

Parasitology

Back volumes. Vols. 1–71: Inquiries should be addressed to Wm. Dawson & Sons Ltd, Cannon House, Folkestone, Kent. Vols. 72 onwards: quotations for parts still in print may be obtained from Cambridge or the American Branch of Cambridge University Press.

Copying. This journal is registered with the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923, USA. Organizations in the USA who are also registered with C.C.C. may therefore copy material (beyond the limits permitted by sections 107 and 108 of US copyright law) subject to payment to C.C.C. of the per-copy fee of \$16.00. This consent does not extend to multiple copying for promotional or commercial purposes. Code 0031–1820/2019 \$16.00.

Organizations authorized by the Copyright Licensing Agency may also copy material subject to the usual conditions.

ISI Tear Sheet Service. 3501 Market Street, Philadelphia, Pennsylvania 19104, USA, is authorized to supply single copies of separate articles for private use only.

For all other use, permission should be sought from Cambridge or the American Branch of Cambridge University Press.

Claims for missing issues can only be considered if made immediately after receipt of the subsequent issue.

Advertising. Details of advertising in Parasitology may be obtained from the publisher.

Online submission. Authors are encouraged to submit their manuscripts online. Go to <http://mc.manuscriptcentral.com/par/> to open an author's account for Parasitology. Manuscript Central is helping to improve the speed of the publication process for the journal.

Front Cover illustration: The functional mechanism of anti-merozoite antibodies. Antibodies to merozoite surface proteins can mediate several effector mechanisms, including complement fixation due to cytophilic antibodies that result in merozoite lysis of C3b opsonization; inhibition of merozoite invasion into the RBC; phagocytosis of IgG-opsonized merozoites; production of reactive oxygen species (ROS) or Nitric oxide (NO) in response to opsonized parasites and antibody dependent cellular inhibition (ADCI) triggered by IgG-opsonized merozoites. From Healer et al., Vol. 145 (7), pp. 839–847.

© Cambridge University Press 2019

University Printing House, Cambridge CB2 8BS, United Kingdom
1 Liberty Plaza, Floor 20, New York, NY 10006, USA
477 Williamstown Road, Port Melbourne, VIC 3207, Australia
C/ Orense, 4, Planta 13 28020 Madrid, Spain
Lower Ground Floor, Nautica Building, The Water Club, Beach Road,
Granger Bay, 8005 Cape Town, South Africa

Printed in the UK by Bell & Bain

PARASITOLOGY

CONTENTS

REVIEW ARTICLES

Parasitological research in the molecular age

Christian Selbach, Fátima Jorge, Eddy Dowle, Jerusha Bennett, Xuhong Chai, Jean-François Doherty, Alan Eriksson, Antoine Filion, Eleanor Hay, Ryan Herbison, Jocelyn Lindner, Eunji Park, Bronwen Presswell, Brandon Ruehle, Paulo M. Sobrinho, Eleanor Wainwright and Robert Poulin

1361

Population genetics of ectoparasitic mites *Varroa* spp. in Eastern and Western honey bees

Vincent Dietemann, Alexis Beaurepaire, Paul Page, Orlando Yáñez, Ninat Buawangpong, Panuwan Chantawannakul and Peter Neumann

1429

Helminths and microbes within the vertebrate gut – not all studies are created equal

Alba Cortés, Laura E. Peachey, Timothy P. Jenkins, Riccardo Scotti and Cinzia Cantacessi

1371

Lupeol induces immunity and protective efficacy in a murine model against visceral leishmaniasis

Gurpreet Kaur, Kalpana Chauhan and Sukhbir Kaur

1440

RESEARCH ARTICLES

TcNST2* encodes a Golgi-localized UDP-galactose transporter in *Trypanosoma cruzi

Elizabeth C. Rodrigues, Patricia Mörking, Jaqueline O. Rosa, Bruno A. A. Romagnoli, Beatriz G. Guimarães, Priscila M. Hiraiwa, Amanda Klinke, Alessandra M. de Aguiar, Crisciele Kuligovski, Samuel Goldenberg and Augusto S. P. Ramos

1379

Influence of autophagy, apoptosis and their interplay in filaricidal activity of C-cinnamoyl glycosides

Priya Roy, Anirban Sengupta, Nikhilesh Joardar, Arindam Bhattacharyya, Nimai Chandra Saha, Anup Kumar Misra and Santi P. Sinha Babu

1451

Novel polymorphic microsatellite loci in *Anisakis pegreffii* and *A. simplex* (s. s.) (Nematoda: Anisakidae): implications for species recognition and population genetic analysis

Simonetta Mattucci, Eleonora Bello, Michela Paoletti, Steve C. Webb, Juan T. Timi, Arne Levsen, Paolo Cipriani and Giuseppe Nascetti

1387

Screening diagnostic candidates from *Leishmania infantum* proteins for human visceral leishmaniasis using an immunoproteomics approach

Daniela P. Lage, Fernanda Ludolf, Patrícia C. Silveira, Amanda S. Machado, Fernanda F. Ramos, Daniel S. Dias, Patrícia A. F. Ribeiro, Lourena E. Costa, Danniele L. Vale, Grasiele S. V. Tavares, Vivian T. Martins, Miguel A. Chávez-Fumagalli, Rachel B. Caligorne, Ana T. Chaves, Denise U. Gonçalves, Manoel O. C. Rocha, Mariana C. Duarte and Eduardo A. F. Coelho

1462

Shedding of *Cryptosporidium* in calves and dams: evidence of re-infection and shedding of different gp60 subtypes

Sarah Thomson, Elisabeth A. Innes, Nicholas N. Jonsson and Frank Katzer

1404

Beyond the epistaxis: voluntary nasal leech (*Dinobdella ferox*) infestation revealed the leech behaviours and the host symptoms through the parasitic period

Yi-Te Lai

1467

Surgical approaches for definitive treatment of hepatic alveolar echinococcosis: results of a survey in 178 patients

Chuang Yang, Jingyu He, Xianwei Yang and Wentao Wang

1414

1477

Validation of a death assay for *Angiostrongylus cantonensis* larvae (L3) using propidium iodide in a rat model (*Rattus norvegicus*)

Susan I. Jarvi, John Jacob, Robert T. Sugihara, Israel L. Leinbach, Ina H. Klasner, Lisa M. Kaluna, Kirsten A. Snook, M. Kathleen Howe, Steven H. Jacquier, Ingo Lange, Abigail L. Atkinson, Ashley R. Deane, Chris N. Niebuhr and Shane R. Siers

1421

Validation of a death assay for *Angiostrongylus cantonensis* larvae (L3) using propidium iodide in a rat model (*Rattus norvegicus*)

Susan I. Jarvi, John Jacob, Robert T. Sugihara, Israel L. Leinbach, Ina H. Klasner, Lisa M. Kaluna, Kirsten A. Snook, M. Kathleen Howe, Steven H. Jacquier, Ingo Lange, Abigail L. Atkinson, Ashley R. Deane, Chris N. Niebuhr and Shane R. Siers

Cambridge Core

For further information about this journal
please go to the journal website at:
cambridge.org/par



MIX
Paper from
responsible
sources
FSC® C007785

CAMBRIDGE
UNIVERSITY PRESS