

利用猪图形泛基因组与结构变异解析抗逆性和重要经济性状形成的遗传基础

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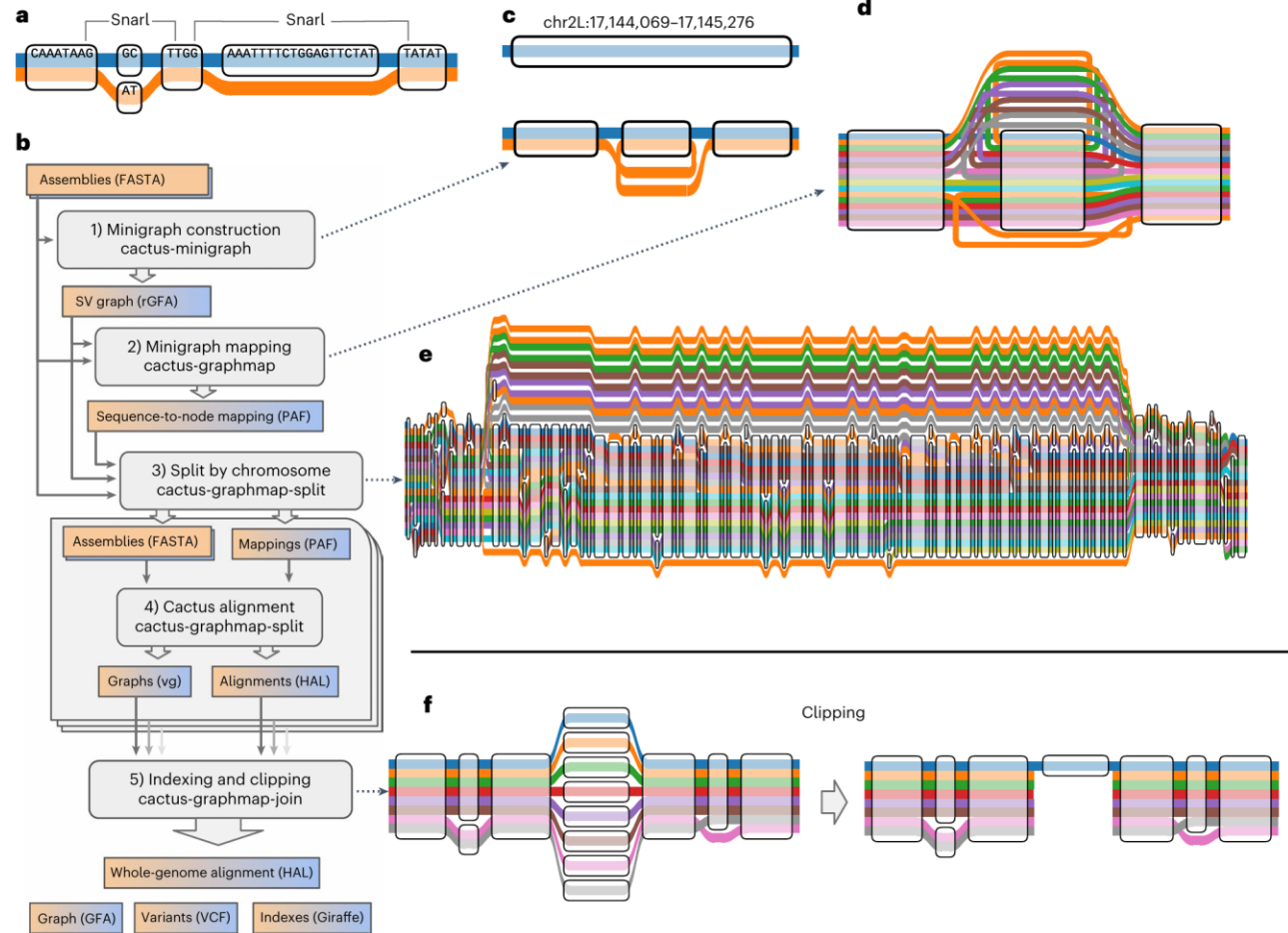
