwon and T.A. Gilbertson

**Expression of the CIC family of chloride channels in taste cells** S. Rao, D.R. Hansen, C.A. Burks and T.A. Gilbertson

The Ca<sup>2+</sup>-activated CI conductance in rat olfactory receptor cells J. Reisert, K. Yau and S. Frings

IP3 receptors and olfactory receptor transduction

G. Liu, R. Badeau, A. Tanimura and B. Talamo

Expression of Na<sup>+</sup>/Ca<sup>2+</sup>/(K<sup>+</sup>) exchangers in olfactory receptor

M.M. Pyrski, J.W. Margolis, S.K. Polumuri, G. Bell, A. Ruknudin, D.H. Schulze and F.L. Margolis

Calmodulin-mediated olfactory adaptation: the roles of cAMP-gated channel subunits

J. Bradley, W. Bönigk, K. Yau and S. Frings

Multiple subtypes of voltage-gated sodium channels are expressed by mouse olfactory sensory neurons

C.T. Frenz and V.E. Dionne

Calcium sensitivity of a sodium-activated non-selective cation channel in lobster olfactory receptor neurons

Y.V. Bobkov and B.W. Ache

Molecular and cellular characterization of an IH-channel from lobster olfactory receptor neurons

T. Marx, V. Bobkov, C.H. Wetzel, G. Gisselmann, B.W. Ache and H. Hatt

Over-expression of Xdll3 and Xdll4 results in similar morphological change in Xenopus laevis

J.T. Cox and G.D. Burd

Representational difference analysis of metamorphic climax versus pre-metamorphic *Xenopus laevis* noses

E.S. Walworth and G.D. Burd

Immunolocalization of PACAP in the developing and mature rodent  $\ensuremath{\mathsf{VNO}}$ 

E.W. Johnson, C.C. Hegg and M.T. Lucero

Localization of ALDH 1 in rat olfactory glia and effects of vitamin A deficiency on its expression

M. Asson-Batres

Growing olfactory receptor axons from *Manduca sexta* display different interactions with central and peripheral glia *in vitro* E.S. Tucker, L.A. Oland and L.P. Tolbert

**A role for Eph/ephrin signaling in developing olfactory axons** M. Kaneko and A. Nighorn

Differences in lectin-binding constituents on olfactory receptor axons projecting to ordinary and sexually dimorphic glomeruli in male and female *Manduca sexta* 

N.J. Gibson, J.G. Hildebrand and L.P. Tolbert

NCS-1 in the developing olfactory system

H.B. Treloar, U. Uboha, A. Jeromin and C.A. Greer

Cadherins and catenins in the developing olfactory system M.R. Akins, H.B. Treloar and C.A. Greer

*In vitro* evidence that diffusible factor(s) released by olfactory epithelium promote dendrite extension of mitral cells

H. Tran, J.C. Posthumus and Q. Gong

Roller tube co-culture of olfactory epithelium and bulb supports chronic neuron survival

E.M. Josephson and A. Linton

Differential expression of CaMKII in the main and accessory olfactory bulbs

D. Zou and S. Firestein

Telencephalin expression in the developing mouse olfactory bulb H. Tookes, Y. Yoshihara, K. Mori and C.A. Greer

Superoxide dismutase immunoreactivity in the human olfactory bulb: effect of age in Alzheimer's disease patients

M.L. Getchell, S. Buch, D.G. Davis, D.S. Shah and T.V. Getchell

Apoptotic cell death in the aging olfactory epithelium

A.M. Robinson, D.B. Conley, M.J. Shinners and R.C. Kern

#### The impact of aging and medications on functional characteristics of human olfactory neurons

N.E. Rawson, G. Gomez, G. Adamek, E.A. Pribitkin and B.J. Cowart

## MHC-derived odor preferences in aging female rats

E. Shaw-Taylor and M.K. McClintock

#### Odor memory in aging rats

S. Krämer and R. Apfelbach

#### Odor detection thresholds in young and old mice

J. Larson and D. Sieprawska

#### Decreased activation in primary olfactory areas of older subjects in response to retronasal olfactory stimulation: a region of interest analysis of fMRI data

B. Cerf-Ducastel, G. Martinez and C. Murphy

#### Additional insights into the influence of aging on odorant quality perception

J.W. Newlon, D.B. Kurtz and D.E. Hornung

## Relationships between food preference and intake across the lifespan: new findings from NHANES III and USDA surveys

D.J. Snyder, V.B. Duffy, H.J. Hoffman, C.W. Ko and L.M. Bartoshuk

# Age-related differences in fat perception, preference and intake

A.K. Chapo, L.M. Bartoshuk, J.Z. Ilich and V.B. Duffy

#### Flavour-texture interaction in model cheese waffles

J. Mojet and S. Kremer

#### Olfactory dysfunction in degenerative ataxias

T. Connelly, J.M. Farmer, D.R. Lynch and R.L. Doty

#### Correlates of odor discrimination, identification and recognition memory task performance in patients with epilepsy

M.F. Dulay and B.K. Schefft

## Significant hyposmia in cystic fibrosis

G. Henriksson, A. Hallberg, P. Stjärne and L. Hjelte

#### Chemosensory perception in elderly lung cancer patients on chemotherapy

S.S. Schiffman, J. Zervakis, L.K. Campagna and J.L. Garst

#### Smell loss in nasal-sinus disease

B.J. Cowart, E.A. Pribitkin, C.T. Klock, D. Rosen, M.R. Rosen and W.M. Keane

#### Olfactory and neuropsychological deficits in patients with alcohol dependence

C.I. Rupp, D. Mair, M. Kurz, A. Hausmann and H. Hinterhuber

# An unblinded trial of alpha-lipoic acid in the treatment of olfactory loss following infections of the upper respiratory tract

S. Heilmann, J. Frasnelli, K. Huettenbrink, B. Hauswald and T. Hummel

# Environmental odor sensitivity in females: can it be induced experimentally by repeated exposures to low-level chemicals?

