

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

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Givaudan-Roure Lecture

Multicomponent signals in ant communication

B. Hölldobler

Slides: Animal Behavior & Olfaction

Pheromonal messages by male Asian elephants: honey or frontalinal?

L.E. Rasmussen, H.S. Riddle, D.R. Greenwood

Sex and the single cell: mechanisms of sperm chemoattraction in laminar shear flows

J.A. Riffell and R.K. Zimmer

Olfactory investigation of conspecific odors in the opossum

Monodelphis domestica

I. Zuri, W. Su and M. Halpern

Rabbit pups can orient to the nest by smell from birth

R. Hudson, E. Garay-Villar, M. Maldonado and G. Coureaud

Prolonged exposure to social odors alters subsequent social interactions in crayfish

D.A. Bergman and P.A. Moore

Modulation of olfactory acuity in mice: effects of stimulus concentration

T.A. Cleland and V.A. Narla

Configurational and non-configurational interactions between odorants in binary mixtures

C. Linster, C. Wiltout and S. Dogra

Symposium: In Sync: Temporal Coding & Encoding Time in the Olfactory System

In sync: temporal coding and encoding time in the olfactory system

T.A. Christensen and J.T. Caprio

Synchronous activity in the visual system: history and current status

C. Gray

Learning about odors with oscillations and waves

A. Gelperin

Spatio-temporal dynamics of receptor neuron input to the mammalian olfactory bulb

H. Spors, M. Wachowiak, L.B. Cohen and R.W. Friedrich

Central encoding of olfactory information through transient, non-oscillatory synchronization of neural ensembles

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

Posters: Olfactory Neurogenesis & Cell Death

Matrix metalloproteinase expression in the olfactory epithelium

T. Tsukatani, H. Fillmore, H. Hamilton, E. Holbrook and R.M. Costanzo

Biochemical characterization of cell surface antigen of globose basal cells

W. Jang and J.E. Schwob

Quiescent globose basal cells are present in the olfactory epithelium

X. Chen and J.E. Schwob

Heme oxygenase-1 and heme oxygenase-2 have different roles in the regeneration of olfactory receptor neurons after detergent ablation

Y. Tu, J. Chen, C. Moon and G.V. Ronnett

Nitric oxide induces cell proliferation during the neurogenesis of rat olfactory epithelium *in vitro*

L. Sülz, A. Mackay-Sim, F. Ferón, R. Iturriaga and J. Bacigalupo

Cell proliferation and growth in *Manduca sexta* antennal imaginal discs

K.A. Fernandez, R.P. Kobres and R.G. Vogt

Functional aspects of neurogenesis in the adult olfactory bulb

O. Belluzzi, M. Benedusi, J. Ackman and J.J. Loturco

Neurogenesis in the central olfactory pathway of adult decapod crustaceans: identification of neuroblasts

M. Schmidt

PACAP inhibits ORN apoptosis and reduces transient K current through different intracellular pathways

P. Han, C.C. Hegg and M.T. Lucero

Apoptosis in the vomeronasal sensory epithelium in adult rats

C. Jia and M. Halpern

Inhibition of orn apoptosis in the bax knockout mouse

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

Cellular senescence in human olfactory cultures

R. Peoples, K. Patel, G. Gomez and N. Rawson

Posters: Development of Gustatory Systems

Persistent signals from the notochord enhance embryonic taste bud development

L.A. Barlow and D.W. Calabrese

The role of epithelial-mesenchymal interactions in the development of murine taste papillae

C.J. Yuskaitis and L.A. Barlow

Alteration of fungiform papilla pattern induced by brief disruption of Shh signaling

H.X. Liu, D.K. Maccallum and C. Mistretta

Expression of BDNF, NGF and PGP 9.5 in taste buds following glossopharyngeal nerve section in mice

C.L. Yee and T.E. Finger

Epithelial overexpression of BDNF and NT4 each produces distinct spatial patterns of altered chorda tympani innervation

G.F. Lopez and R.F. Krimm

Effects of sodium channel blockers on neurotrophin-induced neurite outgrowth in embryonic trigeminal ganglion

L. Bai, D. Maccallum and C. Mistretta

BDNF gene replacement reveals multiple mechanisms for establishing neurotrophin specificity during sensory nervous system development

C.A. Nosrat, K. Agerman, J. Hjerling-Leffler and P. Ernfors

Golgi analysis of neurons in the nucleus of the solitary tract of neonatal chorda tympani transected rats

S.I. Sollars and P.E. Engelhardt

Posters: Gustatory Processing**Comparison of temporal profiles of single fiber responses in chorda tympani and glossopharyngeal nerves in C57BL/6J mice**

Y. Danilov, V. Danilova and G. Hellekant

Evoked responses to electrical stimulation of the glossopharyngeal nerve in the nucleus of the solitary tract in the rat

R.M. Hallock and P.M. Di Lorenzo

A simple model of a taste-responsive cell in the brainstem predicts the effects of adaptation

P.M. Di Lorenzo and R.M. Hallock

Characterization of efferent and afferent projections of CTA-induced FLI cells in ints

K.J. Spray and I.L. Bernstein

Some rostral NST neurons that express Fos after taste nerve stimulation are PBN-projecting neurons

T. Harrison, P. Rajappa and L.B. Smith-Adams

***In vivo* intracellular recording of gustatory neurons in hamster solitary nucleus**

C.S. Li, C.X. Li, R.S. Waters and D.V. Smith

Posters: Gustatory Processing**Projections of NST nitrergic neurons**

S.P. Travers and C. Shiroor

Morphology of the rat parasympathetic secretomotor neurons controlling the parotid and Von Ebner's salivary glands

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

Biophysical and morphological properties of brainstem parasympathetic neurons controlling Von Ebner's glands

H. Fukami, D.J. Chiego Jr and R.M. Bradley

Taste, texture and temperature representation in the primate rostral insular and frontal opercular cortex

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

Otitis media influences body mass index by interacting with sex, age, and taste perception

D.J. Snyder, V.B. Duffy, A.K. Chapo, H.J. Hoffman and L.M. Bartoshuk

Posters: Sweet Taste**Novel transduction pathway for the artificial sweetener, acesulfame-K, potentially utilizes a TRP mediated chloride current**

F. Zhao, S. Lu and S. Herness

Starch-based flavor films: a novel method for whole mouth stimulation with precise stimulus amounts

L.J. Flammer, J. Sondrup, B. Grainger, M. Alvarez-Reeves and B. Green

Sweet and sour preferences in young children and adults: role of repeated exposure

D. Liem, J. Van Den Elshout, K. Lam and K. De Graaf

Individual differences in sweet preferences across the lifespan

M.Y. Pepino, J.M. Kennedy, M.P. Carrier and J.A. Mennella

Apparent specific volumes (ASVS) of cyclamates and other sulfamate sweeteners

K.A. Haywood, W.J. Spillane, G. Hanniffy, C. Coyle and G.G. Birch

Posters: Bitter Taste**Solution properties and the role of water in the inhibition of bitterness in mixtures of sweet and bitter molecules**