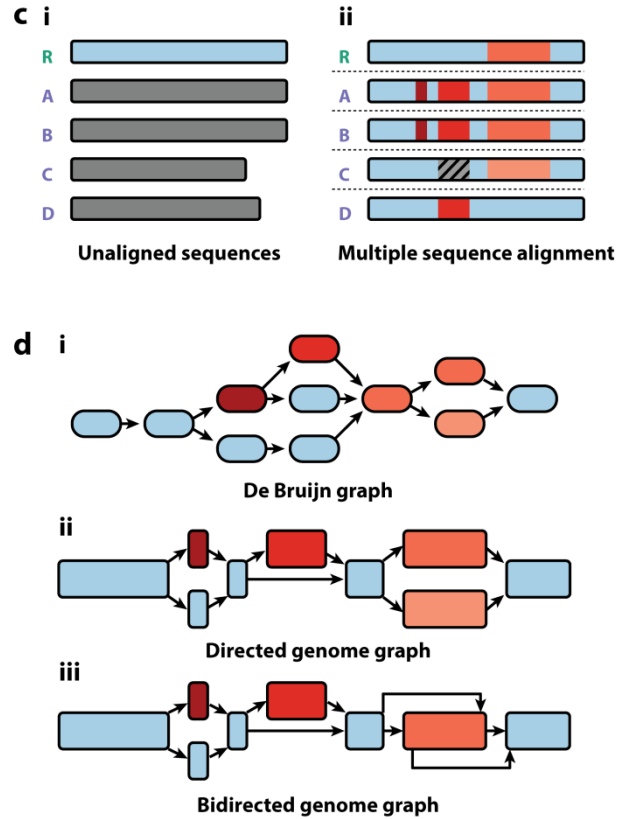
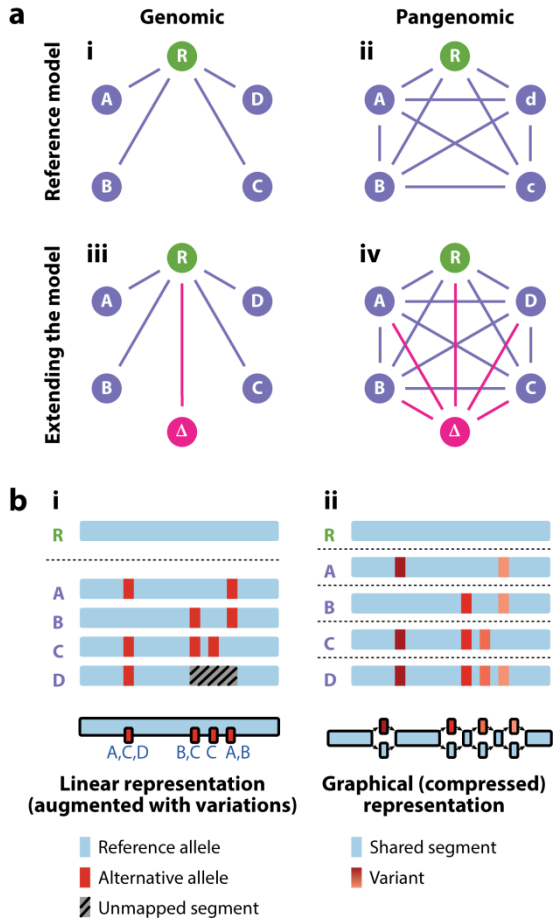
⁸ 瓦赫宁根大学及研究中心动物育种与基因组学系 荷兰



