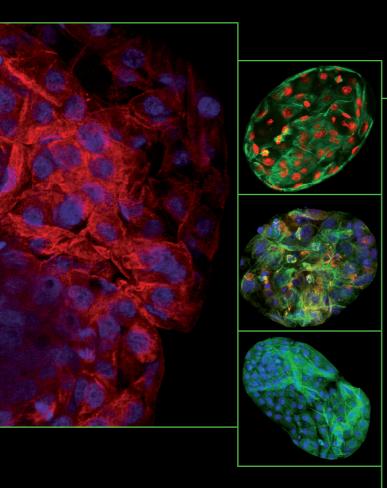
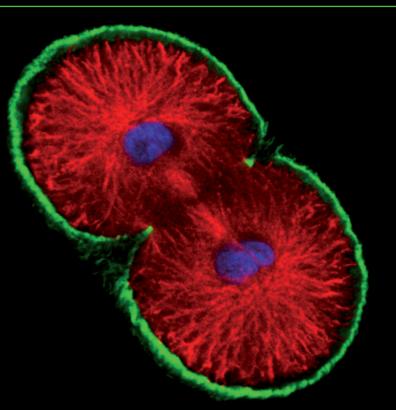
ISSN: 0967-1994

ZYGOTE

The Biology of Gametes and Early Embryos







The Biology of Gametes and Early Embryos

North American Editor

Jonathan van Blerkom

Department of Molecular, Cellular and

Developmental Biology,

Editor-in-Chief **Brian Dale**

Centre for Assisted Fertilization Via Tasso 480 Naples 80123 Italy zygote@cambridge.org

David Albertini

Alberto Darszon

Amherst College, USA

Rafael Fissore

KU Cancer Center, Kansas, USA

Universidad Nacional Autonoma, Mexico

University of Colorado, Boulder, CO 80309, USA Editorial Board

Yves Menezo UNILABS, Paris, France

Luigia Santella Stazione Zoologica, Italy

Asian Pacific Editor

Kazuo Inaba

Shimoda Marine Research Center University of Tsukuba 5-10-1 Shimoda Shizuoka 415-0025 Japan

Hitoshi Sawada Nagoya University, Sugashima, Japan

Gary Wessel Brown University, USA

Subscriptions

Zygote (ISSN 0967-1994) is published in February, April, June, August, October and December. The subscription price (excluding VAT) of Volume 23, 2015, which includes electronic-only access available to institutional subscribers is £520 net (US \$945 in USA, Canada and Mexico); single parts cost £95.00 net (US \$173.00 in USA, Canada and Mexico). EU subscribers (outside the UK) who are not registered for VAT should add VAT at their country's rate. VAT registered subscribers should provide their VAT registration number. Four parts form a volume. Orders, which must be accompanied by payment, may be sent to any bookseller, subscription agent or to the publisher. Cambridge University Press, UPH, Shaftesbury Road, Cambridge, CB2 8BS, UK, or in the USA, Canada and Mexico to Cambridge University Press, Journals Fulfillment Department, 100 Brook Hill Drive, West Nyack, New York 10994-2133. Japanese prices for institutions are available from Kinokuniya Company Ltd, P.O. Box 55, Chitose, Tokyo 156, Japan. Application to mail at periodicals postage rates pending at New York, NY, and additional mailing offices. POSTMASTER: send address changes in USA, Canada and Mexico to Zygote, Cambridge University Press, 100 Brook Hill Drive, West Nyack, New York 10994-2133.

Advertising Apply to the publisher. Address enquiries to: Advertising Sales Executive (UK) or the Advertising Co-ordinator (North America).

Copying

This journal is registered with the Copyright Clearance Centre, 222 Rosewood Drive, Danvers, MA 01923, USA. Organisations in the USA who are also registered with the 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 0967–1994/2015 \$16.00. Organisations authorised 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 authorised to supply single copies of separate articles for private use only. *For all other use*, permission should be sought from the Cambridge or the American Branch of Cambridge University Press.

Internet Access This journal is included in the Cambridge Journals Online service which can be found at http://journals.cambridge.org. For further information on other Press titles access http://www.cambridge.org.

Zygote is covered by the major abstracting and indexing services including Current Contents/Life Sciences, Chemical Abstracts and Index Medicus.

Claims for missing issues should be made immediately on receipt of the subsequent issue.

Cover illustration: **Left:** Human vitrified blastocyst stained 24h post thaw (on day 6) (DNA is blue, microtubules are red)/Katerina Chatzimeletiou. **Centre top:** Human blastocyst subjected to cryoprotectants (DMSO/EG) but not submerged in liquid nitrogen stained 4h later (on day 5) (DNA is red, microtubules are green)/Katerina Chatzimeletiou. **Centre middle:** Human vitrified blastocyst stained 24h post thaw (on day 6) (DNA is blue, microtubules are green, and spindles, poles and mid-bodies are red)/Katerina Chatzimeletiou. **Centre bottom:** Human vitrified blastocyst stained 24h post thaw (on day 6) (DNA is blue, microtubules are green)/Katerina Chatzimeletiou. **Right:** Mitotic apparatus of a telophase sea urchin (*Strongylocentrotus pupuratus*) embryo (DNA is blue, tubulin is red, actin is green)/Amro Hamdoun.

© Cambridge University Press 2015