M. Portmann, V. Aroulmoji, J. Liu and M. Mathlouthi

Bitterness inhibition of binary mixtures of bitter compounds by sodium salts

T.M. Canty, R.S. Keast and P.A. Breslin

Perception of bitterness from capsaicin, piperine and zingerone

B. Green and J. Hayes

Sensitivity for PROP and basic tastes in young and elderly male and female subjects

J. Mojet

Genetic studies of ptc taste in humans

D. Drayna, U. Kim, E. Jorgenson, N. Risch, H. Coon and M. Leppert

PROP bitterness associates with dietary fat behaviors and risk for cardiovascular disease (CVD) in middle-aged women

H.L. Hutchins, N.A. Healy and V.B. Duffy

Posters: Trigeminal Chemoreception & Irritation**Real-time monitoring of nasal mucosal pH during CO₂ stimulation: a pilot study**

P.C. Avila and D.J. Shusterman

Carbonic anhydrase gene expression in the human nasal mucosa: a pilot descriptive study

A. Tarun, B. Bryant and D.J. Shusterman

Identification of trigeminal subpopulations differing in their P2X-receptor expression

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

Lack of quinine-evoked activity in rat trigeminal subnucleus caudalis

C. Simons, Y. Boucher and E. Carstens

Trigeminal responses to bitter-tasting substances applied to the nasal cavity

W.L. Silver, H. Alimohammadi, K.T. Anderson, B. Bottger, A. Hansen and T.E. Finger

Contribution of vanilloid receptor-expressing fibers to overall trigeminal nerve chemosensitivity

H. Alimohammadi and W.L. Silver

Investigation of the central topology of sensory trigeminal fibers innervating the nasal mucosa

N. Damann, R. Klopffleisch, J.P. Teifke, B. Klupp, H. Hatt, T.C. Mettenleiter and C.H. Wetzel

Activation of brain stem neurons by irritant chemical stimulation of the throat assessed by c-fos immunohistochemistry

J.M. Cuellar, Y. Boucher, C.T. Simons, S. Jung, M. Iodi Carstens and E. Carstens

Assessment of variation in nasal submucosal blood flow using laser-doppler flowmetry with rhinostomometry

C. Konnerth, R. Opiekun, M. Gould and P. Dalton

Chemesthesis from alkaline dusts: dissolution in mucus and course of sensation

W.S. Cain, A.A. Jalowayski, M. Kleinman, R. Schmidt, B.K. Hillen, K. Magruder, B.R. Lee and B.D. Culver

Effect of saliva composition on texture perception of mayonnaise

L. Engelen, P.A. Van Den Keybus, R.A. De Wijk and F. Bosman

Assessment of thresholds for trigeminally mediated sensations

J. Frasnelli and T. Hummel

Quantitative and qualitative stimulus interactions among nasal mucosal irritants

D.J. Shusterman

Development of an ocular exposure device for detection of irritation thresholds: the tide system

R.E. Opiekun, R. McDermott and P. Dalton

Posters: Sensory Evaluation & Consumer Research**The effects of odor on weight perception**

E.T. Allen, A.R. Hirsch, A.M. Busse and J.R. Hoogeveen

Teenage ability to discriminate caffeine in commercial soda

A.R. Hirsch, H.H. Lu and A. Ma

Effects of odorant administration on objective and subjective measures of sleep quality, post-sleep mood and alertness, and cognitive performance

B. Raudenbush, J. Koon, J. Smith and P. Zoladz

Treating used mushroom 'soil' to control odors during composting

C.J. Wysocki, P.H. Heinemann, R.E. Graves, D.M. Beyer, J. Louie, J.J. Kim and G. Preti

Slides: Human Psychophysics: Taste and Trigeminal**Inhibition of sweet taste by zinc**

R.S. Keast, T.M. Canty and P.A. Breslin

Immediate and delayed taste contrast in younger and older adults

S.M. Specht, K.F. Alberico, J.D. Maher and L.E. Mastrangelo

Temporal processing of taste mixtures limits the identification and order of perception of components

D.G. Laing, K. Marshall, A. Jinks, J. Effendy and I. Hutchinson

Degree of dose addition in chemosensory detectability of mixtures: a window into the breadth of chemical tuning in chemoreception

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

Time-intensity ratings of nasal irritation from carbon dioxide

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

Symposium: Hanging by a Thread: Scaffolds in Signal Transduction**Targeting and scaffolding of epithelial receptors and ion channels**

S.L. Milgram

A cholesterol regulated PP2A/HePTP complex with dual specific ERK1/2 phosphatase activity

R.G. Anderson

Molecular scaffolds and interacting proteins affect ion channel function in the olfactory system

D.A. Fadool

Posters: Chemical Ecology**Escapin: an antipredator protein in the defensive secretion of *Aplysia californica***

P.M. Johnson, H. Yang, P.C. Tai and C.D. Derby

Feeding responses to selected tree species and phytochemicals by gypsy moth larvae, *Lymantria dispar* (L.)

V.D. Shields, B.P. Broomell, E.J. Rodgers, J.O. Salako, L.K. Dodson, K.T. Agbasi

CO₂ emission by *Datura* flowers and its significance for foraging *Manduca sexta* moths

C. Thom, P.G. Guerenstein, E. Yepez, W.L. Mechaber, J. Vanharen, J.G. Hildebrand and D. Williams

Carbohydrate sensitivity of crayfish (*Procambarus clarkii*) leg chemoreceptor cells

F.S. Corotto and M.J. Fant

Growing crayfish on different diets alters subsequent foraging decisions: the impact of detritus and fish diets on chemosensory decisions

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

The effects of the herbicide metolachlor on agnostic behavior in the crayfish *Orconectes rusticus*

M.E. Cook and P.A. Moore

The scent of speciation: peripheral chemoreception in the *Rhagoletis* species complex

S.B. Olsson, C.E. Linn Jr and W.L. Roelofs

Human skin odors

G. Preti, R. Bazemore, J.J. Leyden, A. Foglia, J.M. Smith and A.I. Spielman

Posters: Olfactory CNS Processing**Dendritic calcium plateau potential in juxtglomerular cells in the rat olfactory bulb**

Z. Zhou, W. Xiong, W.R. Chen, M.L. Hines and G.M. Shepherd

Spontaneous activity of mitral cells in the rat and mouse

R. Nica, T.G. Mast and E.R. Griff

Pre- and post-synaptic patterns of bulbar activation following odor stimulation of the zebrafish olfactory epithelium

P. Deng, B. Bryner and W.C. Michel

Low-threshold calcium spikes in turtle olfactory bulb granule cells

G. Pinato and J. Midtgard

Sexually dimorphic and isomorphic features exhibited by some main olfactory bulb glomeruli

M.L. Schaefer, A.M. Oliva and D. Restrepo

Rhinotopy in the larval stage of the sea lamprey, *Petromyzon marinus*

B.S. Zielinski, W.J. Arbuckle and A.E. Firby

Ultraviolet (UV) light modifies salamander olfactory epithelial (OE) and olfactory bulb (OB) responses to odorant stimuli

M. Cheung and J.S. Kauer

I_H modulation of granule cell function in the mouse main olfactory bulb

J.L. Aungst, P.M. Heyward, A.M. Hayar and M.T. Shipley

Neural basis for interglomerular circuits in the main olfactory bulb

A.C. Puche, J.L. Aungst, P.M. Heyward, F. Erdelyi, G. Szabo, S.V. Karnup and M.T. Shipley

Selective activation of Ca influx through NMDA receptors in the mitral cell glomerular tuft

W. Xiong and W.R. Chen

Are glutamate spillover and NMDA autoceptors the key mechanism for glomerulus-associated neuronal synchrony?

