

ISSN:1001-0602(Print) ISSN:1748-7838(Online) 细胞研究
CN:31-1568/Q(Print) CN:31-6000/Q(Online) CPDN:4-645

Cell Research



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

Volume 31 Number 2 February 2021

A comprehensive review on ferroptosis
AXL is a novel receptor for SARS-CoV-2
Revealing the mechanism and function of ER whorls
Discovery of a novel ESCRT-independent exosome pathway

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



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

Coordinating Editor for this issue
 Shushu Jiang

RESEARCH HIGHLIGHT

- 105 An exosome pathway without an ESCRT**
Candia M. Kenific, Haiying Zhang, David Lyden

REVIEW ARTICLE

- 107 Ferroptosis: molecular mechanisms and health implications** *Open*
Daolin Tang, Xin Chen, Rui Kang, Guido Kroemer

ARTICLES

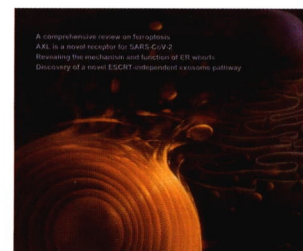
- 126 AXL is a candidate receptor for SARS-CoV-2 that promotes infection of pulmonary and bronchial epithelial cells** *Open*
Shuai Wang, Zongyang Qiu, Yingnan Hou, Xiya Deng, Wei Xu, Tingting Zheng, Peihan Wu, Shaofang Xie, Weixiang Bian, Chong Zhang, Zewei Sun, Kunpeng Liu, Chao Shan, Aifu Lin, Shibo Jiang, Youhua Xie, Qiang Zhou, Lu Lu, Jing Huang, Xu Li

- 141 COPII mitigates ER stress by promoting formation of ER whorls** *Open*
Fang Xu, Wanqing Du, Qin Zou, Yuting Wang, Xin Zhang, Xudong Xing, Ying Li, Dachuan Zhang, Huimin Wang, Wenhao Zhang, Xinyao Hu, Xin Liu, Xiaoling Liu, Shaojin Zhang, Jinqiang Yu, Jianhuo Fang, Fajin Li, Ying Zhou, Tieqiang Yue, Na Mi, Haiteng Deng, Peng Zou, Xiaowei Chen, Xuerui Yang, Li Yu

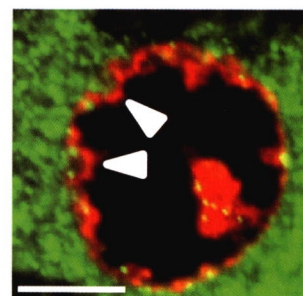
- 157 RAB31 marks and controls an ESCRT-independent exosome pathway** *Open*
Denghui Wei, Weixiang Zhan, Ying Gao, Liyan Huang, Run Gong, Wen Wang, Ruhua Zhang, Yuanzhong Wu, Song Gao, Tiebang Kang

- 178 Molecular subtyping and genomic profiling expand precision medicine in refractory metastatic triple-negative breast cancer: the FUTURE trial** *Open*
Yi-Zhou Jiang, Yin Liu, Yi Xiao, Xin Hu, Lin Jiang, Wen-Jia Zuo, Ding Ma, Jiahua Ding, Xiaoyu Zhu, Jianjun Zou, Claire Verschraegen, Daniel G. Stover, Virginia Kaklamani, Zhong-Hua Wang, Zhi-Ming Shao

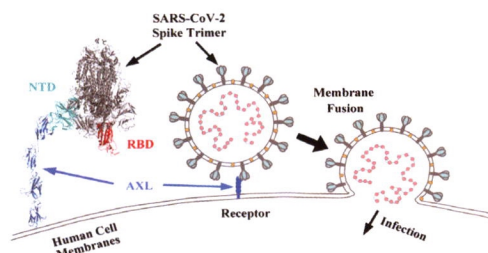
- 187 Stabilization of heterochromatin by CLOCK promotes stem cell rejuvenation and cartilage regeneration** *Open*
Chuguan Liang, Zunpeng Liu, Moshi Song, Wei Li, Zeming Wu, Zehua Wang, Qiaoran Wang, Si Wang, Kaowen Yan, Liang Sun, Tomoaki Hishida, Yanning Cai, Juan Carlos Izpisua Belmonte, Pedro Guillen, Piu Chan, Qi Zhou, Weiqi Zhang, Jing Qu, Guang-Hui Liu



Cover: Formation of ER whorls by COPII machinery is a new type of UPR response. See page 141-156 by Fang Xu et al. for details.



