ISSN 0379 864X Coden CHSED8

OXFORD UNIVERSITY PRESS

# hemical SENSES

Volume 23

Number 6

EBRU AChemS JASTS

December 1998



# **Executive editors**

B. Ache, Whitney Laboratory, University of Florida, 9505 Ocean Shore Blvd, St Augustine, FL 32086, USA

T.E. Finger, Department of Cellular and Structural Biology, University of Colorado Medical School, 4200 E. Ninth Avenue, B-111, Denver, CO, USA

K. Kurihara, Faculty of Pharmaceutical Sciences, Hokkaido University, Kita 12, Nishi 6, Kita-ku, Sapporo 060, Japan

R.A. Steinbrecht, Max-Planck-Institut für Verhaltensphysiologie, 82305 Seewiesen, Germany

S. Van Toller, Department of Psychology, University of Warwick, Coventry, UK

# **Editorial board**

H. Altner, Regensburg, Germany
G.G. Birch, Reading, UK
R.J. Contreras, Tallahassee, FL, USA
K.B. Døving, Oslo, Norway
A.I. Farbman, Evanston, IL, USA
S. Firestein, New York, NY, USA
J.E.R. Frijters, Geleen, The Netherlands

A. Gelperin, Murray Hill, NJ, USA Th. Hummel, Erlangen, Germany K.E. Kaissling, Seewiesen, Germany J.S. Kauer, Boston, MA, USA M. Kendal-Reed, NC, USA G. Kobal, Erlangen, Germany J.H.A. Kroeze, Utrecht, The Netherlands H. Lawless, Ithaca, NY, USA R. Margolskee, New York, NY, USA L.E. Marks, New Haven, CT, USA C. Masson, Bures-sur-Yvette, France H. Mustaparta, Dragvoll, Norway H. Ogawa, Kumamoto, Japan R. Reed, Baltimore, MD, USA S. Saito, Ibaraki, Japan T. Sato, Nagasaki, Japan T. Shibuya, Ibaraki, Japan

# **Production editor**

Sue Bell, Oxford University Press

D.S. Smith, Baltimore, MD, USA L.Tolbert, Tucson, AZ, USA

T. Yamamoto, Osaka, Japan



### OXFORD UNIVERSITY PRESS

# Contents

# $\mathcal{C}_{\text{\tiny ©}}$ volume 23 number 6 1998

A New Method to Improve Olfactory Responses to GC Effluents S. Gouinguené, I. de Cruz, J. van der Pers, L. Wadhams and F. Marion-Poll	647
The Characteristics of the Electrovomeronasogram: Its Loss following Vomeronasal Axotomy in the Garter Snake M. Taniguchi, D. Wang and M. Halpern	653
Effects of Chorda Tympani Nerve Anesthesia on Taste Responses in the NST M.E. Dinkins and S.P. Travers	661
The Taste of Polycose in Hamsters B.K. Formaker, C.E. Kearns and M.E. Frank	675
Effects of GABA on Acutely Isolated Neurons from the Gustatory Zone of the Rat Nucleus of the Solitary Tract J. Du and R.M. Bradley	683
Amino Acid Sequence, Post-translational Modifications, Binding and Labelling of Porcine Odorant-binding	689
Protein S. Paolini, A. Scaloni, A. Amoresano, S. Marchese, E. Napolitano and P. Pelosi	
Gustatory Responses to Amino Acids in the Chorda Tympani Nerve of C3H Mice S. Harada, K. Yamaguchi and Y. Kasahara	699
A Novel Monoclonal Antibody that Recognizes Apical Membrane of Frog Taste Cells N. Higashi, K. Tsujii and J. Sunamoto	709
Unilateral Naris Occlusion and the Rat Accessory Olfactory Bulb P.C. Brunjes and R. Kishore	717
AChemS: The Beginning M.M. Mozell and the Membership of AChemS	721
The Timing of $\alpha$ -Gustducin Expression during Cell Renewal in Rat Vallate Taste Buds Y.K. Cho, A.I. Farbman and D.V. Smith	735
'Anatomical Description of a New Organ in the Nose of Domesticated Animals' by Ludvig Jacobson (1813) D. Trotier and K.B. Døving	743
SHORT COMMUNICATION Trigeminal Chemosensitivity: Differences in Relation to the Time of the Day J. Lötsch, T. Hummel, HG. Kraetsch and G. Kobal	755
CORRIGENDUM Bilateral Detection Thresholds in Dextrals and Sinistrals Reflect the More Sensitive Side of the Nose, Which Is Not Lateralized S.A. Betchen and R.L. Doty	761
Author Index	763
Subject Index	769

Please visit the journal's World Wide Web site at http://www.oup.co.uk/chemse

# **Subscriptions**

A subscription to Chemical Senses comprises six issues, with an Annual Author and Subject Index. Subscriptions are entered on a calendar year basis only. Prices include postage by surface mail or, for subscribers in the USA and Canada by air freight, or in India, Japan, Australia and New Zealand by Air Speeded Post. Airmail rates are available on request.

