

# Cell Research



Volume 28 Number 1 January 2018

[www.nature.com/cr](http://www.nature.com/cr)  
[www.cell-research.com](http://www.cell-research.com)



Review on plasma membrane changes in programmed cell death  
Discovery of a novel state of pluripotency  
Structural insight into flagellin recognition by NAIP5  
Reduced RA signaling linked to autism spectrum disorders

(Founded in 1990)

Online submission via:  
<http://www.nature.com/cr>  
<http://www.cell-research.com>

Cell Research is published monthly by Nature Publishing Group (NPG) in partnership with Shanghai Institutes for Biological Sciences (SIBS), Chinese Academy of Sciences (CAS) since 2006.

**Sponsored by:**

Institute of Biochemistry and Cell Biology (IBCB), Shanghai Institutes for Biological Sciences, Chinese Academy of Sciences

© 2018 IBCB, SIBS, CAS



**Affiliated with:**

The Chinese Society for Cell Biology since August 2007



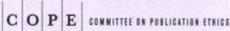
**Granted by:**

Publishing Foundation of Chinese Academy of Sciences, National Natural Science Foundation of China, and China Association for Science and Technology



Supported by SPFCAS

This journal is a member of, and subscribes to the principles of, the Committee on Publication Ethics (COPE) [www.publicationethics.org](http://www.publicationethics.org)



**SPRINGER NATURE**

Coordinating Editor for this issue  
Fangfang Hu

## RESEARCH HIGHLIGHTS

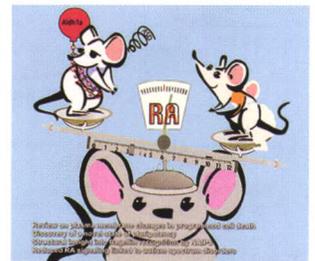
- 1 Avian influenza H7N9 viruses: a rare second warning**  
*Kanta Subbarao*
- 3 PRRT2-dependent dyskinesia: cerebellar, paroxysmal and persistent**  
*Lieke Kros, Chris I De Zeeuw*
- 5 Portending death in germinal centers — when B cells know their time is up**  
*Lili Wang, Markus Müschen*
- 7 TRFH domain: at the root of telomere protein evolution?**  
*Marie-Joseph Giraud-Panis, Jing Ye, Eric Gilson*

## REVIEW

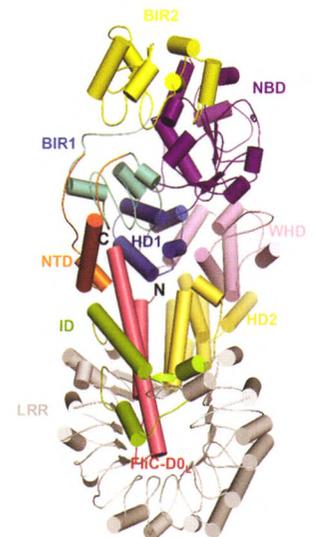
- 9 Plasma membrane changes during programmed cell deaths *Open***  
*Yingying Zhang, Xin Chen, Cyril Gueydan, Jiahui Han*

## ORIGINAL ARTICLES

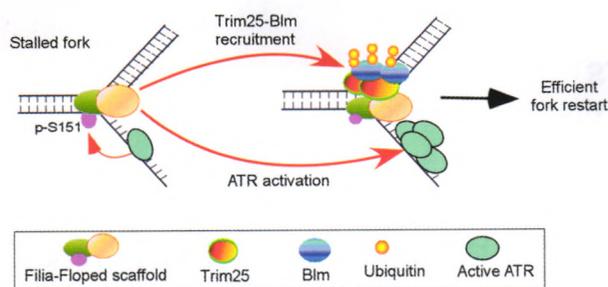
- 22 Derivation of hypermethylated pluripotent embryonic stem cells with high potency *Open***  
*Siqin Bao, Walfred WC Tang, Baojiang Wu, Shinseog Kim, Jingyun Li, Lin Li, Toshihiro Kobayashi, Caroline Lee, Yanglin Chen, Mengyi Wei, Shudong Li, Sabine Dietmann, Fuchou Tang, Xihe Li, M Azim Surani*
- 35 Structural basis for specific flagellin recognition by the NLR protein NAIP5 *Open***  
*Xinru Yang, Fan Yang, Weiguang Wang, Guangzhong Lin, Zehan Hu, Zhifu Han, Yijun Qi, Liman Zhang, Jiawei Wang, Sen-Fang Sui, Jijie Chai*
- 48 Excessive UBE3A dosage impairs retinoic acid signaling and synaptic plasticity in autism spectrum disorders**  
*Xingxing Xu, Chuanyin Li, Xiaobo Gao, Kun Xia, Hui Guo, Yali Li, Zijian Hao, Lei Zhang, Daming Gao, Chenfan Xu, Huatai Xu, Zhi-Qi Xiong, Zilong Qiu, Ling Mei, Xiaoduo Xie, Kangcheng Ruan, Ronggui Hu*
- 69 Mouse embryonic stem cells have increased capacity for replication fork restart driven by the specific Filia-Floped protein complex**  
*Bo Zhao, Weidao Zhang, Yixian Cun, Jingzheng Li,*



**Cover:** Impaired retinoic acid (RA) signaling as an underlying mechanism in human autism spectrum disorders (ASD). See page 48-68 by Xingxing Xu *et al.* for details.