W.R. Chen, W. Xiong and Z. Zhou

Presynaptic inhibition modulates the amplitude and time course of the odorant elicited input to the mouse olfactory bulb

D. Vucinic, L.B. Cohen and E. Kosmidis

Is energy not a concern for bulbar activity?

F. Hyder

Characterization of the synaptic properties of olfactory bulb projections

A. McNamara, T.A. Cleland and C. Linster

Rate-encoding versus temporal-encoding of neural activity in human primary olfactory cortex

B.N. Johnson, J.D. Mainland, M. Bensafi, R.M. Khan, E. Bremner and N. Sobel

Coordinated synaptic mechanisms underlie cortical olfactory adaptation

A.R. Best and D.A. Wilson

Modulation of olfactory cortex function by cortical association fibers: intracellular analysis *in vivo*

H.L. Gilmore, J.S. Stripling

Impaired LTP in olfactory cortex of mice lacking the fragile X mental retardation protein

J. Larson

Cerebellar role in olfaction: concentration dependant sniff modulation

J.D. Mainland, C. Telles, N. Amin, B.N. Johnson, E.A. Bremner, M. Bensafi, R.M. Khan, R.B. Ivry and N. Sobel

Posters: Retronasal Olfaction**The effect of learning modality on the retronasal identification of odors in odor-taste mixtures**

F. Wilkes, D.G. Laing, A. Jinks and I. Hutchinson

Modeling olfactory perception with a perception-based template improves fMRI data processing

B. Cerf-Ducastel and C. Murphy

Time-quality tracking of retronasal and orthonasal odorant pairs

K. Chaudhry and B.P. Halpern

Retronasal olfactory intensity: associations with taste

V.B. Duffy, A.K. Chapo, H.L. Hutchins, D. Snyder and L.M. Bartoshuk

Orthonasal versus retronasal odorant administration differentially affects athletic performance, mood, and workload

P. Zoladz, B. Raudenbush, R. Fronchoski and N. Price

Ortho- and retronasal perception of odors: a study based on event-related potentials

T. Hummel and S. Heilmann

Comparison of orthonasal and retronasal perception of non-food odors: a functional MR imaging study

J.C. Gerber, D. Small, S. Heilmann and T. Hummel

Retronasal presentation of a food odor preferentially activates cortical chemosensory areas compared to orthonasal presentation of the same odor and retronasal presentation of a nonfood odor

G.C. Léger, T. Hummel, D.B. Conley, E.Y. Mak, K. Simmons and D. Small

Retronasal olfaction in nasal polyposis

B.N. Landis, R. Giger, M. Hugentobler, T. Hummel and J. Lacroix

Posters: Perception of Mixtures & Multimodal Stimuli**Odor suppression in binary mixtures**

L. Cashion, A. Livermore and T. Hummel

Effects of perceived and imagined odors on taste detection

J. Djordjevic, K. Abrol, J. Boyle, R. Zatorre and M. Jones-Gotman

Odor-induced changes in taste perception

J. Boyle, J. Djordjevic, K. Abrol, E. Perreau, Z. Lakdawalla, R. Zatorre and M. Jones-Gotman

Color enhances fruitiness

D. Zellner and B. Koza

Odor and taste interaction on olfactory evoked potentials

B. Kettenmann, C. Mueller, C. Wille and G. Kobal

Flavor expectations

T.L. White and J. Prescott

Integration of taste and orally presented odor

J.F. Delwiche and A.L. Heffelfinger

Images of desire: fMRI and food craving

M.L. Pelchat and J.D. Ragland

Neural correlates of chemosensory integration in humans studied with fMRI

J.L. Voss, E.Y. Mak, K.B. Simmons, T.B. Parrish and D. Small

Bitter-sweet stimulus antagonism in the peripheral gustatory system

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

Amiloride blocks NaCl inhibition of CT responses to quinine

P.E. Gordon, M.E. Frank and B.K. Formaker

Analytic nature of taste mixture interactions: contributions of PROP status

J.H. Yiee, V.B. Duffy and L.M. Bartoshuk

Discriminability of tastes within foods in PROP taster groups

J. Prescott and J. Soo

Posters: Aging**Bioinformatics analysis of gene expression in the olfactory–nasal mucosae of senescence-accelerated mice**

T. Getchell, C.P. Green, X. Peng, A. Stromberg, K. Chen, M. Mattson and M.L. Getchell

Age-related apoptosis in rat olfactory sensory neurons

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

Age-related changes in olfactory performance: sensory, cognitive and respiratory factors

T. Geisler, F. Hübener and M. Laska

Apolipoprotein E4 positive individuals exhibit greater decline in odor identification than in odor threshold or DRS scores

R.M. Calhoun-Haney, J. Balie, V. Zizak, E. Ramage, M. Dulay and C. Murphy

Olfaction assessment in Cuban–American adults using the University of Pennsylvania smell identification test

D.J. Lee, R.L. Doty, B.L. Lam, O. Gomez-Marin and D. Jane

Effect of anticholinergic medications on taste, smell, and other senses as well as cognition in the elderly

S.S. Schiffman, A.M. Kondor and J. Zervakis

Taste and odor thresholds in healthy middle-aged and elderly participants over an eight year time span

E. Ramage, R.M. Calhoun-Haney, V. Zizak, E. Pirogovsky, J. Bailie, K. Espineli and C. Murphy

Olfactory and trigeminal chemosensory interaction in the normosmic elderly

D. Kurtz and J. Newlon

The influence of aging on trigeminal chemoreception in the normosmic elderly

J.W. Newlon and D. Kurtz

Age-related changes in bitter and sweet sensations may influence dietary behaviors

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

Slides: Functional Organization of Gustatory Systems

Structure–function relations of bitter taste receptors

B. Bernd, T. Hofmann, D. Krautwurst, W. Meyerhof

Knockout mice for taste signal transduction studies

M. Rong, W. He, K. Yasumatsu, Y. Ninomiya, R.F. Margolskee and S. Damak

Functional interactions between taste papillae: a single unit study in the hamster

A. Vandenbeuch, A. Pillias and A. Faurion

Organization and plasticity of gustatory nerve terminal fields revealed by triple fluorescent labeling

O.L. May and D.L. Hill

Differential response to familiar and unfamiliar taste in the gustatory cortex of the freely behaving rat

A. Bahar, Y. Dudai and E. Ahissar

Taste information in the primate orbitofrontal cortex

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

Dissociation of human brain regions responding to taste intensity versus taste affect using functional magnetic resonance imaging

