

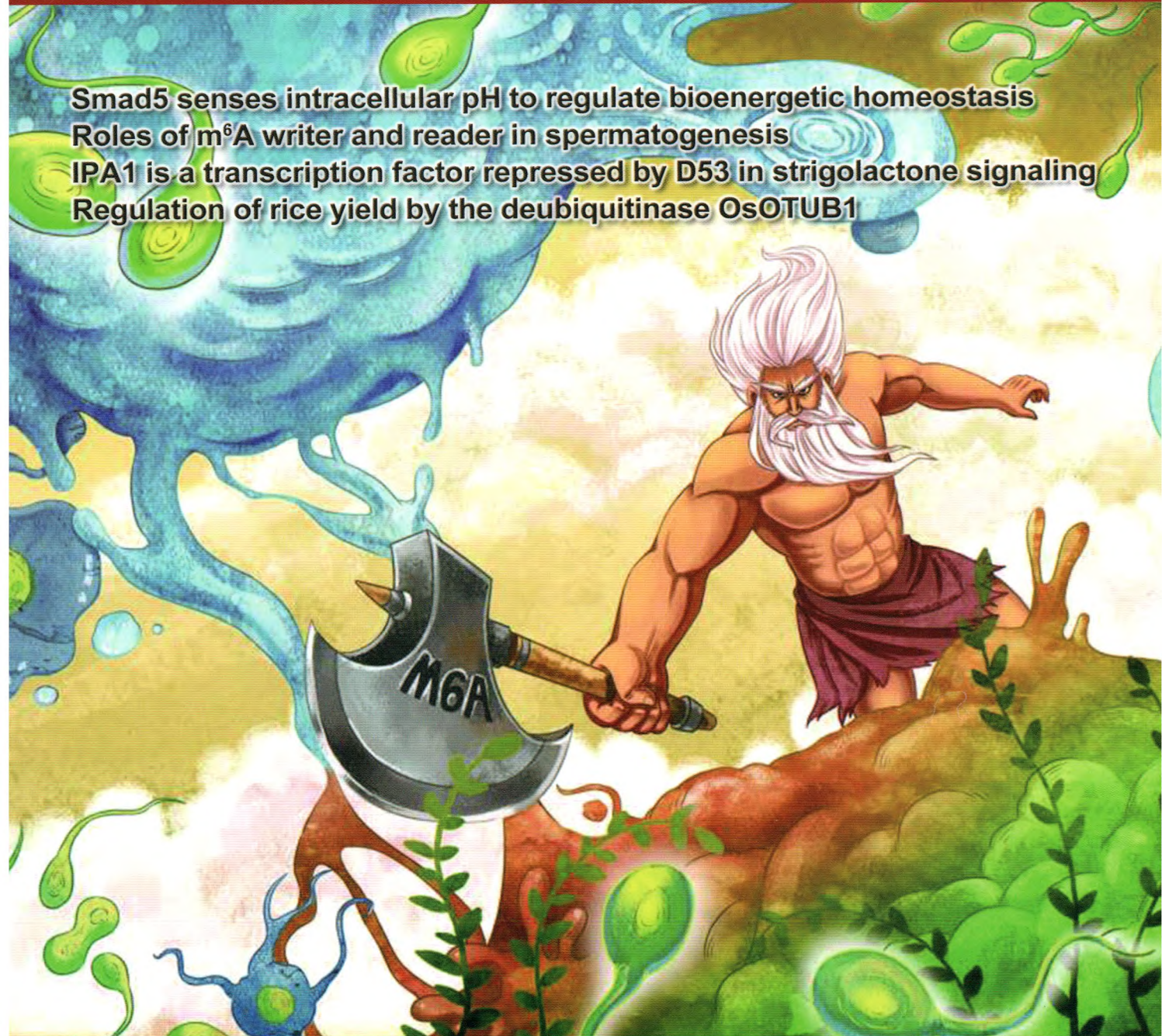
Cell Research



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Smad5 senses intracellular pH to regulate bioenergetic homeostasis
Roles of m⁶A writer and reader in spermatogenesis
IPA1 is a transcription factor repressed by D53 in strigolactone signaling
Regulation of rice yield by the deubiquitinase OsOTUB1



(Founded in 1990)

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SPRINGER NATURE

Coordinating Editor for this issue
Jiajun Xu

RESEARCH HIGHLIGHTS

1075 SMAD5 signaling: more than meets the nuclei

John Orlowski

1077 An mRNA-based vaccine strategy against Zika

Gary Wong, George F Gao

1079 Threading an elephant through the eye of a needle: Where are platelets made?

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1081 Ripped for neuroinflammation