M.A. Smeets, C. Maute, R.E. Opiekun and P. Dalton

#### The molecular genetics of human congenital general anosmia E. Feldmesser, S. Halbertal, M. Frydman, R. Gross-Isseroff and D. Lancet

#### The Cranial I Quick Sniff®: a new screening test for olfactory function

A.N. Gilbert, R. Popper, J.J. Kroll, L. Nicklin, D.A. Zellner

# Comparative study between the T&T olfactometer and the odor stick identification test for the patients with olfactory disturbance

T. Miwa, I. Horikawa, T. Ishimaru, S. Hatanaka, M. Furukawa, S. Saito and Y. Takashima

## Fungiform papilla number associates with dietary fat behaviors and serum cholesterol in middle-aged adults

V.B. Duffy, H. Hutchins, G.J. Allen and L.S. Pescatello

#### Are 6-n-propylthiouracil (PROP) nontasters at risk for high blood pressure?

H.L. Hutchins, L.S. Pescatello, G.J. Allen and V.B. Duffy

#### Molecular evolution of the mosquito Anopheles gambiae chemoreceptor gene superfamily

H.M. Robertson

#### Identification of a human bitter receptor

B. Bufe, T. Hofmann, D. Krautwurst and W. Meyerhof

#### Odorant receptor identity imparts a specific code to axons of olfactory sensory neurons.

P. Feinstein, K. Hedbacker, J. Lee, I. Rodriguez, A. Vassalli and P. Mombaerts

#### Data mining, sequence analysis and motif discovery of the mouse olfactory receptors

X. Zhang, A.H. Liu, A. Califano, G. Stolovitzky and S. Firestein

#### Interaction of burn between capsaicin, piperine and zingerone M.A. Affeltranger, D.H. McBurney and C.D. Balaban

#### Desensitization of oral irritation by mustard oil and reciprocal cross-desensitization with capsaicin

E. Carstens, M. Iodi Carstens and C.T. Simons

#### Assessment of ocular and nasal irritation in asthmatics resulting from fragrance exposure

R. Opiekun, M. Smeets, R. Rogers, N. Prasad, U. Vedula and P. Dalton

#### Sensory perception of particulate matter from minerals

W.S. Cain, A.A. Jalowayski, M.T. Kleinman, N.S. Lee, B.R. Lee, B.H. Ahn, K. Magruder, R. Schmidt and B.D. Culver

#### Individual differences in nasal localization functions for carbon dioxide

P.M. Wise, T. Radil and C.J. Wysocki

# Does Haber's Law apply to sensory irritation?

D.J. Shusterman, E.C. Matovinovic and A.G. Salmon

#### Underground cable gnawing repellent effects with capsaicin treatments in northern pocket gophers (T. talpoides) and plains pocket gophers (G. bursarius)

S.A. Shumake

## In vivo effects of capsazepine on trigeminal nerve sensitivity to carbon dioxide and nicotine

H. Alimohammadi and W.L. Silver

#### Electrophysiological characterization of P2X-receptors in cultured rat trigeminal neurons

J. Paul, C.H. Wetzel and H. Hatt

# Similarities and differences between capsaicin- and methyl anthranilate-sensitive chicken trigeminal neurons

M.P. Kurnellas, M.L. Kirifides, L. Clark and B.P. Bryant

#### Behavioral effects of static magnetic fields on freely moving and restrained mice

D.R. Lockwood, B.S. Kwon, J.C. Smith and T.A. Houpt

#### Conditioned taste aversion induced by high magnetic fields in male and female rats depends on position within the field

T. Houpt, A. Riedell, G. Golden, J.A. Cassell, C. Riccardi and J.C. Smith

#### Taste pre-exposure attenuates both behavioral and neural expression of a conditioned taste aversion in rats

G.J. Tiffany, B.S. Kwon, J.M. Barranco, J.H. Lorch and T. Houpt

J.H. Lorch, B.S. Kwon, J.M. Barranco, G.J. Tiffany and T.A. Houpt

Taste-potentiated odor aversions: effects of excitotoxic lesions of the amygdala, ventroposteromedial thalamic nucleus and insular cortex in rats

T. Inui and T. Yamamoto

Sensors and mobile platform for electronic olfaction

A. Gelperin, A. Dodabalapur, H.E. Katz and D.D. Lee

Responses to host odor by the Limulus worm

D.A. Martel and J. Atema

Fertilization in the sea: the chemical identity of an abalone sperm attractant

P.J. Krug, J. Riffell and R.K. Zimmer

The effect of odor pulse frequency on the orientation behavior of the crayfish, *Orconectes rusticus* 

C.P. Kozlowski and P.A. Moore

Unilateral lesioning of chemoreceptors distinguishes between rheotaxis and chemotaxis

K.E. Kraus-Epley and P.A. Moore

Orientation in complex sensory landscapes: spatial arrangement of odor sources modifies orientation strategies of crayfish M.C. Wolf and P.A. Moore

American lobsters track and locate distant 'leaky' odor sources R. Voigt, J. Basil and J. Atema

Different populations of antennular chemosensilla can mediate the orientation of spiny lobsters

A.J. Horner and C.D. Derby

Modification of the silkmoth pheromone-searching behavior by visual information, circadian rhythms and serotonin

L. Gatellier, E.S. Hill, M. Iwano, T. Nagao and R. Kanzaki

An evaluation of factors related to the determination of the direction of quarry movement by experienced tracking dogs

I.L. Brisbin, D.B. Walker, W.H. Morrison and J.C. Walker

Measuring canine olfactory function naturalistically

D.H. Pickel, D.B. Walker, F.B. Hoadley, J.L. Taylor and J.C. Walker

Modeling of human olfactory adaptation

K. Zhao, P. Dalton, R. Opiekun, D. Coleman and P.W. Scherer

Concentration modulation of sniffing in humans reveals rapid olfactory processing

B. Johnson, J. Mainland and N. Sobel

Dose-dependent responses of *Manduca sexta* 'pheromone-specific' olfactory neurons to general odorants

Z.A. Peterlin, M.E. Rogers, A.T. Chesler and S.J. Firestein

Disruption of gap junctions in olfactory neurons alters olfactory responses to some odors

C. Zhang and D. Restrepo

Complex electrophysiological responses of catfish olfactory receptor neurons to amino acid stimuli