M.D. Gregory, E.Y. Mak, T.B. Parrish and D. Small

Gustatory coding of taste intensity in the human amygdaloid complex

D. Small, M. Gregory and T.B. Parrish

Symposium: Interplay of Olfaction & Emotion Systems

The anatomy of emotion in olfaction

L.M. Kay

Olfaction: a playground for sensation, emotion and cognition

P. Dalton

Lessons from the emotion lab

J. Haviland-Jones

Emotional odors and the final common path

T.S. Lorig

Neuroimaging the dynamic interplay of emotion and olfaction

D.H. Zald

Emotional olfactory stimuli: from unconscious to conscious processing

M.K. McClintock

Posters: Animal Behavior: Tracking and Orientation

The consequences of sperm chemoattraction for fertilization success

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

Pre- and post-odor flicking behavior in the crayfish, *Orconectes rusticus*, measured at different flow speeds

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

Identification of chemosensory sensilla activating antennular flick behavior in the caribbean spiny lobster, *Panulirus argus*

M. Fox, S. Mehta and P.C. Daniel

Crayfish response to complex odor signals

M. Wolf, R. Voigt and P.A. Moore

Distinction between the orientation mechanisms of rheotaxis and chemotaxis in the crayfish through a behaviorally selective lesion

S. Ramsey, K.E. Kraus-Epley and P.A. Moore

Chemically mediated search behavior of goldfish to food and pheromonal odors

M.L. Sherman and P.W. Sorensen

Posters: Olfactory Transduction

Electrophysiological investigation and effect of fast release of caged molecules on olfactory sensory neurons isolated from mice

L. Lagostena and A. Menini

Live cell imaging of Ca^{2+} during the chemoattractant off-response in *Paramecium*

W.E. Bell, M.H. Green and J. Van Houten

Volatile anesthetics may interact directly with olfactory receptors in the rat

Z. Peterlin, A. Kini, Y. Ishizawa, X. Zhang, R. Eckenhoff and S. Firestein

The interaction of OMP and Bex reveals an OMP dimer

J. Koo and F.L. Margolis

G-protein like immunoreactivity on the chelae and aesthetasc hairs of the lateral antennules in crayfish (*Orconectes rusticus*)

R.M. Belanger, P.A. Moore and B. Zielinski

Molecular cloning of a new GABA receptor subunit from the lobster olfactory organ

B. Hollins and T.S. McClintock

Modeling diffusion of second messengers in olfactory cilia

R. Flannery, D. French and S.J. Kleene

Effects of cyclic AMP on cultured olfactory receptor neurons and on olfactory sensilla of the hawkmoth *Manduca sexta*

M. Stengl, C. Flecke and J. Dolzer

Cyclic AMP-independent and cyclic AMP-dependent olfactory transduction in *Xenopus laevis* tadpoles

I. Manzini and D. Schild

Roles of cyclic nucleotide and inositol 1,4,5-triphosphate pathways mediating responsiveness to food and pheromonal odors in goldfish olfactory receptor neurons

K. Sato and P.W. Sorensen

Functional and stable reconstitution of an olfactory receptor-activated cAMP signalling pathway in human HeLa cells

E. Chirokova, K. Schmiedeberg, P. Bedner, H. Niessen, K. Willecke and D. Krautwurst

Modulation of the native and recombinant olfactory cyclic nucleotide-gated channel by membrane phosphoinositides

A. Zhainazarov, M. Spehr, C. Wetzel, H. Hatt and B.W. Ache

Cation-dependent rectification in the lobster olfactory sodium-gated cation channel

Y.V. Bobkov and B.W. Ache

Comparison of I_H -channels from invertebrate olfactory receptor neurons

G. Gisselmann, Y.V. Bobkov, T. Marx, C. Wetzel, E.M. Neuhaus, B. Gamerschlag, B.W. Ache and H. Hatt

Targeting vectors for HCN1 and HCN4 knock out mice and investigation of distribution patterns of HCN isoforms in rodent nasal epithelium

A. Pickenhagen, G. Gisselmann, C. Wetzel and H. Hatt

Recordings of Ca^{2+} -dependent K^+ channels activated by odors in 'on cell' and excised toad ciliary patches; complementary lipid bilayer studies

R. Delgado, K. Castillo, D. Wolff and J. Bacigalupo

Mitochondrial influence on calcium and action potential firing rate in olfactory receptor neurons of *Rana pipiens*

L. Buntinas, Y. Koutalos and D. Restrepo

Characterization of the plasma membrane Ca-ATPases in mouse olfactory and VNO epithelia

M. Cusick, R. Delay and J. Van Houten

Spatial relations between olfactory sensory neurons revealed in gene-targeted mice

X. Grosmaître, M. Ma, A. Vassalli, P. Mombaerts and G.M. Shepherd

Optical imaging of intracellular Cl^- in mouse olfactory neurons, dynamic changes with odor stimulation

R. Delay and T.J. Verret

P2Y receptors in an olfactory cell line (*Odora*)

K. Washburn, G. Liu, T. Turner and B.R. Talamo

Gonadotropin-releasing hormone modulates the voltage-activated sodium current in necturus olfactory neurons

W. Zhang and R. Delay

Posters: Olfactory Coding in the Periphery**Evolution of the olfactory code in the *Drosophila melanogaster* subgroup**

M. Stensmyr and B. Hansson

Neural tracing of olfactory sensory neurons in land snail (*Eobania vermiculata*).

A. Mazzatenta, P. Pelosi and A. Cellerino

Chemo- and mechanosensory responses by crayfish (*Orconectes rusticus*) antennae

L. Urban, R. Voigt and P.A. Moore

Sensory neurons in the goldfish olfactory epithelium respond during application of a great variety of stimuli

H.P. Zippel, B. Albrecht, H. Dolle, M. Foitzik, A. Hamadeh, Möller-de Beer and R. Köhnke

Excitatory and suppressive responses of catfish olfactory receptor neurons in highly purified water

J. Dolensek, P. Miklavc and T. Valentincic

A cross-species comparison of metabolic markers in olfactory epithelium

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

Structure–function correlations of transduction in olfactory receptor neurons in catfish

S.H. Rolen, A. Hansen, K.T. Anderson, A. Nikonov, T.E. Finger and J.T. Caprio

Pheromone responses in olfactory receptor neurons of sea lampreys (*Petromyzon marinus*)

J. Teeter, F. Lischka and W. Li

Pharmacological profile of mammalian receptors for octanal

R.C. Araneda, Z. Peterlin and S. Firestein

Olfactory receptor antagonism between odorants

Y. Oka, M. Omura, H. Kataoka and K. Touhara

High throughput imaging of olfactory neuronal responses to single compounds and mixtures

G. Adamek, B. Bryant and N. Rawson

Electrophysiological analysis of arrestin function in peripheral olfactory signaling in insects

C.E. Merrill and L.J. Zwiebel

Arrestin function in olfactory behavioral outputs in *Drosophila*

T.M. Sherertz, C.E. Merrill and L.J. Zwiebel

Posters: Neurotransmitters in the Olfactory CNS**Granule cell-mediated lateral inhibition can be driven by metabotropic glutamate receptors in the main olfactory bulb**

T. Heinbockel and M. Ennis

Distribution of glutamate receptor subunits in the olfactory bulb of zebrafish, *Danio rerio*

C.L. Deyoung and C.A. Byrd

Functional expression of NMDA receptors in the developing olfactory system of zebrafish

Y. Sakata and W.C. Michel

NMDA R1 subunit expression in mouse olfactory bulb

E.M. Josephson and A.P. Jennart

A diversity of functional ionotropic glutamate receptors on the mitral cell somatodendritic membrane

