

Cell Research

Volume 33 Number 4 April 2023

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



QK2257873

A novel gut-secreted hormone promotes adaptations to fasting
Cryo-EM structures of human IFT-A complexes
Mitochondria-localized cGAS suppresses ferroptosis
Structural insights into complement receptor C5aR1 signaling

ISSN 1001-0602



9 771001 060252

Center for Excellence in Molecular Cell Science
Chinese Academy of Sciences
The Chinese Society for Cell Biology

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

© 2023 CEMCS, CAS



Affiliated with:

The Chinese Society for Cell Biology since August 2007



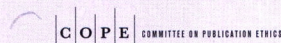
Granted by:

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

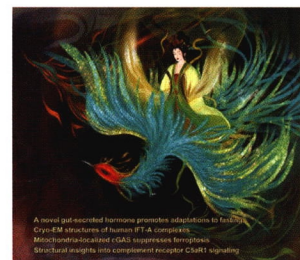
Coordinating Editor for this issue
Fangfang Hu

RESEARCH HIGHLIGHTS

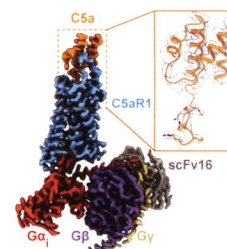
- 263 cGASing mitochondria to fend off ferroptosis**
Hua Wang, Xuejun Jiang
- 265 Crank up the volume: Osmotic stress induces WNK1 phase separation**
Ji-Ung Jung, Clinton A. Taylor IV, Melanie H. Cobb
- 267 Life mimics art**
Muthukumaran Venkatachalapathy, Craig M. Crews
- 269 Transcription initiation by the ERRs: no ligand but two activation pathways**
Vincent Giguère
- 271 tRNA-m¹A modification: a translational checkpoint for T cell expansion**
Weike Pei, Vijay K. Kuchroo

ARTICLES

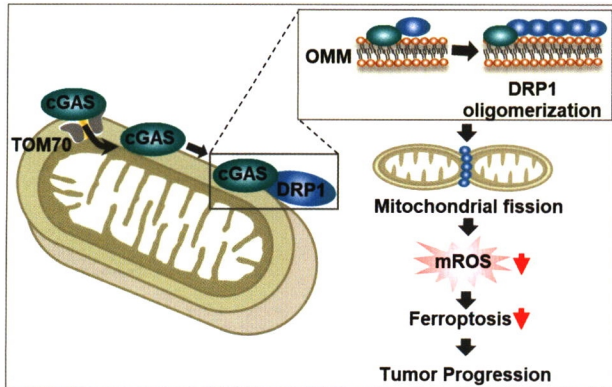
- 273 Famsin, a novel gut-secreted hormone, contributes to metabolic adaptations to fasting via binding to its receptor OLF796**
Aijun Long, Yang Liu, Xinlei Fang, Liangjie Jia, Zhiyuan Li, Jiang Hu, Shuang Wu, Chao Chen, Ping Huang, Yiguo Wang
- 288 Human IFT-A complex structures provide molecular insights into ciliary transport**
Open
Meiqin Jiang, Vivek Reddy Palicharla, Darcie Miller, Sun-Hee Hwang, Hanwen Zhu, Patricia Hixson, Saikat Mukhopadhyay, Ji Sun
- 299 Mitochondria-localized cGAS suppresses ferroptosis to promote cancer progression**
Shiqiao Qiu, Xiuying Zhong, Xiang Meng, Shiting Li, Xiaoyu Qian, Hui Lu, Jin Cai, Yi Zhang, Mingjie Wang, Zijian Ye, Huafeng Zhang, Ping Gao
- 312 Mechanism of activation and biased signaling in complement receptor C5aR1**
Open
Yuying Feng, Chang Zhao, Yue Deng, Heli Wang, Liang Ma, Sicen Liu, Xiaowen Tian, Bo Wang, Yan Bin, Peipei Chen, Wei Yan, Ping Fu, Zhenhua Shao



Cover: The image shows a Chinese fairy tale, the "Blue Bird as a messenger", wherein Blue Bird delivers messages for Xiwangmu (the Immortal Queen Mother). The Blue Bird is reminiscent of famsin, a novel gut-secreted hormone, which mediates communication between the intestine and other organs to promote metabolic adaptations to fasting and enhance animal survival when food is scarce. See page 273–287 by Aijun Long et al. for details.



Cryo-EM maps of C5a-bound C5aR1-G_i complexes. See page 312–324 by Yuying Feng et al. for details.



Schematic cartoon showing that mitochondria-localized cGAS interacts with DRP1 to facilitate its oligomerization and function, thus preventing mitochondrial ROS accumulation and ferroptosis. See page 299–311 by Shiqiao Qiu et al. for details.