T. Valentincic, A. Koce, A. Blejec and P. Miklavc

In situ calcium imaging for spatial odor maps in the mouse olfactory epithelium

M. Omura, H. Sekine, T. Shimizu, H. Kataoka and K. Touhara

Combinatorial pheromone coding visualized in the mouse main olfactory epithelium

J. Ziesmann, W. Ma, M.V. Novotny, F. Zufall and T. Leinders-Zufall

Mapping olfactory responses to CO2 in adult rats

A. Cecala, E. Coates and J.W. Scott

The contribution each nostril makes to olfactory perception

K.S. De Puy and D.E. Hornung

Specific effect of odor but not visual imagery on detection of weak odors

J. Djordjevic, J. Boyle, R. Zatorre and M. Jones Gotman

Perception of animal odors in spaceflight: sensory and cognitive effects

M. Gould, N. Doolittle, T. Bateman and P. Dalton

Mechanisms of olfactory perceptual learning

M.L. Fletcher and D.A. Wilson

Mapping the multi-dimensionality of olfactory experience and memory

J. Koenitzer, C. Maute, A. Oshida, S. Hikichi, Y. Izumi and P. Dalton

Sex differences in recollective experience for olfactory and verbal information

M. Larsson, M. Lövdén and L. Nilsson

Evidence for left:right differences in odor discrimination, but not in short-term odor memory

R.L. Doty and A.K. Halm

Attention to gustatory and olfactory flavors

A. Ashkenazi and L.E. Marks

Effects of peppermint odor on increasing clerical office-work performance

P. Grayhem, J. Koon, A. Whalen, S. Barker, J. Perkins and B. Raudenbush

Effects of odorant administration on ratings of physical attractiveness and personality characteristics

N. Corley and B. Raudenbush

Altering the experience of chemesthesis: instructional manipulations, attentional focus and perceived irritation

C. Maute and P. Dalton

Modulation of pain threshold, pain tolerance, mood, workload and anxiety through odorant administration

B. Raudenbush, B. Meyer, N. Flower and J. Koon

Effects of motivation and competitiveness on pain threshold and response

J. Perkins, B. Tornifolio, K. Gillis, A. McCune, K. Zambito and

B. Raudenbush

A test of associative odor learning

R.S. Herz and S.L. Beland

Memory for individual odors in golden hamsters: functional neuroanatomy and role of protein synthesis

W. Lai, A. Chen and R.E. Johnston

Memory consolidation in the one-trial learning of nipple-search odors in rabbit pups

R. Hudson, A. Mendoza, V. Guzmán and G. Coureaud

Flavor and texture perception of dairy products using prop classification and free-choice profiling

S.V. Kirkmeyer and B.J. Tepper

Postingestive effects of added glutamate on liking for novel flavors

J. Prescott

Effects of capsaicin treatment on taste perception in women

C.E. Massaro, B.K. Formaker and M.E. Frank

# Hormonal gating of exposure-induced sensitivity to odors in

P. Dalton, M. Gould, M. Basic and P.A. Breslin

#### Olfactory coding of pleasantness and intensity in the human amygdaloid complex

N. Sobel, R. Khan, I. Stappen and A. Anderson

#### Cerebral processing of bimodal odorants

H. Berglund, E. Heden-Blomqvist and I. Savic

# Olfactory impairment in a population at risk for dementia

C. Murphy, C. Schubert and K.J. Cruickshanks

#### **Swedish Smell Identification Test for Children**

A. Hallberg, P. Stjärne and M. Larsson

#### Assessment of olfactory function in children using the Sniff **Magnitude Test**

K.A. Niergarth, M.F. Dulay, R.C. Gesteland and R.A. Frank

# Bitter taste modification by sodium salts in pediatric populations

M.Y. Pepino, N. McFarlane, T. Teel, P.A. Breslin, G.K. Beauchamp and J.A. Mennella

# Taste pore density on the tongue and prop sensitivity in children

I. Hutchinson, M. Shahbake, D.G. Laing and A.L. Jinks

## Genetic sensitivity to 6-n-propylthiouracil influences acceptance of certain bitter and spicy foods in preschool children

K.L. Keller and B.J. Tepper

#### The effects of timing and duration of exposure on establishing flavor preferences during infancy

C.E. Griffin, J. Howard, G.K. Beauchamp and J.A. Mennella

#### Heightened sour preferences during childhood

D.G. Liem and J.A. Mennella

#### Influences on young children's willingness to try novel food M. Goldsmith and D. Mumme

Structural and functional measures of maturation in cultured

human olfactory neurons G. Gomez and N. Rawson

#### NT-3 increases the survival of mature orns and reduces the proliferation and maturation of immature neurons

E. Wang, P.J. Simpson, C. Moon, D. Samanta-Roy and G.V. Ronnett

## Spatially dynamic expression of MeCP2 in rodents

D. Cohen, V. Matarazzo, A. Palmer, B. Khokhar and G.V. Ronnett

#### Expression of Dlx 1 and 2 in the neonatal and adult mouse olfactory system

S. Saino and H. Baker

#### Progenitor cells and continual development of the lobster's olfactory organ

P.J. Harrison, H.S. Cate and C.D. Derby

#### Homologues of the developmental genes hairy/deadpan and CYP4 cytochrome P450 in the olfactory organ of spiny lobster H. Liu, W.W. Walthall, P.C. Tai and C.D. Derby

#### Identification of differentially expressed genes at a site of olfactory neurogenesis

T.D. Stoss, M. Cobb, C.D. Derby and T.S. McClintock

#### Serine proteases in olfaction: their functional expression in the olfactory organ of spiny lobsters

M.E. Johns, W. Tzeng, P.C. Tai and C.D. Derby

## Notch signaling genes are coexpressed with taste receptor cell markers, suggesting discrete lineage relationships

Y. Seta, C.L. Stoick, J.K. Wooldridge and L.A. Barlow

#### Characterization of output cells in the zebrafish olfactory bulb H.K. Yettaw and C.A. Byrd

#### Immunohistochemical localization of the taurine-synthesizing enzyme in the rat olfactory bulb

I. Kratskin and O. Belluzzi

#### Olfaction and connections between the epithelium and olfactory bulb in 3-methyl indole-treated mice

K. Zaiens and B. Slotnick

#### The mushroom bodies of the scarab beetle Pachnoda marginata M.C. Larsson, B.S. Hansson and N.J. Strausfeld

Selective response to chemosensory stimuli in medial amygdala J.M. Westberry and M. Meredith