G. Lowe

The efficacy of synaptic transmission in the olfactory bulb: relation to AMPA receptor diversity and modulation

L.J. Blakemore and P.Q. Trombley

Action potentials facilitate communication between proximal and distal dendritic compartments in olfactory bulb granule cells

S. Tia and B.W. Strowbridge

Antennal lobe neurons use nitric oxide for processing olfactory input in the moth *Manduca sexta*

C. Wilson, T.A. Christensen and A. Nighorn

Molecular analysis of the calcium-dependent regulation of cGMP formation in the antennal lobe of *Manduca sexta*

C. Collmann and A. Nighorn

Characterization of an immortalized putative dopaminergic (DA) olfactory bulb (OB) cell line

S. Saino, J.H. Son, H.S. Chun and H. Baker

Neuroinhibitory actions of taurine in the main olfactory bulb

I. Kratskin, M. Benedusi and O. Belluzzi

Putative GABAergic olfactory juxtaglomerular cells from GAD–GFP transgenic mice have properties similar to periglomerular cells

Z. Shao, A.M. Hayar, A.C. Puche, F. Erdelyi, G. Szabo and M.T. Shipley

Task-dependent choline concentration in primary olfactory cortex of the human

C.M. Zelano, L. Kaiser, J.D. Mainland, R.M. Khan, B.N. Johnson, M. Bensafi and N. Sobel

Posters: Neural Plasticity & Regeneration**Recovery of the P2 odorant receptor subtype after nerve transection**

J. Yoshida-Matsuoka, T. Tsukatani, M. Matsuoka and R.M. Costanzo

A morphological and histochemical study of the response to peripheral deafferentation in the adult zebrafish olfactory bulb

B.R. Heard and C.A. Byrd

Unilateral chorda tympani nerve section induces a bilateral increase in lingual macrophages in control-fed but not Na⁺-restricted rats

L.P. McCluskey

Nerve cut induced decrease of chorda tympani terminal fields in the NTS of adult control and sodium-restricted rats

B.K. Cheon and D.L. Hill

Symposium: AChemS-25 Anniversary Symposium: Perspectives on the Chemical Senses**Olfaction over 25 years: how have things changed, what might they tell us?**

J.S. Kauer

Twenty-five years of defining taste specificity

M.E. Frank and T.P. Hettinger

25 years of social communication: the relevance of behavioral studies to advances in the chemical senses

N.J. Vickers

Slides: Olfactory Function in Health & Disease**Modeling nasal airflow and odorant transport: implications for odor perception**

K. Zhao, P.W. Scherer, S.A. Hajiloo and P. Dalton

fMRI study of human olfaction and normal aging at high field

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

Odor-induced fMRI brain activation in the healthy elderly and AD patients

M. Tabert, M. Albers, E. Zarahn, D. Zimora, T. Lorig, S. Small, R. Doty and D. Devanand

Prognosis for olfactory dysfunction: the good, the bad, and the ugly

E.D. Pribitkin, B.J. Cowart, D. Rosen and C.T. Klock

APOE-ε4 is associated with intrusion errors in episodic recognition memory for olfactory but not visual stimuli

P.E. Gilbert, P. Dean, E. Hajducko and C. Murphy

Multiple chemical supersensitivity—the mechanisms of action

I. Savic, H. Berglund and I. Hillert

Effects of the Apoe E4 allele on olfactory function in Down syndrome

M. Sliger, T. Lander and C. Murphy

Differential loss of retronasal relative to orthonasal olfaction in a clinical population

B.J. Cowart, B.P. Halpern, D. Rosen, C.T. Klock and E.D. Pribitkin

Symposium: Patterning in Olfactory Systems: How Much is Pre-specified?**Patterning in olfactory systems: how much is 'prespecified'?**

L. Tolbert

Interdependence and coordination of axons and odorant receptor genes

A. Chess

The simple but vertebrate-like adult olfactory system of *Drosophila* derives from a miniature larval system with no more than 21 receptor neurons

R.F. Stocker, F. Python, G. Jefferis, E. Marin and L. Luo

Primary olfactory axons can sort out and converge independently of the olfactory bulb in mouse

J.A. St John and B. Key

An olfactory bulb-like structure develops in the absence of olfactory sensory input in mouse

L. Lopez-Masaraque, R. Rivera, C. García, F. Valverde and J.A. De Carlos

Posters: Olfactory Receptor Genes**Human sperm chemotaxis: functional role of a previously undescribed testicular odorant receptor**

M. Spehr, G. Gisselmann, A. Poplawski, J.A. Riffell, C.H. Wetzel, R.K. Zimmer and H. Hatt

An odorant receptor from *Anopheles gambiae* that is highly conserved across insect taxa

R.J. Pitts, A.N. Fox, A.C. Melo and L.J. Zwiebel

Identification of candidate olfactory receptors of the moth *Heliothis virescens*

J. Krieger, K. Raming, Y.M. Dewer, S. Bette, S. Conzelmann and H. Breer

A comparative study of olfactory receptors in sea turtles, land turtles, and alligator

M.L. Vieyra and R.G. Vogt

OR37-receptors: a unique subfamily of olfactory receptors

J. Strotmann, R. Hoppe, S. Conzelmann and H. Breer

Understanding the relationship between sequence variation and odorant recognition in olfactory receptors

M.L. Schlador, M. Walker and B.J. Trask

Expression of rat odorant receptor mRNA in non-olfactory tissues

E. Weiler

Functional analysis of stably expressed mammalian olfactory receptors

S. Bieri, A. Valero, J. Slack and B. Schilling

The orphan receptor guanylyl cyclase expressed in olfactory sensory neurons of rodents is a pseudogene in human: assignment to chromosome band 11q14

G. Nagatani, K. Wu and H.J. Fülle

Localization of olfactory receptor mRNA in human olfactory receptor neurons

N. Rawson, K. Yee and C. Hahn

Posters: Olfactory CNS Coding**Space, time and odor coding I: odor identity within the context of context in *Manduca sexta***

M. Cheich, K.C. Daly and B.H. Smith

Space, time and odor coding II: high dimensional euclidian distance as a measure of odor discriminability and time to discrimination across populations of antennal lobe units in *Manduca sexta*

K.C. Daly and B.H. Smith

Odor responses of projection neurons innervating morphologically identified glomeruli in the antennal lobe of the moth *Manduca sexta*

C. Reisenman, T.A. Christensen and J.G. Hildebrand

Physiological and morphological characteristics of CO₂-sensitive neurons in the antennal lobe of the moth *Manduca sexta*

P.G. Guerenstein and J.G. Hildebrand

Genetic control of olfactory characteristics in male moths

N.J. Vickers

Whole-cell patch-clamp recordings from Kenyon cells in an *in vivo* preparation of the moth brain

M. Sjöholm and B. Hansson

Ensemble codes for contextual features of olfactory stimuli recorded with multi-electrode arrays in the moth antennal lobe

A. Dacks, T.A. Christensen, V.M. Pawlowski and J.G. Hildebrand

Male and female ferret anal scent gland secretions activate different clusters of glomeruli in the main olfactory bulb