Representative image of MVE membrane budding to form ILVs driven by the active RAB31 in NCI-H1975 cells. See page 157-177 by Denghui Wei et al. for details.



Schematic overview of AXL-mediated SARS-CoV-2 receptor recognition and/or membrane fusion. See page 126-140 by Shuai Wang et al. for details.

- 206** **A virus-induced conformational switch of STAT1-STAT2 dimers boosts antiviral defenses** *Open*
Yuxin Wang, Qiaoling Song, Wei Huang, Yuxi Lin, Xin Wang, Chenyao Wang, Belinda Willard, Chenyang Zhao, Jing Nan, Elise Holvey-Bates, Zhuoya Wang, Derek Taylor, Jinbo Yang, George R. Stark
- 219** **Active RNA interference in mitochondria**
Kuanxing Gao, Man Cheng, Xinxin Zuo, Jinzhong Lin, Kurt Hoogewijs, Michael P. Murphy, Xiang-Dong Fu, Xiaorong Zhang

LETTERS TO THE EDITOR

- 229** **Effective treatment of SARS-CoV-2-infected rhesus macaques by attenuating inflammation** *Open*
Shuaiyao Lu, Jingjing Zhao, Jiebin Dong, Hongqi Liu, Yinhua Zhu, Honggang Li, Liping Liu, Yun Yang, Shicheng Sun, Yifan Song, Yuan Zhao, Ruiping She, Tuoping Luo, Hongkui Deng, Xiaozhong Peng

ADVANCE ONLINE PUBLICATION

Cartilage oligomeric matrix protein is an endogenous β -arrestin-2-selective allosteric modulator of AT1 receptor counteracting vascular injury *Open*

Yi Fu, Yaqian Huang, Zhao Yang, Yufei Chen, Jingang Zheng, Chenfeng Mao, Zhiqing Li, Zhixin Liu, Bing Yu, Tuoyi Li, Meili Wang, Chanjuan Xu, Yiwei Zhou, Guizhen Zhao, Yiting Jia, Wei Guo, Xin Jia, Tao Zhang, Li Li, Ziyi Liu, Shengchao Guo, Mingliang Ma, Heng Zhang, Bo Liu, Junbao Du, Wengong Wang, Chaoshu Tang, Pei Gao, Qingbo Xu, Xian Wang, Jianfeng Liu, Jinpeng Sun and Wei Kong

The m⁶A methylome of SARS-CoV-2 in host cells *Open*

Jun'e Liu, Yan-Peng Xu, Kai Li, Qing Ye, Hang-Yu Zhou, Hanxiao Sun, Xiaoyu Li, Liu Yu, Yong-Qiang Deng, Rui-Ting Li, Meng-Li Cheng, Bo He, Jia Zhou, Xiao-Feng Li, Aiping Wu, Chengqi Yi and Cheng-Feng Qin

Mispair-bound human MutS–MutL complex triggers DNA incisions and activates mismatch repair *Open*

Janice Ortega, Grace Sanghee Lee, Liya Gu, Wei Yang and Guo-Min Li

- 233** **Mitochondrial replacement in macaque monkey offspring by first polar body transfer**
Zhanyang Wang, Yuzhuo Li, Xianfa Yang, Yan Wang, Yanhong Nie, Yuting Xu, Xiaotong Zhang, Yong Lu, Tikui Zhang, Qiming Liu, Naihe Jing, Zhen Liu, Qiang Sun

- 237** **Lateral transfer of mRNA and protein by migrasomes modifies the recipient cells** *Open*

Mingli Zhu, Qin Zou, Rongyao Huang, Ying Li, Xudong Xing, Jianhuo Fang, Liang Ma, Lifei Li, Xuerui Yang, Li Yu

CORRECTION

- 241** **Author Correction: N⁶-methyladenine is incorporated into mammalian genome by DNA polymerase**

Xiaoling Liu, Weiyei Lai, Yao Li, Shaokun Chen, Baodong Liu, Ning Zhang, Jiezheng Mo, Cong Lyu, Jing Zheng, Ya-Rui Du, Guibin Jiang, Guo-Liang Xu, Hailin Wang

Cell Discovery

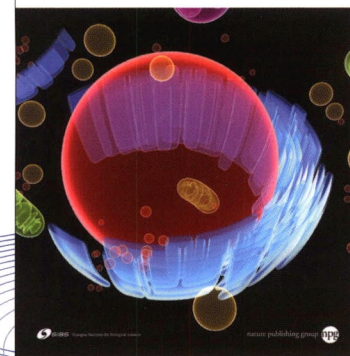
Making publication fun for you

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 20.507. The new impact of *Cell Discovery* is 6.255.

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!