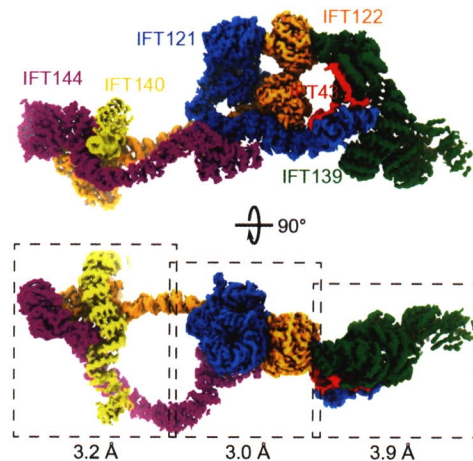
328 Structural basis of sRNA RsmZ regulation of *Pseudomonas aeruginosa* virulence

Xinyu Jia, Zhiling Pan, Yang Yuan, Bingnan Luo, Yongbo Luo, Sunandan Mukherjee, Guowen Jia, Liu Liu, Xiaobin Ling, Xiting Yang, Zhichao Miao, Xiawei Wei, Janusz M. Bujnicki, Kelei Zhao, Zhaoming Su

LETTERS TO THE EDITOR

325 Aspirin protects against genotoxicity by promoting genome repair *Open*

Hui Jiang, Patrycja Swacha, Kyaw Min Aung, Nelson O. Gekara



Cryo-EM density of the IFT-A complex. See page 288–298 by Meiqin Jiang et al. for details.

ADVANCE ONLINE PUBLICATION

Disruption of ER ion homeostasis maintained by an ER anion channel CLCC1 contributes to ALS-like pathologies *Open*

Liang Guo, Qionglei Mao, Ji He, Xiaoling Liu, Xuejiao Piao, Li Luo, Xiaoxu Hao, Hanzhi Yu, Qiang Song, Bailong Xiao, Dongsheng Fan, Zhaobing Gao and Yichang Jia

Dietary cysteine drives body fat loss via FMRamide signaling in *Drosophila* and mouse *Open*

Tingting Song, Wusa Qin, Zeliang Lai, Haoyu Li, Daihan Li, Baojia Wang, Wuquan Deng, Tingzhang Wang, Liming Wang and Rui Huang

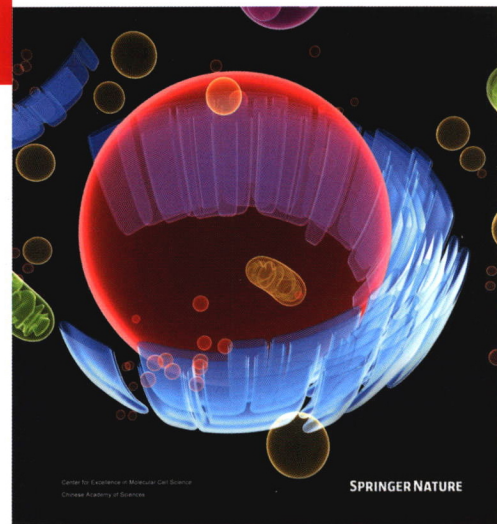
Editor-in-Chief: Dangsheng Li

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 the major sister journals of Cell/Nature/Science. It is established in 2015 as a sister journal of Cell Research, a high-profile international journal with a current impact of 46.297. The new impact of Cell Discovery is 38.097.

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



Featured Papers



Structural insights into a shared mechanism of human STING activation by a potent agonist and an autoimmune disease-associated mutation
Cell Discov. 2022;8:133. doi: 10.1038/s41421-022-00481-4.



Surface translocation of ACE2 and TMPRSS2 upon TLR4/7/8 activation is required for SARS-CoV-2 infection in circulating monocytes
Cell Discov. 2022;8:89. doi: 10.1038/s41421-022-00453-8.



A bipotential organoid model of respiratory epithelium recapitulates high infectivity of SARS-CoV-2 Omicron variant
Cell Discov. 2022;8:57. doi: 10.1038/s41421-022-00422-1.



Dynamic O-GlcNAcylation coordinates ferritinophagy and mitophagy to activate ferroptosis
Cell Discov. 2022;8:40. doi: 10.1038/s41421-022-00390-6.



SARS-CoV-2 uses metabotropic glutamate receptor subtype 2 as an internalization factor to infect cells
Cell Discov. 2021;7:119. doi: 10.1038/s41421-021-00357-z.



Identification of an intraocular microbiota
Cell Discov. 2021;7:13. doi: 10.1038/s41421-021-00245-6.