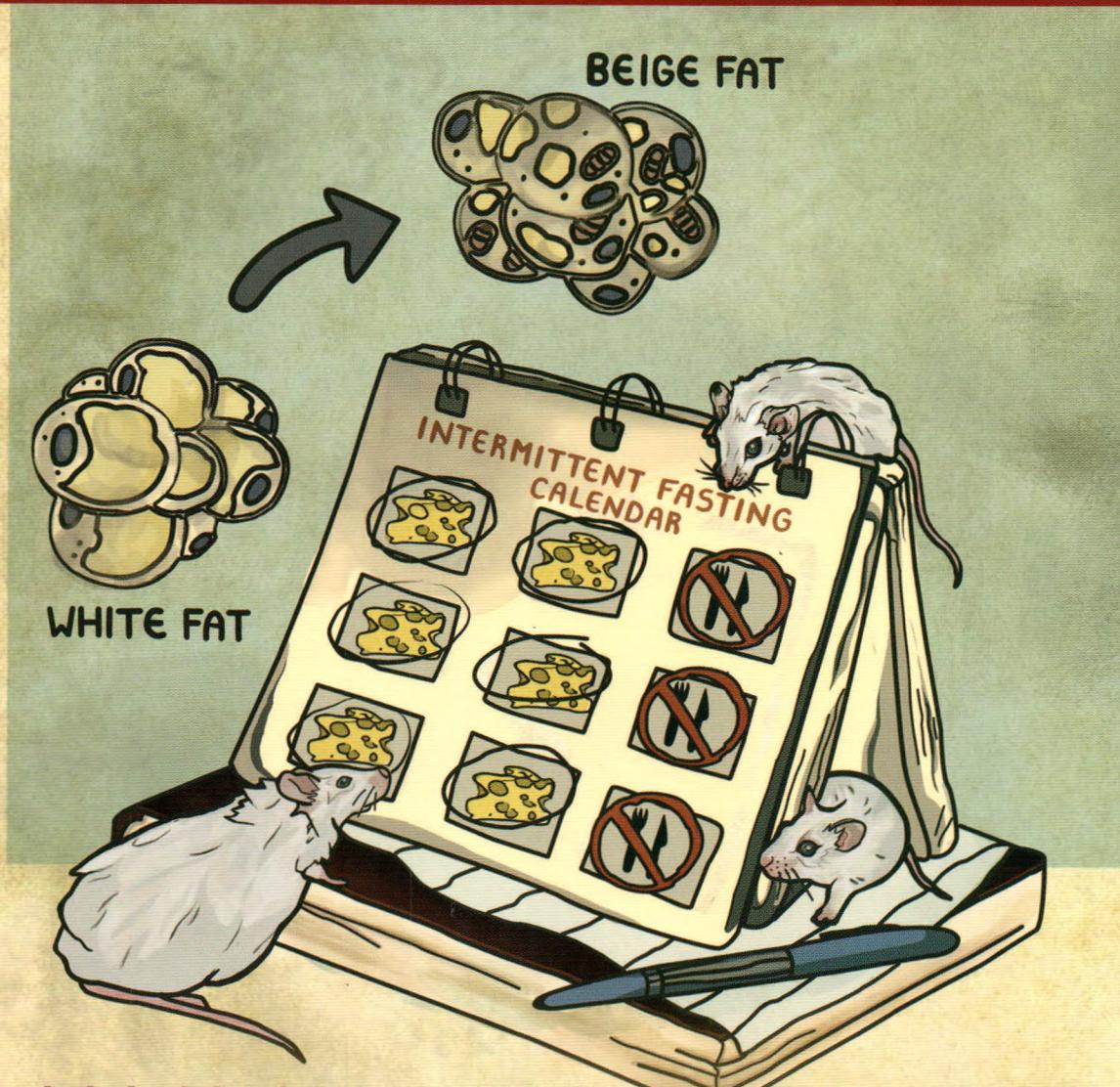


Cell Research



Volume 27 Number 11 November 2017

www.nature.com/cr
www.cell-research.com



Mechanistic insights into intermittent fasting mediated metabolic benefit
A high-quality assembly of the quinoa genome
Cryo-EM structure of human DNA-PK holoenzyme
Elucidating the sugar code for ricin toxicity

Cell Research

(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

© 2017 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



Project for Enhancing International Impact of China STM Journals



Supported by SPFCAS

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



SPRINGER NATURE

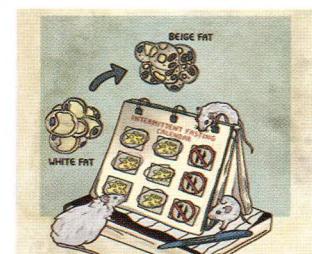
Volume 27 Number 11 November 2017

Contents

EDITORIAL

1299 Sanofi-Cell Research outstanding paper award of 2016

Editorial Office



RESEARCH HIGHLIGHTS

1300 White adipose tissue coloring by intermittent fasting

Riikka Kivelä, Kari Alitalo

1302 NLRP9b: a novel RNA-sensing inflammasome complex

Chinh Ngo, Si Ming Man

1304 Structural step forward for NHEJ

Go Watanabe, Michael R Lieber, Dewight Williams

1307 tsRNAs: new players in mammalian retrotransposon control

Yunfang Zhang, Junchao Shi, Qi Chen

Cover: Intermittent fasting promotes browning of white fat and metabolic homeostasis through M2 macrophage activation. This process is mediated by fasting-induced VEGF expression in white fat. See page 1309-1326 by Kim et al. for details. Cover image by Elizabeth Lebedev.