Dong Li, Yulong Wang, Tiantian Yuan, Minghao Cao, Yulin He, Lin Zhang, Xiang Li et al. 2024. "Pangenome and genome variations analysis of pigs unveil genomic facets for its adaptation and agronomic characteristics." *iMeta* 3: e257. <https://doi.org/10.1002/imt2.257>

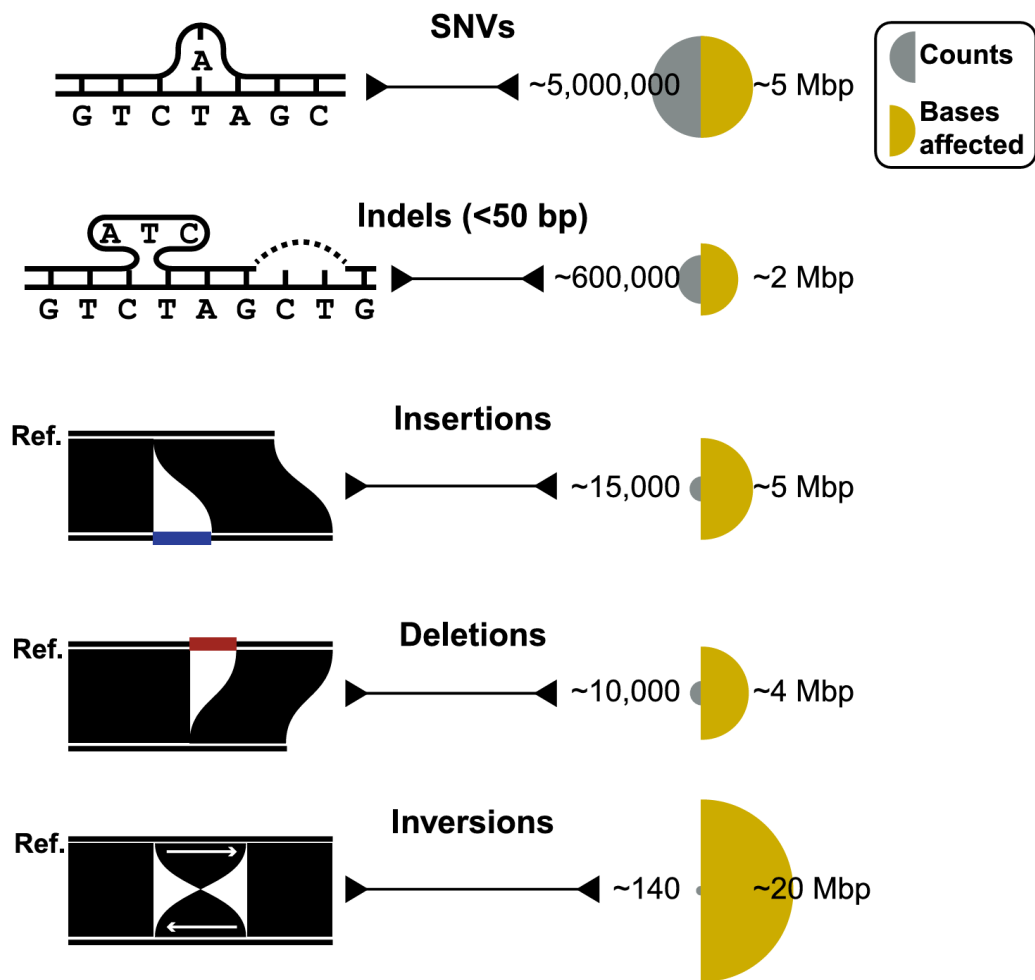


背景: 图形泛基因组





背景: 结构变异



Porubsky et al. *Cell*, 2024

Yang et al. *Genome Biology* (2024) 25:116
<https://doi.org/10.1186/s13059-024-03253-3>

Genome Biology

RESEARCH

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Mapping and functional characterization of structural variation in 1060 pig genomes



Liu Yang^{1,2†}, Hongwei Yin^{1†}, Lijing Bai^{1†}, Wenye Yao¹, Tan Tao¹, Qianyi Zhao¹, Yahui Gao², Jinyan Teng³, Zhiting Xu³, Qing Lin³, Shuqi Diao³, Zhangyuan Pan⁴, Dailu Guan⁴, Bingjie Li⁵, Huaijun Zhou⁴, Zhongyin Zhou⁶, Fuping Zhao⁷, Qishan Wang⁸, Yuchun Pan⁸, Zhe Zhang³, Kui Li^{1*}, Lingzhao Fang^{9*} and George E. Liu^{2*}

Yang et al. 2024, *Genome Biology*

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Article

Pangenome obtained by long-read sequencing of 11 genomes reveal hidden functional structural variants in pigs