#### Evidence for segregation of function within the hamster AOB K.G. Bath and R.E. Johnston

#### G-Protein coupled receptors in the olfactory system: a strongly conserved mechanism of signal transduction

A. Frontini, B. Zielinski, W. Li, C. Dakhil and S. Yun

#### **Bex-OMP** interaction

J. Koo, M. Behrens, J.W. Margolis and F.L. Margolis

#### Cloning guanylyl cyclase activating proteins from the olfactory system of Manduca sexta

C. Collmann and A. Nighorn

#### Characterization of a distinct chemosensory subsystem in the mammalian nose

R.E. Cockerham, H. Fulle, D.L. Garbers, R.R. Reed and S.D. Munger

#### Transgenic analysis of the mouse guanylyl cyclase-D promoter K. Wu and H.J. Fulle

#### Regulation of cyclic AMP in the ciliary cytoplasm of the olfactory receptor cell

H. Takeuchi and T. Kurahashi

#### cAMP-independent and cAMP-dependent responses of olfactory neurons in Xenopus laevis tadpoles

W. Roessler, I. Manzini, F. Peters and D. Schild

#### Effects of cyclic nucleotides and biogenic amines on olfactory sensilla of the hawkmoth Manduca sexta

J. Dolzer, C. Flecke and M. Stengl

#### The relationship between the electronic/structural properties and the odor activities of pyrazine derivatives

T. Inoue, K. Shimazaki, H. Shikata and K. Sakakibara

#### Distribution of nerve fibers in the sea catfish *Plotosus lineatus* barbel

Y. Sakata, J. Tsukahara and S. Kiyohara

#### Degeneration of taste buds in mouse fungiform papilla after chorda-lingual nerve transection

N.A. Guagliardo and D.L. Hill

## Semiguantitative analysis of alterations in intragemmel nerve fibers in irradiated taste buds labeled with GAP/B50 or synaptic vesicle proteins

G.M. Nelson and K.E. Byars

# Simultaneous chronic recording from multiple single fibers of the chorda tympani nerve using an implantable sieve electrode array

Y. Shimatani, S.A. Nikles, K. Najafi and R.M. Bradley

Comparison of the responses of the chorda tympani and glossopharyngeal nerves to taste stimuli in C57BL/J mice V. Danilova and G. Hellekant

Electrogustometric thresholds: relationship to anterior tongue locus, area of stimulation and number of fungiform papillae S.L. Miller, N. Mirza and R.L. Doty

**Oral phantoms: evidence for central inhibition produced by taste** L.M. Bartoshuk, A. Chapo, V.B. Duffy, M. Grushka, R. Norgren, J.F. Kveton, T.C. Pritchard and D.J. Snyder

Pheromonal signals in a tangerine-scented seabird J.C. Hagelin, I.L. Jones and L.E. Rasmussen

Unusual pheromone receptor neuron responses in heliothine moth antennae derived from inter-species imaginal disc transplantation

S.A. Ochieng, K. Poole, W.L. Roelofs, C. Linn and T.C. Baker

Sex differences in olfactory cross-adaptation of human sweat odor

C.J. Wysocki, G. Preti, L.C. Smith, K. McDermott, J.J. Leyden, J. Louie, P. Wise, L. Connolly and L.M. Wysocki

Effects of breastfeeding chemosignals on human sexual motivation

N.A. Spencer, S. Jacob, S.A. Sellergren, S.B. Bullivant, J.A. Mennella and M.K. McClintock

Plasticity underlying androstenone learning may be mediated centrally rather than peripherally

J.D. Mainland, E.A. Bremner, N. Young, B.N. Johnson and N. Sobel

Odor stimulation modulates apoptosis in adult olfactory (piriform) cortex of the rat

C.H. Leung and D.A. Wilson

Ablation of bulb neurons kills piriform neurons but not sensory neurons

K. Guthrie and C. Gall

**Axotomy versus bulbectomy:temporal analysis of apoptosis** M.J. Shinners, A.M. Robinson, D.B. Conley and R.C. Kern

Does estrogen protect olfactory receptor neurons from apoptosis? D.Z. Pitovski

Glutamate receptor distribution in the olfactory bulb is altered following naris occlusion

K.A. Hamilton and D. Coppola

Developmental activation of extracellular signal-related kinase (ERK1/2) in olfactory bulb granule cells is altered by naris occlusion

J.M. Mirich and P.C. Brunjes

Mash1 and NeuroD expression in methyl bromide-lesioned adult rat olfactory epithelium

G.L. Manglapus, S.L. Youngentob and J.E. Schwob

Nogo & Nogo receptor expression in the mammalian olfactory system

C.L. Iwema, J.C. Bartolomei, S.M. Strittmatter and C.A. Greer

**Immunostaining of apolipoprotein E in murine mucosa** N.K. Kleene and S.K. Pixley

Chemokine-mediated infiltration of macrophages into the olfactory epithelium following target abalation

T.V. Getchell, N. Subhedar, D.S. Shah, G. Hackley, J.V. Partin, G. Sen and M.L. Getchell

Inflammatory cells in the normal and denervated lingual epithelium

L.P. McCluskey

Time-course of taste bud regeneration after transection of the glossopharyngeal and greater superficial petrosal nerves in the rat S.J. St John, M. Garcea and A.C. Spector

Recovery of salt taste responses after crush of the chorda tympani nerve in mice

K. Yasumatsu, H. Katsukawa, C. Sadamitsu, N. Shigemura and Y. Ninomiya

Developmental taste receptor cell kinetics

S.J. Hendricks, P.C. Brunjes and D.L. Hill

SHH protein in embryonic rat tongue and tongue cultures H. Liu, D.K. MacCallum, W. Gaffield and C.M. Mistretta

Sema3A repels late embryonic stage sensory axons that penetrate Sema3A mRNA-rich lingual epithelium

T.E. Dillon and M.W. Rochlin

**Retinoic acid acts directly to respecify oropharyngeal epithelium** S. Rougas, M.A. Parker and L.A. Barlow

Differential effects of gustatory nerve transection on quinine-stimulated Fos-like immunoreactivity in the parabrachial nucleus of the rat

C.T. King, S.E. Dodson, K.E. Galvin, M. Garcea and A.C. Spector

Denatonium, propylthiouracil and quinine elicit similar patterns of Fos-like immunoreactivity in the rat nucleus of the solitary tract C.Y. Chan, J.E. Yoo and S.P. Travers

**Signal transduction pathways in bitter taste detection** T.A. Richter, A. Caicedo, R.F. Margolskee and S.D. Roper

Physiological exploration of bitter and sweet receptors in rat taste receptor cells

F. Zhao, S. Lu and M.S. Herness

SOA & caffeine form non-normal taste distributions unrelated to PROP/PTC

P.A. Breslin, C.D. Tharp and D.R. Reed

**Taste interactions among binary mixtures of bitter compounds** M.M. Bournazel, R.S. Keast and P.A. Breslin

Capsaicin as a gustatory stimulus

B. Green and M. Schullery

Dynamic gating of spike propagation in the mitral cell secondary dendrites for interactions with different combination of olfactory glomeruli