S.K. Woodley, S. Sapute, Z. Lieberman, R. Coulter-Thurley and M. Baum

Changes in odor-evoked *c-fos* expression patterns elicited by operant conditioning in mouse olfactory bulb

C. Zhang, J. Arellano and D. Restrepo

A fovea in the nose: evidence for disproportionate mapping of the olfactory nose onto the main olfactory bulb of the hamster

T.A. Schoenfeld and T.K. Knott

Experience-induced olfactory bulb mitral/tufted cell receptive field plasticity

M.L. Fletcher and D.A. Wilson

Reproducibility (or lack thereof) in glomerular activations

I. Kida, F. Xu and F. Hyder

Spatial patterns of odor-evoked activity in piriform cortex change during development

K.R. Illig

Posters: Gustatory Transduction

Calcium pump isoforms in chemosensory transduction

L. Gannon-Murakami, J. Yano, M. Valentine, R.R. Preston, M. Zhukovskya and J.L. Van Houten

GPI anchored proteins and lipid rafts in chemosensory signal transduction

J. Yano, M. Valentine, S. Chandran, S. Weeraratne, S. Kasper, Y. Pan, R.R. Preston and J. Van Houten

Gustatory gene expression profiling

I. Nosrat, R. Farjo, M. Othman, A. Swaroop and C.A. Nosrat

Expression profiling of taste receptor cells

N.D. Lopez-Jimenez, E. Sainz, C.A. Blackwood, M.M. Cavenagh, J.F. Battey and S.L. Sullivan

Effect of Ni²⁺ on voltage-dependent Na⁺ current in morphologically identified cells of the bullfrog taste organ

T. Suwabe, K. Narita, K. Okuda-Akaban, M. Kubota and Y. Kitada

Rat taste buds express multiple members of the KCNK family of two-pore domain potassium channels

C.A. Burks, D.R. Hansen, S. Rao, W. Lin, S.C. Kinnamon and T.A. Gilbertson

Functional implications of differences in potassium channel expression among lingual taste buds

D.R. Hansen, D.O. Hoyal, C.E. Foley, J. Guenter, D.J. Johnson and T.A. Gilbertson

G proteins and adenylyl cyclases co-expressed in taste receptor cells

T. Abaffy, K. Trubey and N. Chaudhari

Comparison of the responses to different sweet and bitter stimuli in α -gustducin knockout (KO) and wild type mice (WT)

V. Danilova, S. Damak, J. Glendinning, R.F. Margolskee and G. Hellekant

CAP and cofilin-1 co-exist in taste cells expressing taste receptors

Y. Ishimaru, Y. Emori and K. Abe

A single cell view of taste sensation

L. Huang, L. Vo, M. Max and R.F. Margolskee

Posters: Development of Olfactory Systems

Electrophysiological properties of embryonic olfactory neurons in explant culture research

F. Lischka, A. Lamantia and N. Rawson

Unilateral naris closure and cell death in the nasal septum of the developing rat

P.C. Brunjes and D. Shurling

Horizontal basal cells contain potential stem cells for the olfactory epithelium

J. Roskams, J. Macdonald, B. Murdoch and L. Carter

Dynamic expression of developmental genes in the adult antenna of *Manduca sexta*

J.D. Bohbot and R.G. Vogt

Thyroid hormone-regulated nose genes during *Xenopus laevis* development

E. Walworth and G.D. Burd

Glia in the axon sorting zone of the moth primary olfactory pathway alter axon responses to subsequent glial encounters

L.A. Oland, C.T. Howard and L.P. Tolbert

Integrins in the developing olfactory system

M.K. Whitley, H.B. Treloar, A. De Arcangelis, E. Georges Labouesse and C.A. Greer

Asynchronous development of olfactory sensory projections

D. Zou, P. Feinstein, C.A. Greer, P. Mombaerts and S. Firestein

Tenascin-C is an inhibitory guidance molecule in the developing mouse olfactory bulb

H.B. Treloar, Y. Yang and C.A. Greer

Cadherins and catenins: expression in mouse olfactory pathway development

M.R. Akins and C.A. Greer

Microarray analysis of bone morphogenetic proteins (BMPs), receptors and modulators in the developing mouse olfactory bulb (OB)

M. Ukhanova, J. Margolis and E.L. Margolis

Neurite stability in the mouse olfactory system: the role of Nogo, p75 and RhoA

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

Posters: Salt & Sour Taste

Characterization of amiloride-insensitive sodium salt responses using patch clamp recording

J.T. Klein, C.A. Burks and T.A. Gilbertson

Identification of natriferic hormone responsive elements in taste cells: implications for the regulation of salt and water taste

T.A. Gilbertson, W. Chen, S. Rao and D.R. Hansen

Hamster chorda tympani responses to potassium are voltage-sensitive

B. Edgar, E. Proko, J. Stewart and R. Stewart

Voltage-sensitivity of hamster chorda tympani sodium responses

E. Proko, R. Greene, O. Russell, C. Hatzis, R. Spatzer and R. Stewart

Alteration of the tastes of salts by cathodal current

D. Do, H. Su, M.E. Frank and T.P. Hettinger

Expression of acid sensing ion channels in isolated human taste receptor cells

T. Huque, F. Lischka, A.I. Spielman, D.L. Bayley, J. Cao, R.S. Feldman and J.G. Brand

Acid-induced calcium responses in murine taste cells

T.A. Richter, E. Pereira and S.D. Roper

Relationship between intracellular pH and Ca²⁺ in fungiform rat taste receptor cells

V. Lyall, S.A. Malik, R.I. Alam, G.L. Heck and J.A. Desimone

Lingual surface potential (LSP) in humans

G.M. Feldman, G.L. Heck, C. Santos, R. Clary, V. Lyall, J.A. Desimone and A. Mogorosi

Posters: Umami Taste**Immunodetecting a candidate umami receptor, taste-mGluR4, in taste cells**

N. Chaudhari, E. Pereira, A.M. Landin and S.D. Roper

Responses to GMP and glutamate in taste receptor cells of rat fungiform papillae

T. Ogura, W. Lin and S.C. Kinnamon

Can rats discriminate between the tastes of IMP, GMP and monosodium glutamate?

