

Cell Research



Q K 2 1 4 0 4 3 7

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

Volume 31 Number 10 October 2021



Mechanical activation of SARS-CoV-2 spike facilitates viral infection
Cryo-EM structures of ligand-bound MC1R-Gs complexes
Pericytes stimulate DDR in glioblastoma cells via paracrine signaling
A lncRNA promotes LAT51 liquid-liquid phase separation

ISSN 1001-0602



Center for Excellence in Molecular Cell Science
Chinese Academy of Sciences

SPRINGER NATURE

(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 Center for Excellence in Molecular Cell Science (CEMCS), Chinese Academy of Sciences (CAS) since 2006.

Sponsored by:
Center for Excellence in Molecular Cell Science (CEMCS), CAS

© 2021 CEMCS, 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



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



SPRINGER NATURE

Coordinating Editor for this issue
Jiajun Xu

RESEARCH HIGHLIGHTS

- 1039 Neutralizing shapeshifting pericytes enhances glioblastoma therapeutic efficacy**

Samuel A. Sprowls, Justin D. Lathia

- 1041 Building early defenses**

Yi Ding, Avinash Bhandoola

- 1043 Gasdermin B in the host–pathogen tug-of-war**

Timurs Maculins, Ivan Dikic

- 1045 Linear ubiquitin chains break blood vessel branches**

Yuri Shibata, David Komander

ARTICLES

- 1047 Mechanical activation of spike fosters SARS-CoV-2 viral infection** *Open*

Wei Hu, Yong Zhang, Panyu Fei, Tongtong Zhang, Danmei Yao, Yufei Gao, Jia Liu, Hui Chen, Qiao Lu, Tenny Mudianto, Xinrui Zhang, Chuxuan Xiao, Yang Ye, Qiming Sun, Jing Zhang, Qi Xie, Pei-Hui Wang, Jun Wang, Zhenhai Li, Jizhong Lou, Wei Chen

- 1061 Structural mechanism of calcium-mediated hormone recognition and G β interaction by the human melanocortin-1 receptor**

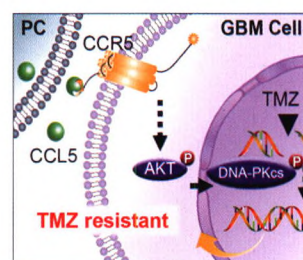
Shanshan Ma, Yan Chen, Antao Dai, Wanchao Yin, Jia Guo, Dehua Yang, Fulai Zhou, Yi Jiang, Ming-Wei Wang, H. Eric Xu

- 1072 Pericytes augment glioblastoma cell resistance to temozolomide through CCL5-CCR5 paracrine signaling** *Open*

Xiao-Ning Zhang, Kai-Di Yang, Cong Chen, Zhi-Cheng He, Qiang-Hu Wang, Hua Feng, Sheng-Qing Lv, Yan Wang, Min Mao, Qing Liu, Yao-Yao Tan, Wen-Ying Wang, Tian-Ran Li, Lin-Rong Che, Zhong-Yi Qin, Ling-Xiang Wu, Min Luo, Chun-Hua Luo, Yu-Qi Liu, Wen Yin, Chao Wang, Hai-Tao Guo, Qing-Rui Li, Bin Wang, Wei Chen, Shuang Wang, Yu Shi, Xiu-Wu Bian, Yi-Fang Ping



Cover: A SARS-CoV-2 virion (monster egg, inside of which is a monster representing viral RNA) touches host-cell plasma membrane (blue bending ground) producing tensile force (children's pulling), which not only strengthens spike-ACE2 (children) recognition, but also accelerates the S1/S2 separation to boost viral fusion machinery. See page 1047-1060 by Wei Hu et al. for details.



Schematic diagram showing the mechanism underlying pericyte-mediated enhancement of DNA damage repair in glioblastoma cells which induces temozolomide chemoresistance. See page 1072-1087 by Xiao-Ning Zhang et al. for details.

1088 A phosphatidic acid-binding lncRNA SNHG9 facilitates LATS1 liquid–liquid phase separation to promote oncogenic YAP signaling

Rui-Hua Li, Tian Tian, Qi-Wei Ge, Xin-Yu He, Cheng-Yu Shi, Jun-Hong Li, Zhen Zhang, Fang-Zhou Liu, Ling-Jie Sang, Zuo-Zhen Yang, Ya-Zhuo Liu, Yan Xiong, Qingfeng Yan, Xu Li, Huai-Qiang Ju, Jian Liu, Liang-Jing Wang, Jian-Zhong Shao, Wenqi Wang, Tianhua Zhou, Aifu Lin

1106 Delineating spatiotemporal and hierarchical development of human fetal innate lymphoid cells Open

Chen Liu, Yandong Gong, Han Zhang, Hua Yang, Yang Zeng, Zhilei Bian, Qian Xin, Zhijie Bai, Man Zhang, Jian He, Jing Yan, Jie Zhou, Zongcheng Li, Yanli Ni, Aiqing Wen, Yu Lan, Hongbo Hu, Bing Liu

LETTERS TO THE EDITOR

1123 O-glycosylation pattern of the SARS-CoV-2 spike protein reveals an “O-Follow-N” rule Open

Wenmin Tian, Delin Li, Nan Zhang, Guijie Bai, Kai Yuan, Haixia Xiao, Feng Gao, Yang Chen, Catherine C. L. Wong, George Fu Gao

1126 Structure-based analyses of neutralization antibodies interacting with naturally occurring SARS-CoV-2 RBD variants Open