W. Xiong and W.R. Chen

Odorant induced expression of ARC mRNA in mouse MOB periglomerular cells

J.E. Marchand and X. Yang

Adaptor proteins modulate protein-protein interactions and biophysical properties of an olfactory bulb K<sup>+</sup> channel

K.K. Cook, K.R. Tucker and D.A. Fadool

Glomerular, behavioral and biophysical changes in the olfactory bulb of Kv1.3 knock-out mice

D.A. Fadool, B.S. Colley, D. Otten and L.K. Kaczmarek

Responses of olfactory bulb units in the channel catfish to amino acid isomers

A.A. Nikonov and J. Caprio

Morphological and physiological characteristics distinguish four classes of juxtaglomerular neurons in the main olfactory bulb S.V. Karnup, A.M. Hayar, M. Ennis and M.T. Shipley

#### Ultra-long-lasting depolarizations in response to olfactory nerve input in developing mitral cells

A.C. Puche, P.M. Heyward and M.T. Shipley

Crayfish parasol cells exhibit multiple burst initiation sites D.N. Mellon

Back-propagating action potentials activate differential spatial calcium responses in mitral cells in rat olfactory bulb slices Z. Zhou, A. Xia and G. Shepherd

#### Modeling bistability and resonance in the membrane dynamics of mitral cells

P.M. Heyward, E.M. Izhikevich and M.T. Shipley

#### Membrane bistability and sub-threshold oscillations in an olfactory bulb mitral cell model

A.P. Davison, M.L. Hines and G.M. Shepherd

# Flavor effects on perceived texture and food intake

R.A. Dewijk, J.F. Prinz, L. Engelen and H. Weenen

# Bitterness and associated oral sensations in chlorhexidine/ethanol

M. Portmann, P. McConville, S. Alexander, P. Breslin, G. Beauchamp and C.D. Tharp

# Effects of chlorhexidine on the taste of chloride salts

M.R. Kolesar, J.F. Gent and M.E. Frank

#### Gustatory-irritant interactions: suppression of taste by oral capsaicin

Y.M. Boucher, C.T. Simons and E. Carstens

#### Nicotine suppression of tastant-evoked neural activity in the rat C.T. Simons, Y.M. Boucher and E. Carstens

#### Sucrose-denatonium and dulcin-quinine antagonism in neural responses to taste mixtures

B.K. Formaker, T.P. Hettinger and M.E. Frank

#### Role of prior associations in the sub-threshold integration of tastes and odors

M.A. Belanger, C.D. Tharp, P.A. Breslin and P. Dalton

#### Analysis of multicomponent odor mixtures by honeybees G.A. Wright and B.H. Smith

#### Asymmetric interactions between heterogeneous retronasal and orthonasal odorant pairs

B.C. Sun and B.P. Halpern

#### Specificity of sucrose-best fibers in rhesus monkey chorda tympani does not depend on stimulus concentration

Y. Danilov, V. Danilova and G. Hellekant

#### Role of amino acid neurotransmitters in taste-motor processing J.B. Travers, S.P. Travers and Z. Chen

# Highly specific olfactory receptor neurons specific to naturally produced odor ligands in Drosophila melanogaster

B.S. Hansson, M.C. Stensmyr, E. Giordano and A.M. Angioy

#### Parallel mapping of multiple stimulus features using multichannel recording arrays in the moth antennal lobe

T.A. Christensen, H. Lei and J.G. Hildebrand

## Rhythmic bursting and synaptic interactions among juxtaglomerular neurons may transform olfactory nerve inputs into synchronous all-or-none glomerular output

A.M. Hayar, S.V. Karnup, M.T. Shipley and M. Ennis

## Synthetic coding of odorant mixtures in rat piriform cortex D.A. Wilson

#### Landmine detection using an artificial olfactory system

J. White, R.N. Ray, L.P. Waggoner and J.S. Kauer

#### Drosophila OBPs expressed in taste organs

D.P. Smith

#### Calcium pump isoforms in chemoresponse

L. Gannon-Murakami, J. Yano, V. Rakochy, M. Valentine, M. Zhukovskaya, R.R. Preston and J. Van Houten

## Identification of rat taste cell types expressing IP3R3

T.R. Clapp, R. Yang, S.C. Kinnamon and J.C. Kinnamon

## Adenylyl cyclases and cAMP modulation in taste buds

T. Abaffy, K.R. Trubey and N. Chaudhari

#### Detection of taste quality in taste buds

A. Caicedo, K. Kim and S.D. Roper

#### Electrophysiological characterization of voltage-gated currents in mouse taste cell types

K.F. Medler, R.F. Margolskee and S.C. Kinnamon

#### Synaptobrevin is associated with synaptic vesicles at taste cell synapses

R. Yang, C.L. Stoick and J.C. Kinnamon

# Genome-wide profiling of individual taste receptor cells

L. Huang, Z. Liu, M. Max and R.F. Margolskee

# Neurotrophin receptors in rodent taste buds

C.L. Yee, T. Ogura, A.I. Farbman and T.E. Finger

#### Structure and function of fungiform taste buds in bax-knockout mice

C.J. Yuskaitis, O.L. May and D.L. Hill

#### Toward a nomenclature for human and mouse olfactory receptors C.J. Crasto and G.M. Shepherd

#### Development of an in vivo expression system for functional analysis of insect olfactory proteins

M.E. Rogers, Z.A. Peterlin, A.T. Chesler and S. Firestein

#### Comparison of homologous and heterologous expression systems for olfactory receptors

S. Bieri, K. Monastyrskaia, A. Valero and B. Schilling

#### Functional characterization of mouse odorant receptor, mOR-EG: effects of receptor modification and mutations

S. Katada, M. Tanaka, T. Nakagawa, K. Kajiya, H. Kataoka and K. Touhara

#### Characterization of a family of candidate odorant receptors from the malaria vector mosquito Anopheles gambiae

A.N. Fox, R.J. Pitts, H.M. Robertson and L.J. Zwiebel

# Molecular studies of human olfactory receptor neurons

H. Wang, G. Gomez and N.E. Rawson

#### Single-unit recording from goldfish olfactory receptor neurons using a wide range of biologically relevant odorants suggests high chemospecificity