T.M. Faes, T.C. Wifall, J.D. Mitzelfeld, A.M. Padillo and E.R. Delay

Discrimination between the tastes of sweet stimuli and monosodium glutamate in rats

B.R. Heyer, C.C. Taylor-Burds, J.D. Mitzelfeld and E.R. Delay

Gustatory evoked magnetic fields and perceptual characters of umami substance IMP

S. Saito, T. Kobayakawa and N. Gotow

Slides: Molecular Basis of Sweet Taste**Comparative analysis of the T1R taste receptor genes in primates**

X. Li, W. Li, K.J. Mascioli, A.A. Bachmanov, M.G. Tordoff, G. Epplé, G.K. Beauchamp and D.R. Reed

T1R receptors are expressed by type II taste cells in the mouse

T.E. Finger, K.T. Anderson, D. Bartel and C.L. Yee

Relative sensitivity to sucrose, glucose and glycine in selective inbred mouse strains

S. Eylam and A.C. Spector

Polymorphisms of the murine TAS1R3 gene assort with strain differences in orosensory responsiveness to low but not high concentrations of sucrose

J. Glendinning, M. Joon Young and I. Lin

Sweetener preferences of 129.B6-SAC congenic mice

M.L. Theodorides, X. Li, V.V. Botchkarev, G.K. Beauchamp and A.A. Bachmanov

Symposium: Presidential Symposium: Biology & Chemistry of Floral Scent**Introduction: the biology and chemistry of floral scent**

J.G. Hildebrand

Floral scent composition—strategies for component identification

C. Bicchì

Distinguishing signal from noise in complex floral fragrances: a biological perspective

R.A. Raguso

Coding floral odors in the insect brain

G. Galizia, H. Mustaparta and S. Sachse

Human responses to floral odors

B. Van Der Pers-King

Posters: Olfaction in Animal Behavior**Concanavalin A inhibits detection of D-carvone while WGA reduces detection of L-carvone**

S. Deutsch and R. Apfelbach

Reversible reduction of odor detection after trometamol application to the olfactory epithelium of rats

E. Weiler, C. Heisig and R. Apfelbach

Fetal odors remain in the mother's circulation after her pups are born

K. Yamazaki, M. Curran and G.K. Beauchamp

Discrimination of amino acid multimixtures in catfish

T. Valentincic, S. Kralj and V. Zgonik

Canine olfactory thresholds to N-amyl acetate measured naturalistically

D.B. Walker, P.J. Cavnar, J.L. Taylor, D.H. Pickel, J.C. Suarez, S.B. Hall and J.C. Walker

Adenoviral vector-mediated rescue of the OMP-NUL behavioral phenotype: enhancement of odorant sensitivity

S.L. Youngentob, M. Pyrski and F.L. Margolis

A new approach to communication in birds: structure and function of nasal anatomy

J. Yeh, K. Launer and J.C. Hagelin

Timing of *Manduca sexta* behavioral and physiological traits during wandering

R.P. Kobres, K. Fernandez and R.G. Vogt

Posters: Animal Behavior: Taste & Feeding**Murine taste preference tests: why only two bottles?**

M.G. Tordoff and A.A. Bachmanov

PROP and PTC taste sensitivity are distinct phenotypes in mice

T.M. Nelson, S.D. Munger and J.D. Boughter

Cetylpyridinium chloride's aversive taste to rats

L. Hallagan, S. Saperstein, S.J. St John

Determination of NaCl taste thresholds for developmentally NaCl-restricted rats

A.K. Thaw, E.C. Mann, S. Crooms and D.L. Hill

Gustatory detection of a free fatty acid, linoleic acid, by rats

D.N. McCormack, P. Herzog, K.L. Webster and D.W. Pittman

Threshold for the detection of ethanol solutions by the rat

J. Smith, M. Denbleyker, K. Ferrence and P. Smith

Linoleic acid alters licking responses to sweet, sour, and salt tastants in rats

P. Herzog, D.N. McCormack, K.L. Webster and D.W. Pittman

The relative strength of thermal cues in short-term feeding behavior

P.L. Smith and J.C. Smith

Behavioral and immunohistochemical studies for the conditioned temperature aversion

N. Sako, R. Ohashi, N. Sakai and T. Sugimura

Effects of astringents, tastants, and flavorants on oral texture

R.A. De Wijk, J.F. Prinz, L. Engelen and A.M. Janssen

The impact of ethanol and tobacco smoke on intranasal epithelium in the rat

J. Vent, S. Irwin, G. Haynatzki, M.J. Gentry-Nielsen, D.A. Leopold and R. Hallworth

Taste perception in mice bearing a human oral squamous cell carcinoma

J. Lee, M. Cha, S. Choi, Y. Moon and J. Jahng

Slides: Development of Chemoreceptor Cells**Neurotrophins alter sodium channel properties of embryonic trigeminal and geniculate neurons**

A. Grigaliunas, C. Mistretta, D.K. Maccallum and R. Bradley

Each sensory nerve arising from the geniculate ganglion (GG) expresses a unique fingerprint of neurotrophin receptor genes

A.I. Farbman, S.I. Sollars, N. Guagliardo and D.L. Hill

Retinoic acid and neurogenesis in postnatal rat olfactory epithelium

M. Asson-Batres and W.B. Smith

An inducible transcript expressed by reactive epithelial cells that proliferate lobster olfactory sensory neurons

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

Slides: Functional Organization of Olfactory Systems**Human specific loss of olfactory receptor genes**

G. Yoav, M. Orna, P. Svante and L. Doron

Posters: Oscillations & Synchronization in Olfaction**Generation mechanism of EOG oscillations in the rainbow trout**

N. Suzuki, M. Takahata and T. Shoji

Vomeropherins produce low-frequency calcium oscillations in human vomeronasal neurons

B. Winegar and L. Monti-Bloch

Reduced external calcium or potassium channel blockade evokes bursting in crayfish parasol cells

D. Mellon

Odor-induced synchrony occurs among catfish olfactory bulb neurons having similar odorant selectivities irrespective of their bulbar location within the amino acid chemotopic zone

A. Nikonov and J.T. Caprio

Persistent fast oscillatory activity in the rat olfactory bulb is mediated by chemical and electrical synapses *in vitro*

D. Friedman and B.W. Strowbridge

Odor-induced oscillations in rat olfactory bulb

J.W. Scott and L. Sherrill

Posters: Olfactometry & Gustometry**A temporal automated system for taste experiments**

A. Ashkenazi, J. Buckley, T. D'Alessandro, A. Dirubba, M. Fritz, R. Goodman and L.E. Marks

How to make and measure smells—practical lessons in olfactometry

R. Schmidt and W.S. Cain

Development of a precision olfactometer

L. Hastings and R.L. Doty

New technique in real-time monitoring of chemosensory (gas) stimulus for event-related potentials

T. Kobayakawa, H. Toda, H. Yamada and S. Saito

Improvements to an olfactometer for psychophysiological and fMRI studies of olfactory processes

T. Lorig, M. Gould and P. Dalton

Single-pass environmental chamber for quantifying human responses to airborne chemicals

J.C. Suarez, D.S. Warmath, K.P. Koetz, A.F. Hood, M.L. Thompson, M.S. Kendal-Reed, D.B. Walker and J.C. Walker

Posters: Vomeronasal Chemoreception**Human V1-subtype vomeronasal receptors**

L. Sangameswaran, D. Edwards, L. Tran and G. Raghu

Species-specificity in pheromone receptor loci?