### Annual subscription rate (Volume 23, 1998):

Institutional rate: UK and Europe, £220; Rest of World, \$355. Personal rate\*: UK and Europe, £110; Rest of World, \$178. Back volume prices and subscription rates for members of AChemS, ECRO and JASTS are also available on request. Please add sales tax to the prices quoted.

\*Personal rates apply only when copies are sent to a private address and payment is made by personal cheque or credit card.

Orders. Orders and payments from, or on behalf of, subscribers in the various geographical areas shown below should be sent to the office indicated.

The Americas: Oxford University Press, 2001 Evans Road, Cary, NC 27513, USA.

Japan: available from the following agents:

Kinokuniya Company Ltd. Journal Department, PO Box 55, Chitose, Tokyo 156, Japan.

Maruzen Company Ltd. Journal Division, PO Box 5050, Tokyo International 100-31, Japan.

Usaco Corporation. 13-12 Shimbashi 1-chome, Minato-ku, Tokyo 105, Japan.

Rest of the World: Oxford University Press, Great Clarendon Street, Oxford OX2 6DP, UK.

Tel: (01865) 267907; telex: 837730 OXPRESG; fax: (01865) 267485.

Advertising. To advertise in *Chemical Senses* contact Oxford University Press (US office) in the Americas or (UK office) in the Rest of the World (see addresses above).

Inquiries for all volumes except the current one and the two previous to it are available from Wim Verbeek, Swets & Zeitlinger, Backsets Department, PO Box 830, 2160 SZ Lisse, Holland and in 16 mm microfilm, 35 mm microfilm and 105 microfiche from University Microfilms International, 300 North Zeeb Road, Ann Arbor, MI 48106-1346. Copies of articles published are also available from UMI.

© Oxford University Press 1998. All rights reserved; no part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without either the prior written permission of the publishers or a licence permitting restricted copying issued in the UK by the Copyright Licensing Agency Ltd, 90 Tottenham Court Road, London W1P 9HE, or in the USA by the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

Chemical Senses (ISSN 0379-864X) is published bimonthly in February, April, June, August, October and December, by Oxford University Press, Oxford, UK. Annual subscription price is US\$355.00. Chemical Senses is distributed by Mercury International, 365 Blair Road, Avenel, New Jersey 07001, USA. Periodical postage paid at Rahway, New Jersey, USA and additional entry points.

US POSTMASTER: send address changes to *Chemical Senses*, c/o Mercury International, 365 Blair Road, Avenel, New Jersey 07001, USA.

Typeset by Forewords, Oxford, UK and printed by Information Press Ltd, Oxford, UK on acid free paper.

# **Forthcoming Articles**

 $\mathcal{C}_{\mathfrak{s}}$ 

The Distribution of Sugar Chains on the Vomeronasal Epithelium Observed with an Atomic Force Microscope T. Osada, S. Takezawa, A. Itoh, H. Arakawa, M. Ichikawa and Atsushi Ikai

The Perceived Intensity of Caffeine Aftertaste: Tasters Versus Nontasters G. Neely and G. Borg

The Effects of  $\beta$ -bungarotoxin on the Morphogenesis of Taste Papillae and Taste Buds in the Mouse J. Morris-Wiman, E. Basco and Y. Du

ABSTRACTS: Thirteenth Congress of the European Chemoreception Research Organisation

Taste Qualities of Solutions Preferred by Hamsters B.I. MacKinnon, M.E. Frank, T.P. Hettinger and B.G. Rehnberg

NMDA and Non-NMDA Receptors Mediate Responses in the Primary Gustatory Nucleus in Goldfish C.A. Smeraski, T.V. Dunwiddie, L. Diao and T.E. Finger

The Vomeronasal Organ of the Male Ferret E. Weiler, R. Apfelbach and A.I. Farbman

The Effect of Odour Priming on Long Latency Visual Evoked Potentials of Matching and Mismatching Objects J. Grigor, S. Van Toller, J. Behan and A. Richardson

Visual Event Related Potentials Modulated by Contextually Relevant and Irrelevant Olfactory Primes M. Sarfarazi, B. Cave, A. Richardson, J. Behan and E.M. Sedgwick