K. Sato and P.W. Sorensen

#### Update on polyamines as olfactory stimuli in goldfish

S.H. Rolen, W.C. Michel and J. Caprio

# Metabolic profile and odor responsiveness of squid olfactory neuron subtypes

A.A. Sitthichai, W.C. Michel and M.T. Lucero

# Statistical method for rapid analysis of olfactory neuron activity

#### Multidrug resistance transporters in olfactory receptor neurons of Xenopus laevis tadpoles

I. Manzini and D. Schild

Suppressing olfactory sensory neuron activity with UV light M.C. Cheung and J.S. Kauer

Functional and biochemical differences between microvillar and ciliated olfactory receptor neurons in catfish

A. Hansen, A. Nikonov, K. Anderson, Y. Morita, T.E. Finger, J. Caprio and P.W. Sorensen

Differential responsiveness of ciliated and microvillar olfactory receptor neurons in goldfish

P.W. Sorensen, J. Caprio, A. Hansen, K.T. Anderson and T.E. Finger

Con A selectively blocks detection of carvone enantiomers in Wistar rats

R. Apfelbach, A. Kirner and E.H. Polak

Polymorphisms in an acid sensing ion channel (hfpASIC1) in human fungiform papillae

J. Cao, T. Huque, A.I. Spielman, P.A. Breslin and J. Brand

**Transcription of ENaC subunits in the developing rat** D.R. Binder, E.D. Posner and D.L. Hill

Characterization of acid sensitive ion channels in mouse taste cells N. Buffington, K. Medler and S.C. Kinnamon

**Evidence for expression of task-like K**<sup>+</sup> **channels in rat taste cells** W. Lin, S. Rao, S.C. Kinnamon and T. Gilbertson

Acute regulation of rat NaCl taste responses by pH

R.I. Alam, T.T. Phan, O.F. Russell, G.L. Heck, J.A. Desimone and V. Lyall

**Acute regulation of rat NaCl taste responses by cAMP and calcium** O.F. Russell, T.T. Phan, R.I. Alam, G.L. Heck, V. Lyall and J.A. Desimone

CPC-sensitive salt taste response in rat: dose-response and voltage-sensitivity

J.A. Desimone, G.L. Heck, T.T. Phan, R.I. Alam, O.F. Russell and V. Lyall

Glossopharyngeal nerve transection does not compromise chloride salt discrimination in the rat

L.C. Geran and A.C. Spector

Solid phase microextraction headspace analysis of urinary volatiles from adult male moose

C.L. Whittle, R. Bowyer, G. Preti and T.P. Clausen

Mechanisms facilitating scent over-marking in female golden hamsters

R.E. Johnston

Odors detected by golden hamsters prior to two days of age are differentially utilized during later development

S.C. Larimer and R.E. Johnston

Mammalian model of aggression and smell

V.V. Voznessenskaya and C.J. Wysocki

**Psychophysics of odor detection threshold in a model system** G. Krzys, K. Daly and B. Smith

**Novel release mechanism for a sea lamprey sex pheromone** S. Yun, M. Siefkes, S. Scott, B. Zielinski, A. Belanger and W. Li

Experimental evidence that  $7\alpha$ ,12 $\alpha$ ,24-trihydroxy- $5\alpha$ -cholan-3-one 24-sulfate functions as a sea lamprey sex pheromone M.J. Siefkes and W. Li

Relating behavior to olfaction in the round goby, *Neogobius melanostomus* (Perciformes: Gobiidae)

R.M. Belanger, C.M. Smith, B. Zielinski and L.D. Corkum

The effect of exposure to dominance odor on social behavior in crayfish, *Orconectes rusticus* 

D.A. Bergman and P.A. Moore

The effect of elevated CO<sub>2</sub> detritus on the foraging decisions of crayfish (*Orconectes virilis*)

J.A. Adams, N.C. Tuchman and P.A. Moore

Induced host preference in Spodoptera littoralis

M. Sjöholm, P. Anderson and B.S. Hansson

Pollination by deception—carrion mimicry in the dead horse arum

M. Stensmyr, I. Urru, I. Collu, A. Angioy and B. Hansson

Bitterness inhibition using the bitter compound urea

R. Keast, M. Bournazel and P.A. Breslin

Olfactory detectability of single chemicals and mixtures

J.E. Cometto-Muniz, W.S. Cain and M.H. Abraham

Systematic changes in the types of odor interactions are related to the molecular structure of the components

D. Laing, A.L. Jinks, C. Segovia and I. Hutchinson

Do somatosensory tactile stimuli interact with taste and aroma signals to modulate perception?

D. Cook, T.A. Hollowood, R.S. Linforth and A.J. Taylor

The prevalence of androstenone anosmia may be lower than previously estimated

E. Bremner, J. Mainland and N. Sobel

Detection thresholds for phenyl ethyl alcohol using serial dilutions in different solvents

T. Tsukatani, T. Miwa, M. Furukawa and R.M. Costanzo

Detection of glutaraldehyde in water: changing sensitivity and specific anosmia

R. Schmidt and W.S. Cain

Oral fat exposure augments the 'second meal' effect in humans R.D. Mattes

Olfactory discrimination of fatty acids in rats with large bilateral lesions of the olfactory bulbs

S. Bisulco and B. Slotnick

Sensory measurement of dynamic flavor perception in ice cream with different fat levels and flavorings

M. Bom Frøst, H. Heymann, W. Bredie, G.B. Dijksterhuis and M. Martens

**Detecting malingerers with psychophysical testing** M.R. Linschoten, L.O. Harvey Jr and S.M. Mitchell

Correlations between intranasal anatomy and human olfaction J. Vent, M. Damm, M. Schmidt, P. Theissen and T. Hummel

Integrated storage and compound management system to support high throughput discovery

E. Kell

Detection thresholds for 4,16-androstadien-3-one

M.J. Olsson, J.N. Lundstrom and A.S. Hicks

The smell of emotion: olfactory communication of emotion in humans

D. Chen and M.K. McClintock

Psychological effects of subthreshold exposure of 4,16-androstadien-3-one on women

