

# FRONT RUNNERS



**Cover:** Hypoxia increases apoptosis and alters Shh expression. Blocking Shh expression creates holoprosencephaly, which is characterised in its extreme form as cyclopia. See article by Smith et al. on page 915.

## IN THIS ISSUE

867 **Summaries of selected research papers**

## EDITORIAL

869 **The San Francisco Declaration on Research Assessment**  
Ross Cagan

## A MODEL FOR LIFE

871 **Of Mice and Men, and Medicine: an interview with Monica Justice**  
Kathryn Senior

874 **Linking academia and industry to bring drugs to the clinic: an interview with George Tidmarsh**  
Kathryn Senior

## CLINICAL PUZZLE

877 **From bedside to bench to clinic trials: identifying new treatments for severe asthma**  
Amarjit Mishra, Xianglan Yao and Stewart J. Levine

## AT A GLANCE

889 **Pain hypersensitivity mechanisms at a glance**  
Vijayan Gangadharan and Rohini Kuner

## REVIEWS

896 **Genome editing of human pluripotent stem cells to generate human cellular disease models**  
Kiran Musunuru

905 **The expanding role of fish models in understanding non-alcoholic fatty liver disease**  
Yoichi Asaoka, Shuji Terai, Isao Sakaida and Hiroshi Nishina

## ORIGINAL RESEARCH

## RESEARCH ARTICLES

- 915 The effect of hypoxia on facial shape variation and disease phenotypes in chicken embryos**  
Francis Smith, Diane Hu, Nathan M. Young, Alexis J. Lainoff, Heather A. Jamniczky, Emin Maltepe, Benedikt Hallgrímsson and Ralph S. Marcucio
- 925 Heterozygous inactivation of *tsc2* enhances tumorigenesis in *p53* mutant zebrafish**  
Seok-Hyung Kim, Marie L. Kowalski, Robert P. Carson, L. Richard Bridges and Kevin C. Ess
- 934 Interplay between vesicoureteric reflux and kidney infection in the development of reflux nephropathy in mice**  
Samantha E. Bowen, Christine L. Watt, Inga J. Murawski, Indra R. Gupta and Soman N. Abraham
- 942 Type XVIII collagen is essential for survival during acute liver injury in mice**  
Michael B. Duncan, Changqing Yang, Harikrishna Tanjore, Patrick M. Boyle, Doruk Keskin, Hikaru Sugimoto, Michael Zeisberg, Bjorn R. Olsen and Raghu Kalluri
- 952 Cytosolic caspases mediate mislocalised SOD2 depletion in an *in vitro* model of chronic prion infection**  
Layla Sinclair, Victoria Lewis, Steven J. Collins and Cathryn L. Haigh
- 964 Raf-mediated cardiac hypertrophy in adult *Drosophila***  
Lin Yu, Joseph Daniels, Alex E. Glaser and Matthew J. Wolf
- 977 Long-lasting alterations to DNA methylation and ncRNAs could underlie the effects of fetal alcohol exposure in mice**  
Benjamin I. Laufer, Katarzyna Mantha, Morgan L. Kleiber, Eric J. Diehl, Sean M. F. Addison and Shiva M. Singh
- 993 Epigenetic changes associated with disease progression in a mouse model of childhood allergic asthma**  
Adam Collison, Jessica S. Siegle, Nicole G. Hansbro, Chau-To Kwok, Cristan Herbert, Joerg Mattes, Megan Hitchins, Paul S. Foster and Rakesh K. Kumar
- 1001 Norepinephrine transporter variant A457P knock-in mice display key features of human postural orthostatic tachycardia syndrome**  
Jana K. Shirey-Rice, Rebecca Klar, Hugh M. Fentress, Sarah N. Redmon, Tiffany R. Sabb, Jessica J. Krueger, Nathan M. Wallace, Martin Appalsamy, Charlene Finney, Suzanna Lonce, André Diedrich and Maureen K. Hahn
- 1012 Beneficial effect of prolonged heme oxygenase 1 activation in a rat model of chronic heart failure**  
Massimo Collino, Alessandro Pini, Niccolò Mugelli, Rosanna Mastroianni, Daniele Bani, Roberto Fantozzi, Laura Papucci, Marilena Fazi and Emanuela Masini
- 1021 Erythropoietin attenuates cardiac dysfunction in experimental sepsis in mice via activation of the  $\beta$ -common receptor**  
Areeg I. Khan, Sina M. Coldewey, Nimesh S. A. Patel, Mara Rogazzo, Massimo Collino, Muhammed M. Yaqoob, Peter Radermacher, Amar Kapoor and Christoph Thiemermann
- 1031 Inhibition of I $\kappa$ B kinase reduces the multiple organ dysfunction caused by sepsis in the mouse**  
Sina M. Coldewey, Mara Rogazzo, Massimo Collino, Nimesh S. A. Patel and Christoph Thiemermann

# ORIGINAL RESEARCH

## RESEARCH REPORT

**1043 Central and haematopoietic interleukin-1 both contribute to ischaemic brain injury in mice**

Adam Denes, Fiona Wilkinson, Brian Bigger, Michael Chu, Nancy J. Rothwell and Stuart. M. Allan

## CORRIGENDUM

**1049 Bloomsbury report on mouse embryo phenotyping: recommendations from the IMPC workshop on embryonic lethal screening**

David Adams, Richard Baldock, Shoumo Bhattacharya, Andrew J. Copp, Mary Dickinson, Nicholas D. E. Greene, Mark Henkelman, Monica Justice, Timothy Mohun, Stephen A. Murray, Erwin Pauws, Michael Raess, Janet Rossant, Tom Weaver and David West