R.P. Lane, T. Cutforth, R. Axel, L. Hood and B.J. Trask

Electrophysiological characterization of voltage-activated properties in vomeronasal neurons isolated from adult male and female mice

D. Dean, A. Mazzatenta and A. Menini

The role of GQ/11 in signal transduction in the vomeronasal organ

S. Miller, A. Napier and K. Wekesa

Immunohistochemistry of the canine vomeronasal organ

J.C. Dennis, J.G. Algier and E. Morrison

A 20 kDa protein component of male *Plethodon shermani* pheromone activates female *P. shermani* vomeronasal neurons

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

A proteomic analysis of mucosal proteins in the VNO duct of the asian elephant: continuing the hunt for pheromone binding proteins

D.R. Greenwood and L.E. Rasmussen

Relaxation of selective pressure on an essential component of vomeronasal transduction during primate evolution

E.R. Liman and H. Innan

Adult human vomeronasal epithelium express molecular markers of neuron-like activity

V. Diaz, A. Morales and A. Castell

Posters: Human Olfaction: Psychophysics**The long term effect of nasal dilators on nasal anatomy and olfactory ability**

G.D. Lyng, D.E. Hornung, D.A. Leopold, S.B. Irwin and J. Vent

Characterization of the Sniff Magnitude Test

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

The Sniff Magnitude Test: a sensory measure minimally influenced by cognitive factors

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

Contrasting activation of human brain by complex designed fragrances

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

Olfactory effects of environmental malodor

J. Bell and A.R. Hirsch

Olfactory performance and health status: a European survey

C. Rouby and T. Thomas-Danguin

Sniffing during formation of olfactory imagery

E. Bremner, B.N. Johnson, J.D. Mainland, N. Young, D. Aframian, M. Bensafi and N. Sobel

Supra-threshold evaluations of olfactory stimuli by PROP classified individuals

S.V. Kirkmeyer and B.J. Tepper

The relationship between the nasal cycle and preferred handedness

E.J. Stein, L. Brzuszkiewicz, A. Searleman and D.E. Hornung

Rating properties of odorants

S. Pouliot, J.L. Hudry and M. Jones-Gotman

Odor quality and quantity in cross-adaptation

C.B. Warren, R. Schmidt, P. Wise, E.H. Polak and W.S. Cain

Individual differences in human olfactory communication of emotions

D. Chen and M.K. McClintock

Olfactory differences between pregnant and non-pregnant women

D.A. Broman, J. Olofsson, M.J. Olsson and S. Nordin

A longitudinal study of food aversions and cravings in pregnant women

S. Nordin, D.A. Broman, J. Olofsson and M. Wulff

Effects of age, sex, and side of stimulation on chemosensory event-related potentials

M. Larsson, J.N. Lundstrom, J. Frasnelli and T. Hummel

Effects of stimulated nostril on olfactory event-related potentials

J. Olofsson, D.A. Broman, P.E. Gilbert, S. Nordin, P. Dean and C. Murphy

Olfactory evoked potentials during monorhinal versus birhinal stimulation with linalool

G. Kobal, C. Wille, C. Mueller and B. Kettenmann

Influences of ethanol ingestion on olfactory function: specific to ethanol odor

R.L. Doty, S.J. Patel and A. Bollhoefer

Slides: Functional Organization of Olfactory Systems**Pheromone coding by the mammalian main olfactory epithelium**

T. Leinders-Zufall, J. Ziesmann, A.C. Puche, R. Bock, W. Ma, M.V. Novotny and F. Zufall

Molecular organization of the mouse septal organ

M. Ma, C.L. Iwema, J. Liu, C.A. Greer and G.M. Shepherd

Mapping odor receptors to neurons

A.L. Goldman, D. Lessing, W. Van Der Goes Van Naters, C. Warr, M. De Bruyne and J.R. Carlson

The GR21A Receptor and carbon dioxide perception in *Drosophila*

M. De Bruyne, S. Schwarz, M. Wendt, B. Regnery, C.G. Galizia, A. Fiala, S. Diegelmann, E. Buchner and J.R. Carlson

High throughput microarray detection of olfactory receptor gene expression

X. Zhang, M. Rogers, X. Zhang, D. Zou, J. Liu, M. Ma, G.M. Shepherd and S. Firestein

Processing of odor blends in the insect antennal lobe

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

Functional organization of input to the mouse olfactory bulb glomerulus visualized with two-photon calcium imaging

M. Wachowiak and R.W. Friedrich

Global representation of chemical structures in the mouse olfactory bulb revealed by fMRI

F. Xu, N. Liu, I. Kida, R.L. Rothman, F. Hyder and G.M. Shepherd

Posters: Olfactory Receptor Cells**Effect of taurine suppression on the olfactory system of the mouse**

M. Witt, C. Roth, T. Hummel, U. Warskulat and H. Bidmon

New intracellular staining technique applied to *Drosophila* neurons

S. Wada and R. Kanzaki

Detecting changes of olfactory neuron activity

A. Blejec

Short-term culture of *Caenorhabditis elegans* chemosensory neurons

T. Nickell, N.K. Kleene and S.J. Kleene

The use of fresh postmortem human peripheral olfactory tissue for physiologic study

B. Murrow, K. Walton, R. Michaels, B. Jafek, S. Leonard and D. Restrepo

Inhibition of heat shock protein induction in mouse olfactory epithelium by *in vivo* administration of purinergic receptor antagonists

C.C. Hegg, K. Davis and M.T. Lucero

Posters: Histological Profiles in Peripheral Gustatory Systems**Immunocytochemical characterization of palate taste buds in mice**

L.M. Stone, L.S. Baker, R.F. Margolskee and S.C. Kinnamon

Mechanical stimulation releases serotonin from rat taste buds

I. Plonsky, J.E. Baur, E. Pereira and S.D. Roper

Radiation induced changes in histology and behavior in the SR90 taste loss model

G. Nelson, F. Ferraro, D. Coonfield and S. Kiefer

Immunohistochemical characterization of GABA and GAD in facial and vagal nerve innervated taste buds of channel catfish

M. Eram and W.C. Michel

Histochemical evidence for presynaptic ionotropic glutamate receptors on primary gustatory afferent terminals in goldfish

G. Huesa and T.E. Finger

Posters: Pheromones & Social Behavior**The generation and control of information currents to exchange social signals during conspecific fights in crayfish**

A. Martin, D.A. Bergman and P.A. Moore

Sex, dominance, and individual recognition signals in lobster hierarchies

K.E. Morschauser and J. Atema

Genome-wide analysis of pheromone-mediated gene expression in the honey bee

C.M. Grozinger and G.E. Robinson

The role of heliothine hairpencil compounds in female *Heliothis virescens* behavior and mating

K.N. Hillier and N.J. Vickers

Physiological and behavioural studies suggest the use of sex pheromones during reproductive activity of the round goby *Neogobius melanostomus*

A.J. Belanger, J. Petruniak, D. Gammon, L.D. Corkum, W. Li, A. Scott and B. Zielinski

Discrimination of semiochemicals by the chilean lizard *Liolaemus lemniscatus*: role of olfaction and vomerolfaction

A. Labra and E. Desfilis

Chemical exploration of conspecific odors in female opossums (*Monodelphis domestica*).

M. Halpern, K. Dombrowski and I. Zuri

Olfactory memory and individual recognition in golden hamsters

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

Accurate odor discrimination in the absence of odor preference in male vasopressin 1b receptor-KO mice indicates altered social motivation

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MHC-based mate choice in female rats

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Responses of female moose to fractionated urine of rutting male moose (*Alces alces gigas*)

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Socially relevant chemosensory stimuli selectively activate posterior medial amygdala

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Chemosensory stimulation of fos in medial amygdala reflects neural activation not synaptic enhancement

C. Blake, J. Westberry, S. Sirpal, D. Weinburg and M. Meredith

Olfactory sensitivity for androstenone in three species of nonhuman primates

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