J.N. Lundstrom and M.J. Olsson

Androstadienone affects courtship-like behaviors in women

P. Wilson, J. Haviland-Jones, C.J. Wysocki, S. Warrenburg and C. Christensen

Physiological and psychological effects of two putative human pheromones

W. Brown, B. Johnson, J. Mainland, E. Bremner, T. Tsutsui, S. Moguel, M. Bensafi and N. Sobel

#### Cross-cultural investigation of body odor

F. Huebener, S. Ayabe-Kanamura, M. Laska, T. Kobayakawa and S. Saito

#### Human axillary odors formed by endogenous bacteria

G. Preti, K.L. Sweigert, X.N. Zeng, K. McGinley, A. Foglia and J.J. Leyden

#### Analysis of dose-response functions in the antennal lobe of the moth Spodoptera littoralis

M.A. Carlsson and B.S. Hansson

#### Sensory processing of environmental CO2 information in the moth nervous system

P.G. Guerenstein, T.A. Christensen and J.G. Hildebrand

#### Representation of pheromone blends by projection neurons in heliothine moths

C. Kleineidam, N.J. Vickers and C.E. Linn Jr

#### Synchrony and spatiotemporal odor codes in antennal lobes of the moth Manduca sexta

K.C. Daly, G.A. Wright and B. Smith

#### Analysis of odor selectivity in the moth antennal lobe using neural-ensemble recording

H. Lei, T.A. Christensen and J.G. Hildebrand

#### Relationship between receptor neuron input and intrinsic optical signals in the mouse olfactory bulb

L.B. Cohen and M. Wachowiak

# Regulation of receptor neuron input to the mouse olfactory bulb mediated by suppression of presynaptic calcium influx

M. Wachowiak, P.M. Heyward, A.C. Puche and M.T. Shipley

#### A code for complex objects: emerging principles for natural odor representation in the mouse brain

M.L. Schaefer and D. Restrepo

#### Distinct activity patterns evoked by activation of mitral/tufted cell and centrifugal fiber inputs to main olfactory bulb granule cells N. Laaris and M. Ennis

#### Computational tools for mapping the glomerular layer of the olfactory bulb

E. Salcedo, M.L. Schaefer and D. Restrepo

#### Distribution of correlated activity in the olfactory bulb of rats from simultaneous multielectrode recordings

M.J. Lehmkuhle, R.A. Normann and E.M. Maynard

#### Neurobiology of the rat inferior salivatory nucleus

M. Kim, D.J. Cheigo Jr and R.M. Bradley

#### Lateral hypothalamus and amygdala modulate taste responses of parabrachial neurons

C. Li. Y.K. Cho and D.V. Smith

#### Convergence of forebrain influences on taste neurons of the solitary nucleus

Y.K. Cho, C. Li and D.V. Smith

#### Modulation of pontine taste activity by centrifugal inputs under taste

K. Tokita, Z. Karadi, T. Shimura and T. Yamamoto

#### Variability of taste response magnitude in the nucleus of the solitary tract with stimulus repetition

P.M. Di Lorenzo and J.D. Victor

# Effects of glossopharyngeal anesthesia on taste responses in the nucleus of the solitary tract of the rat

C.G. Reich and P.M. Di Lorenzo

#### Gurmarin suppression of sucrose responses in rat solitary nucleus neurons

O. Ndubuizu, C.H. Lemon, T. Imoto and D.V. Smith

An artificial neural network model of taste information processing C.H. Lemon and D.V. Smith

# Electrical stimulation of the PBN elicits ingestive oromotor behaviors in conscious rats: a topographic analysis

M.S. King, R.E. Dykes and C.T. King

#### Ionic control of sweet taste quality

K.A. Haywood, D.A. Giraud and G.G. Birch

#### Where are the critical regions for brazzein's sweet taste? Human psychophysical and monkey electrophysiological responses to brazzein mutants

Z. Jin, V. Danilova, J. Markley and G. Hellekant

#### Gymnema sylvestre sweet-blocking efficacy on tongue tip versus whole mouth

J.F. Delwiche and C. Beilstein

#### Mimicry of sucrose taste with non-caloric sweeteners

L.L. D'Angelo, G.A. King and G.E. Dubois

#### Discrimination of glucose and fructose after adaptation but not before

C.D. Tharp and P.A. Breslin

#### Generalization of a conditioned aversion to lick-contingent electrical stimulation of the nucleus of the solitary tract to a natural taste

R. Hallock and P.M. Di Lorenzo

#### Differential effects of estrogen on licking rates and ingestion of sucrose and NaCl solutions

K.S. Curtis, L.M. Davis, K. Therrien and R.J. Contreras

#### Use of an operant signal detection task to assess sucrose sensitivity in inbred mouse strains differing in sugar preference S. Eylam and A.C. Spector

# Gustatory responses to polycose in four species of nonhuman

M. Laska, S. Kohlmann, L.T. Hernandez-Salazar and E. Rodriguez-Luna

#### Polymorphisms of the mouse Tas1r3 gene are related to sweetener preferences in 30 strains of mice

A.A. Bachmanov, S. Li, X. Li, K. Lu, M.G. Tordoff, D.B. West, J.D. Ohmen, D.R. Reed and G.K. Beauchamp

#### A Gr receptor is required for response to the sugar trehalose in taste neurons of Drosophila

A. Dahanukar, W. Van Der Goes Van Naters, K. Foster and J.R. Carlson

#### Calcium pumps, lipid rafts and GPI anchored proteins in chemoresponse

J. Yano, V. Rakochy, R.R. Preston, L. Gannon-Murakami and J. Van Houten

#### Chorda tympani (CT) neurons express neurotrophin receptor genes different from greater superficial petrosal (GSP) neurons A.I. Farbman, S. Sollars, N. Guagliardo and D. Hill

## The role of cAMP and Ca<sup>2+</sup> in the excitation and adaptation of taste responses to HCl

V. Lyall, R.I. Alam, T.T. Phan, A.K. Vinnikova, S.K. Desimone, G.L. Heck and J.A. Desimone

#### Expression of epithelial sodium channels (ENaCs) in human fungiform papillae

T. Hugue, L. Wysocki, D. Bayley, P.A. Breslin, A. Spielman and J. Brand

#### PACAP modulates potassium currents and promotes survival of olfactory receptor neurons

P. Han, C.C. Hegg, A.J. Roskams and M.T. Lucero

Mechanism underlying odor inhibition in toad olfactory receptor neurons

R. Madrid and J. Bacigalupo

The scent of danger: chemical alarm signals and escape from cannibalism in newts

D.W. Schar, P.J. Krug and R.K. Zimmer

Chemical attractants as chemical defenses

P.M. Johnson, V.J. Paul, E. Cruz-Rivera and C.D. Derby

Larval reef fish could use odor for detection, retention and orientation to reefs

J. Atema, M.J. Kingsford and G. Gerlach

Odor plumes and hydrodynamics: how crayfish find odor sources PA Moore

Intra-individual correlation of chemosensory event-related potentials between repeated measurements