Hua Xu, Bo Wang, Tian-Ning Zhao, Zi-Teng Liang, Tian-Bo Peng, Xiao-Hui Song, Jia-Jing Wu, You-Chun Wang, Xiao-Dong Su

1130 Structures of SARS-CoV-2 B.1.351 neutralizing antibodies provide insights into cocktail design against concerning variants Open

Shuo Du, Pulan Liu, Zhiying Zhang, Tianhe Xiao, Ayijiang Yasimayi, Weijin Huang, Youchun Wang, Yunlong Cao, Xiaoliang Sunney Xie, Junyu Xiao

1134 Enhancing prime editing by Csy4-mediated processing of pegRNA Open

Yao Liu, Guang Yang, Shuhong Huang, Xiangyang Li, Xin Wang, Guanglei Li, Tian Chi, Yulin Chen, Xingxu Huang, Xiaolong Wang

CORRECTIONS

1137 Author Corrections: VGLL4 functions as a new tumor suppressor in lung cancer by negatively regulating the YAP-TEAD transcriptional complex

Wenjing Zhang, Yijun Gao, Peixue Li, Zhubing Shi, Tong Guo, Fei Li, Xiangkun Han, Yan Feng, Chao Zheng, Zuoyun Wang, Fuming Li, Haiquan Chen, Zhao Cai Zhou, Lei Zhang, Hongbin Ji

1138 Author Correction: miR-486 sustains NF- κ B activity by disrupting multiple NF- κ B-negative feedback loops

Libing Song, Chuyong Lin, Hui Gong, Chanjuan Wang, Liping Liu, Jueheng Wu, Sha Tao, Bo Hu, Shi-Yuan Cheng, Mengfeng Li, Jun Li

ADVANCE ONLINE PUBLICATION

Structures of active melanocortin-4 receptor–Gs-protein complexes with NDP- α -MSH and setmelanotide Open

Nicolas A. Heyder, Gunnar Kleinau, David Speck, Andrea Schmidt, Sarah Paisdzior, Michal Szczepek, Brian Bauer, Anja Koch, Monique Gallandi, Dennis Kwiatkowski, Jörg Bürger, Thorsten Mielke, Annette G. Beck-Sickinger, Peter W. Hildebrand, Christian M. T. Spahn, Daniel Hilger, Magdalena Schacherl, Heike Biebertmann, Tarek Hilal, Peter Kühnen, Brian K. Kobilka and Patrick Scheerer

Nuclear UHRF1 is a gate-keeper of cellular AMPK activity and function

Xiang Xu, Guangjin Ding, Caizhi Liu, Yuhang Ding, Xiaoxin Chen, Xiaoli Huang, Chen-Song Zhang, Shanxin Lu, Yunpeng Zhang, Yuanyong Huang, Zhaosu Chen, Wei Wei, Lujian Liao, Shu-Hai Lin, Jingya Li, Wei Liu, Jiwen Li, Sheng-Cai Lin, Xinran Ma and Jiemin Wong

A new type of ERGIC–ERES membrane contact mediated by TMED9 and SEC12 is required for autophagosome biogenesis

Shulin Li, Rui Yan, Jialu Xu, Shiqun Zhao, Xinyu Ma, Qiming Sun, Min Zhang, Ying Li, Jun-Jie Gogo Liu, Liangyi Chen, Sai Li, Ke Xu and Liang Ge

Cell Discovery

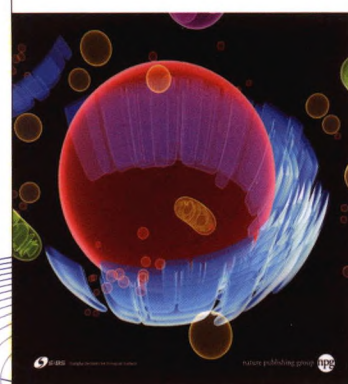
Making publication fun for you

Cell Discovery is an open access international journal that publishes results of high significance and broad interest in all areas of molecular and cell biology. The basic bar of acceptance is comparable to prestigious society journals in the respective field of the work. It is established in 2015 as a sister journal of *Cell Research*, a high-profile international journal with a current impact of 25.617. The new impact of *Cell Discovery* is 10.849.

Authors benefit from:

- Open Access Publication – anyone can download and read your paper
- Wide exposure to a large global audience on nature.com
- Internationally renowned editors and editorial board
- Quality peer-review and fast publication
- Indexed in Scopus and PubMed Central (PMC)
Science Citation Index Expanded (SciSearch®),
Journal Citation Reports/Science Edition

Cell Discovery



Editor-in-Chief: Dangsheng Li

Featured articles

Initial whole-genome sequencing and analysis of the host genetic contribution to COVID-19 severity and susceptibility

Cell Discov. 2020 Nov 10;6(1):83. doi: 10.1038/s41421-020-00231-4.

The differential immune responses to COVID-19 in peripheral and lung revealed by single-cell RNA sequencing

Cell Discov. 2020 Oct 20;6:73. doi: 10.1038/s41421-020-00225-2.

Immune cell profiling of COVID-19 patients in the recovery stage by single-cell sequencing

Cell Discov. 2020 May 4;6:31. doi: 10.1038/s41421-020-0168-9.

Phosphorylation of cGAS by CDK1 impairs self-DNA sensing in mitosis

Cell Discov. 2020 Apr 28;6:26. doi: 10.1038/s41421-020-0162-2.

Single-cell RNA sequencing reveals the heterogeneity of liver-resident immune cells in human

Cell Discov. 2020 Apr 28;6:22. doi: 10.1038/s41421-020-0157-z.

SUBMIT

Visit www.nature.com/celldisc/
to read the Published Papers and Submit Today!