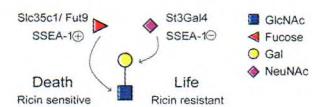
ORIGINAL ARTICLES

1309 Intermittent fasting promotes adipose thermogenesis and metabolic homeostasis via VEGF-mediated alternative activation of macrophage *Open*

Kyoung-Han Kim, Yun Hye Kim, Joe Eun Son, Ju Hee Lee, Sarah Kim, Min Seon Choe, Joon Ho Moon, Jian Zhong, Kiya Fu, Florine Lenglin, Jeong-Ah Yoo, Philip J Bilan, Amira Klip, Andras Nagy, Jae-Ryong Kim, Jin Gyoong Park, Samer MI Hussein, Kyung-Oh Doh, Chi-chung Hui, Hoon-Ki Sung

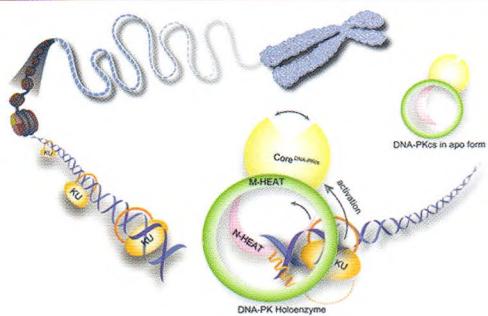
1327 A high-quality genome assembly of quinoa provides insights into the molecular basis of salt bladder-based salinity tolerance and the exceptional nutritional value *Open*

Changsong Zou, Aojun Chen, Lihong Xiao, Heike M Muller, Peter Ache, Georg Haberer, Meiling Zhang, Wei Jia, Ping Deng, Ru Huang, Daniel Lang, Feng Li, Dongliang Zhan, Xiangyun Wu, Hui Zhang, Jennifer Bohm, Renyi Liu, Sergey Shabala, Rainer Hedrich, Jian-Kang Zhu, Heng Zhang



Presence of fucosylation impairs sialylation of Lewis X structures, leading to enhanced ricin binding and toxicity. See page 1351-1364 by Jasmin Taubenschmid et al. for details.

Coordinating Editor for this issue
Shushu Jiang



Cryo-EM structure of human DNA-PK holoenzyme and biochemical analyses reveal a working model for DNA-PK complex assembly and activation. See page 1341-1350 by Xiaotong Yin *et al.* for details.

1341 Cryo-EM structure of human DNA-PK holoenzyme

Xiaotong Yin, Mengjie Liu, Yuan Tian, Jiawei Wang, Yanhui Xu

1351 A vital sugar code for ricin toxicity Open

Jasmin Taubenschmid, Johannes Stadlmann, Markus Jost, Tove Irene Klok, Cory D Rillahan, Andreas Leibbrandt, Karl Mechtler, James C Paulson, Julian Jude, Johannes Zuber, Kirsten Sandvig, Ulrich Elling, Thorsten Marquardt, Christian Thiel, Christian Koerner, Josef M Penninger

1365 Molecular mechanism of directional CTCF recognition of a diverse range of genomic sites

Maolu Yin, Jiayu Wang, Min Wang, Xinmei Li, Mo Zhang, Qiang Wu, Yanli Wang

1378 Structural and mechanistic insights into the biosynthesis of CDP-archaeol in membranes

Sixue Ren, Antonella Caforio, Qin Yang, Bo Sun, Feng Yu, Xiaofeng Zhu, Jinjing Wang, Chao Dou, Qiuyu Fu, Niu Huang, Qiu Sun, Chunlai Nie, Shiqian Qi, Xinqi Gong, Jianhua He, Yuquan Wei, Arnold JM Driessens, Wei Cheng

LETTERS TO THE EDITOR

1392 An essential role for PNLDC1 in piRNA 3' end trimming and male fertility in mice

Yue Zhang, Rui Guo, Yiqiang Cui, Zhiping Zhu, Yingwen Zhang, Hao Wu, Bo Zheng, Qiuling Yue, Shun Bai, Wentao Zeng, Xuejiang Guo, Zuomin Zhou, Bin Shen, Ke Zheng, Mingxi Liu, Lan Ye, Jiahao Sha

1397 Pairing of integrins with ECM proteins determines migrasome formation Open

Danni Wu, Yue Xu, Tianlun Ding, Yan Zu, Chun Yang, Li Yu

ADVANCE ONLINE PUBLICATION (published weekly on Tuesday and Friday) 27 OCTOBER 2017

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 and M Azim Surani

doi:10.1038/cr.2017.134

Plasma membrane changes during programmed cell deaths Open

Yingying Zhang, Xin Chen, Cyril Gueydan and Jiahuai Han

doi:10.1038/cr.2017.133

24 OCTOBER 2017

H7N9 virulent mutants detected in chickens in China pose an increased threat to humans Open

Jianzhong Shi, Guohua Deng, Huihui Kong, Chunyang Gu, Shujie Ma, Xin Yin, Xianying Zeng, Pengfei Cui, Yan Chen, Huanliang Yang, Xiaopeng Wan, Xiurong Wang, Liling Liu, Pucheng Chen, Yongping Jiang, Jinxiong Liu, Yuntao Guan, Yasuo Suzuki, Mei Li, Zhiyuan Qu, Lizheng Guan, Jinkai Zang, Wenli Gu, Shuyu Han, Yangming Song, Yuzhen Hu, Zeng Wang, Linlin Gu, Wenyu Yang, Libin Liang, Hongmei Bao, Guobin Tian, Yanbing Li, Chuanling Qiao, Li Jiang, Chengjun Li, Zhigao Bu and Hualan Chen

doi:10.1038/cr.2017.129

New! 活细胞实时 蛋白相互作用检测

NanoLuc® Binary Technology

(NanoBiT™) 是一种基于 Promega 最新专利
萤光素酶 NanoLuc® 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

技术支持邮箱：chinatechserv@promega.com