A.C. Welge-Lüssen, C. Wille, B. Renner and G. Kobal

Apolipoprotein E E4-positive individuals: olfactory event-related potentials at 2-year follow-up

S. Wetter, V. Zizak, D. Broman and C. Murphy

A study of hypoadditivity using dichorhinal stimulation

T.J. Jacob, C.S. Fraser and L. Wang

Stereospecificity of electrophysiological and subjective responses of nicotine

F.P. Gullotta and C.S. Hayes

Trigeminal event-related potentials: relation to stimulus duration and intensity

J. Frasnelli, J. Loetsch and T. Hummel

Olfactory processing and medial frontal cortex: electrophysiological approach

S. Bouret, E. Kublik, D.A. Wilson and S.J. Sara

Neural correlates of cortical odor habituation

A R Best and D A Wilson

Olfactory memory and the medial frontal cortex in the rat

S. Tronel and S.J. Sara

Taste, texture and fat representations in the primate orbitofrontal cortex

J.V. Verhagen, E.T. Rolls and M. Kadohisa

Temporal aspects of gustatory coding obtained from cortical ensembles in awake rats

D.B. Katz, S.A. Simon and M.A. Nicolelis

Different reaction of human brain to the invigorating and relaxing odors

J. Wang, P.J. Eslinger, M.B. Smith, Q.X. Yang and R. Ansari

Temporal lobe olfactory cortex activation during sniffing and velopharyngeal closure

M. Sabri, D.A. Kareken, D. Hector, E.D. Claus and G.D. Hutchins

Reduced taste intensity perception in patients with ipsilateral or bilateral insular atrophy due to primary progressive aphasia

R. Srinivasan and D. Small

Olfactory marker protein is expressed in the visual cortex of rats and cats

E. Weiler

Cephalic phase salivary response differences characterize level of food neophobia

B. Meyer, B. Raudenbush, A. Kozlowski, N. Corley and N. Flower

Generalizability versus specificity of psychophysical ratings made by food neophobics and neophilics across all sensory dimensions A. Kozlowski, B. Raudenbush and B. Tornifolio

Refreshment is distinguished by a discrete subjective change J.W. Schooler and D.V. Halpern

Modulation of the human acoustic startle reflex by tea aromas: a comparision of Asian and non-Asian subjects

J.M. Aspen, H. Kaviani, D.S. Scott and J.A. Gray

Effects of ambient floral odors on family activities and self perceptions

A.R. Hirsch

Ameliorating agricultural odors: down on the farm

J. Louie, C.J. Wysocki, G. Preti, P. Pitcher, T.D. Parsons, J.J. Kim and L. Connolly

Behavioral evidence for a role of gustducin in umami tast C. Ruiz, E. Delay, R. Margolskee and S.C. Kinnamon

Discrimination between tastes of monosodium glutamate and glutamate agonists in rats

E.R. Delay, G.M. Sewczak, J.R. Stapleton and S.D. Roper

Generalization of CTA between monosodium glutamate and sweet substances in rats

B.R. Heyer, C.C. Taylor-Burds, L.H. Tran and E.R. Delay

Double-labeling c-fos mRNA and protein in the rat solitary nucleus after sucrose and MSG ingestion

J.K. Gropp, J.R. Stapleton, C.L. Barnes and E.R. Delay

Human receptors for sweet and umami taste

X. Li, L. Staszewski, H. Xu and E. Adler

Nitric oxide as a possible gain control in the olfactory system M.A. Cousins, K.C. Daly and B. Smith

NO acts as a complex modulator of rat olfactory receptor neuron activity

J. Diaz, O. Schmachtenberg and J. Bacigalupo

Systemic L-NAME attenuated lithium-induced c-Fos expression in the brain, but no effect on the acquisition of lithium-induced conditioned taste aversion in rats

J.W. Jahng, J.H. Lee and T.A. Houpt

Exploring neuronal and molecular mechanisms that mediate odorant-stimulated nitric oxide production in the antennal lobe of Manduca sexta

C. Wilson, C. Collmann and A. Nighorn

Expression and function of NPY in the rat olfactory bulb L.J. Blakemore, A.M. Alshingiti, C.W. Levenson and P.Q. Trombley

Activation of purinergic receptor subtypes differentially modulates mouse ORN odor resposiveness

C.C. Hegg and M.T. Lucero

Dopamine inhibits odor responsiveness and excitability in mouse **ORNs** 

C.C. Hegg and M.T. Lucero

Electrophysiological, immunocytochemical and molecular analyses of kainate receptors in the rat olfactory bulb

N.G. Davila, M.S. Horning, L.J. Blakemore, T.A. Houpt and P.Q. Trombley

Mechanism of glutamate excitation of the soma and proximal dendrite of mitral cells

G. Lowe

Ionotropic glutamate receptor activation selectively depletes gaba levels in zebrafish olfactory bulb

W.C. Michel and J.G. Edwards

## Pharmacological characterization of ionotropic glutamate receptors in the zebrafish olfactory bulb

J.G. Edwards and W.C. Michel

Metabotropic glutamate receptor mGluR1 directly and potently activates mitral cells in main olfactory bulb slices

T. Heinbockel and M. Ennis

Expression of serotonin receptors in rat taste receptor cells N. Kaya, T. Shen and M.S. Herness

#### GABAergic cells in the goldfish vagal lobe

K. Anderson, B. Böttger, K. Lariviere, V. Trudeau and T.E. Finger

CCK-8 potentiates the synaptic response to afferent stimulation in the primary gustatory nucleus of goldfish

A.A. Sharp and T.E. Finger

Investigation of the signal transduction pathway in vomeronasal receptor neurons of the rat

M. Spehr, H. Hatt and C.H. Wetzel

Netrin-1 regulates the migration of LHRH neurons to the basal forebrain

G. Schwarting and D. Raitcheva

Immunohistochemistry of the vomeronasal organ in callitrichids and prosimians: an ontogenetic study

J.C. Dennis, T.D. Smith, K.P. Bhatnagar, C.J. Bonar and E. Morrison

Assessment of olfactory function and androstenone odor thresholds in man with or without covering the vomeronasal duct M. Knecht, M. Witt, K. Hüttenbrink and T. Hummel

Expression of second messenger pathways in the vomeronasal organ

J.H. Brann, J.C. Dennis, E.E. Morrison and D.A. Fadool

Pheromonal activation of vomeronasal neurons in plethodontid salamanders

C.R. Wirsig-Wiechmann, L.D. Houck, P.W. Feldhoff and R.C. Feldhoff