Overall structure of Filic\_D01-NAIP5 complex by cartoon representation. See page 35-47 by Xinru Yang *et al.* for details.



Working model of Filia-Floped scaffold in promoting stalled fork restart in ESCs. See page 69-89 by Bo Zhao *et al.* for details.

Yan Liu, Jing Gao, Hongwen Zhu, Hu Zhou, Rugang Zhang, Ping Zheng

**90 PRRT2 deficiency induces paroxysmal kinesigenic dyskinesia by regulating synaptic transmission in cerebellum** *Open*

Guo-He Tan, Yuan-Yuan Liu, Lu Wang, Kui Li, Ze-Qiang Zhang, Hong-Fu Li, Zhong-Fei Yang, Yang Li, Dan Li, Ming-Yue Wu, Chun-Lei Yu, Juan-Juan Long, Ren-Chao Chen, Li-Xi Li, Lu-Ping Yin, Ji-Wei Liu, Xue-Wen Cheng, Qi Shen, You-Sheng Shu, Kenji Sakimura, Lu-Jian Liao, Zhi-Ying Wu, Zhi-Qi Xiong

**111 Landscape of the regulatory elements for lysine 2-hydroxyisobutyrylation pathway**

He Huang, Zhouqing Luo, Shankang Qi, Jing Huang, Peng Xu, Xiuxuan Wang, Li Gao, Fangyi Li, Jian Wang, Wenhui Zhao, Wei Gu, Zhucheng Chen, Lunzhi Dai, Junbiao Dai, Yingming Zhao

**LETTERS TO THE EDITOR**

**126 Human embryonic stem cells contribute to embryonic and extraembryonic lineages in mouse embryos upon inhibition of apoptosis** *Open*

Xuepeng Wang, Tianda Li, Tongtong Cui, Dawei Yu, Chao Liu, Liyuan Jiang, Guihai Feng, Lei Wang, Rui Fu, Xinxin Zhang, Jie Hao, Yukai Wang, Liu Wang, Qi Zhou, Wei Li, Baoyang Hu

**130 The 11th C2H2 zinc finger and an adjacent C-terminal arm are responsible for TZAP recognition of telomeric DNA**

Yaqing Zhao, Guang Zhang, Chao He, Yide Mei, Yunyu Shi, Fudong Li

**ADVANCE ONLINE PUBLICATION (published weekly on Tuesday and Friday)**

**JANUARY 12 2018**

**H5N1 influenza virus-specific miRNA-like small RNA increases cytokine production and mouse mortality via targeting poly(rC)-binding protein 2** *Open*

Xihan Li, Zheng Fu, Hongwei Liang, Yanbo Wang, Xian Qi, Meng Ding, Xinlei Sun, Zhen Zhou, Ying Huang, Hongwei Gu, Limin Li, Xi Chen, Donghai Li, Quan Zhao, Fenyong Liu, Hua Wang, Jin Wang, Ke Zen and Chen-Yu Zhang *doi:10.1038/cr.2018.3*

**Eosinophil-derived CCL-6 impairs hematopoietic stem cell homeostasis** *Open*

Chao Zhang, Weiwei Yi, Fei Li, Xufei Du, Hu Wang, Ping Wu, Chao Peng, Man Luo, Wen Hua, Catherine CL Wong, James J Lee, Wen Li, Zhihua Chen, Songmin Ying, Zhenyu Ju and Huahao Shen *doi:10.1038/cr.2018.2*

**JANUARY 9 2018**

**Histone H3 lysine 4 monomethylation modulates long-range chromatin interactions at enhancers**

Jian Yan, Shi-An A Chen, Andrea Local, Tristin Liu, Yunjiang Qiu, Kristel M Dorighi, Sebastian Preissl, Chloe M Rivera, Chaochen Wang, Zhen Ye, Kai Ge, Ming Hu, Joanna Wysocka and Bing Ren *doi:10.1038/cr.2018.1*



Promega

# New! 活细胞实时 蛋白相互作用检测

NanoLuc<sup>®</sup> Binary Technology  
(NanoBiT<sup>™</sup>) 是一种基于 Promega 最新专利  
萤光素酶 NanoLuc<sup>®</sup> 萤光素酶的二亚单元系统，  
用来检测活细胞内蛋白质的相互作用。



扫码了解 NanoBiT 技术



欢迎关注 Promega 官方微信

普洛麦格（北京）生物技术有限公司

地址：北京市东城区北三环东路 36 号环球贸易中心 B 座 907-909

电话：010-58256268

传真：010-58256160

网址：[www.promega.com](http://www.promega.com)

技术支持邮箱：[chinatechserv@promega.com](mailto:chinatechserv@promega.com)