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ORIGINAL ARTICLES

1083 Smad5 acts as an intracellular pH messenger and maintains bioenergetic homeostasis *Open*

Yujiang Fang, Zhongliang Liu, Zhenyu Chen, Xiangjie Xu, Mengtao Xiao, Yanyan Yu, Yuanyuan Zhang, Xiaobai Zhang, Yanhua Du, Cizhong Jiang, Yuzheng Zhao, Yiran Wang, Beibei Fan, Daniel Terheyden-Keighley, Yang Liu, Lei Shi, Yi Hui, Xin Zhang, Bowen Zhang, Hexi Feng, Lin Ma, Quanbin Zhang, Guohua Jin, Yi Yang, Bin Xiang, Ling Liu, Xiaoqing Zhang

1100 Mettl3-mediated m⁶A regulates spermatogonial differentiation and meiosis initiation

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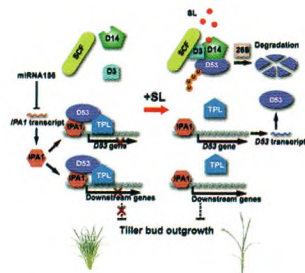
1115 Ythdc2 is an N⁶-methyladenosine binding protein that regulates mammalian spermatogenesis

Phillip J Hsu, Yunfei Zhu, Honghui Ma, Yueshuai Guo, Xiaodan Shi, Yuanyuan Liu, Meijie Qi, Zhike Lu, Hailing Shi, Jianying Wang, Yiwei Cheng, Guanzheng Luo, Qing Dai, Mingxi Liu, Xuejiang Guo, Jiahao Sha, Bin Shen, Chuan He

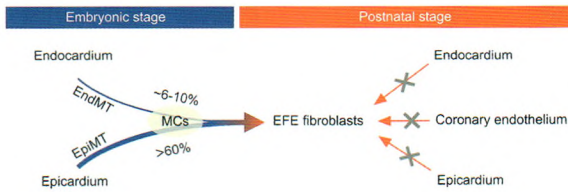
1128 IPA1 functions as a downstream transcription factor repressed by D53 in strigolactone signaling in rice *Open*



Cover: The cover uses a Chinese fairy tale 'Pangu Separates the Sky from the Earth' to depict our finding where Mettl3 (Pangu) adds m⁶A (the Axe) into mRNA (the Handle), helping split diploid spermatogonia into haploid sperms (Sky and Earth). See page 1100-1114 by Kai Xu *et al.* for details.



Perception of strigolactone leads to D53 degradation by the proteasome system, which in turn derepresses IPA1-regulated gene expression, resulting in strigolactone response and rice tillering suppression. See page 1128-1141 by Xiaoguang Song *et al.* for details.



Majority of subendocardial EFE fibroblasts are derived from embryonic MCs, which are derivatives of endocardium via EndMT and epicardium via EpiMT. See page 1157-1177 by Hui Zhang *et al.* for details.

Xiaoguang Song, Zefu Lu, Hong Yu, Gaoneng Shao,
Jinsong Xiong, Xiangbing Meng, Yanhui Jing,
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Jiayang Li

1142 Non-canonical regulation of SPL transcription factors by a human OTUB1-like deubiquitinase defines a new plant type rice associated with higher grain yield **Open**

Shuansuo Wang, Kun Wu, Qian Qian, Qian Liu, Qi Li,
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1157 Fibroblasts in an endocardial fibroelastosis disease model mainly originate from mesenchymal derivatives of epicardium

Hui Zhang, Xiuzhen Huang, Kuo Liu, Juan Tang,
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Xueying Tian, Yue Wang, Libo Zhang, Ying Yu,
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1178 Genetic enhancement in cultured human adult stem cells conferred by a single nucleotide recoding

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Piu Chan, Juan Carlos Izpisua Belmonte, Jing Qu,
Fuchou Tang, Guang-Hui Liu

1182 Receptor-like protein ELT1 promotes brassinosteroid signaling through interacting with and suppressing the endocytosis-mediated degradation of receptor BRI1

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ADVANCE ONLINE PUBLICATION (published weekly on Tuesday and Friday) 1 SEPTEMBER 2017

Genome-wide identification of histone H2A and histone variant H2A.Z-interacting proteins by bPPI-seq

Yi Zhang, Wai Lim Ku, Shuai Liu, Kairong Cui, Wenfei Jin, Qingsong Tang, William Lu, Bing Ni and Keji Zhao

doi:10.1038/cr.2017.112

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Enhanced base editing by co-expression of free uracil DNA glycosylase inhibitor **Open**

Bei Yang, Li Yang and Jia Chen

doi:10.1038/cr.2017.111

25 AUGUST 2017

Cryo-EM structure of human DNA-PK holoenzyme

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

doi:10.1038/cr.2017.110

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