Yi-Fan Jiang,^{1,7} Sheng Wang,^{2,7} Chong-Long Wang,^{3,7} Ru-Hai Xu,^{4,7} Wen-Wen Wang,⁵ Yao Jiang,^{1,3} Ming-Shan Wang,² Li Jiang,¹ Li-He Dai,⁴ Jie-Ru Wang,³ Xiao-Hong Chu,⁴ Yong-Qing Zeng,⁵ Ling-Zhao Fang,⁶ Dong-Dong Wu,² Qin Zhang,⁵ and Xiang-Dong Ding^{1,8,*}

Jiang et al. *iScience*, 2023

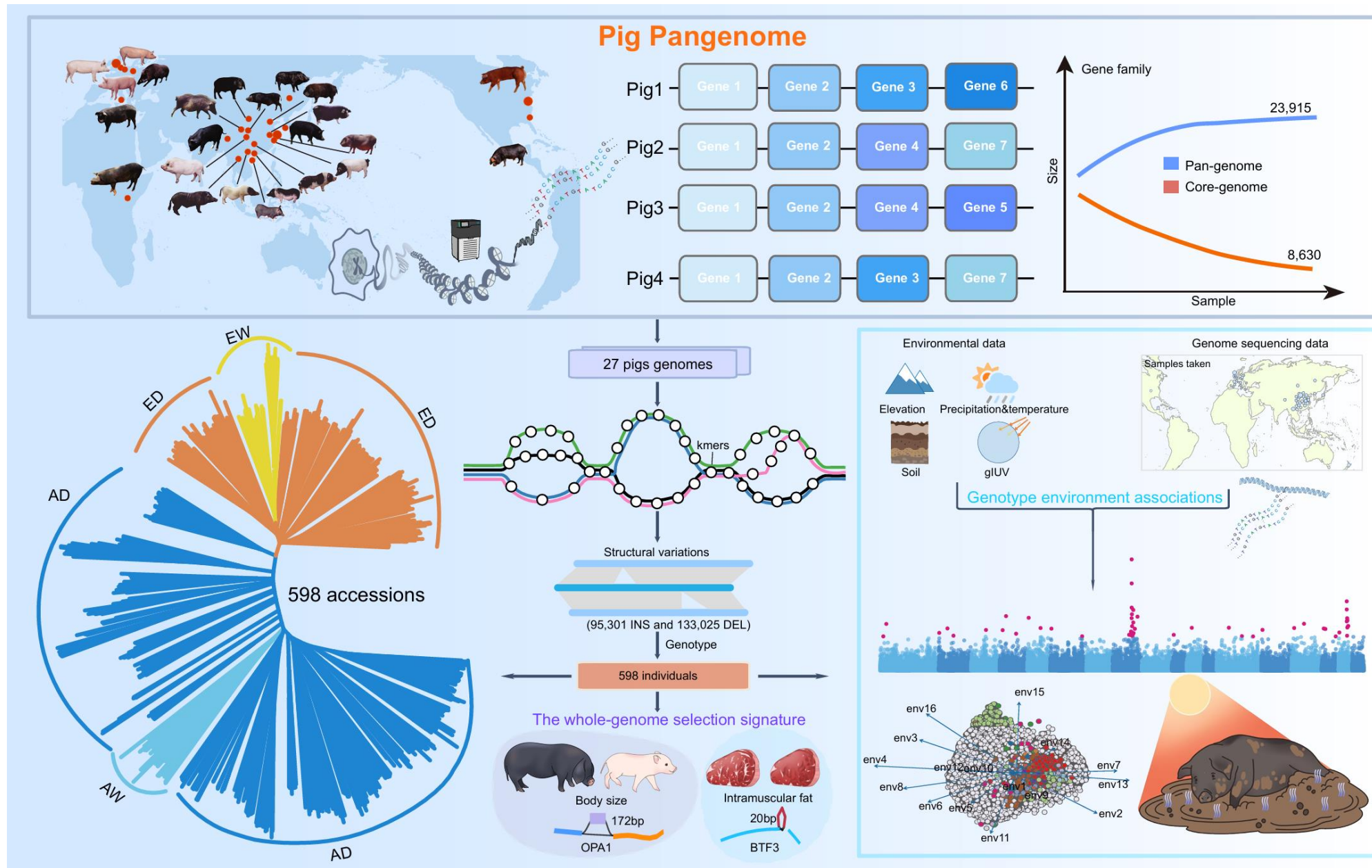


亮点

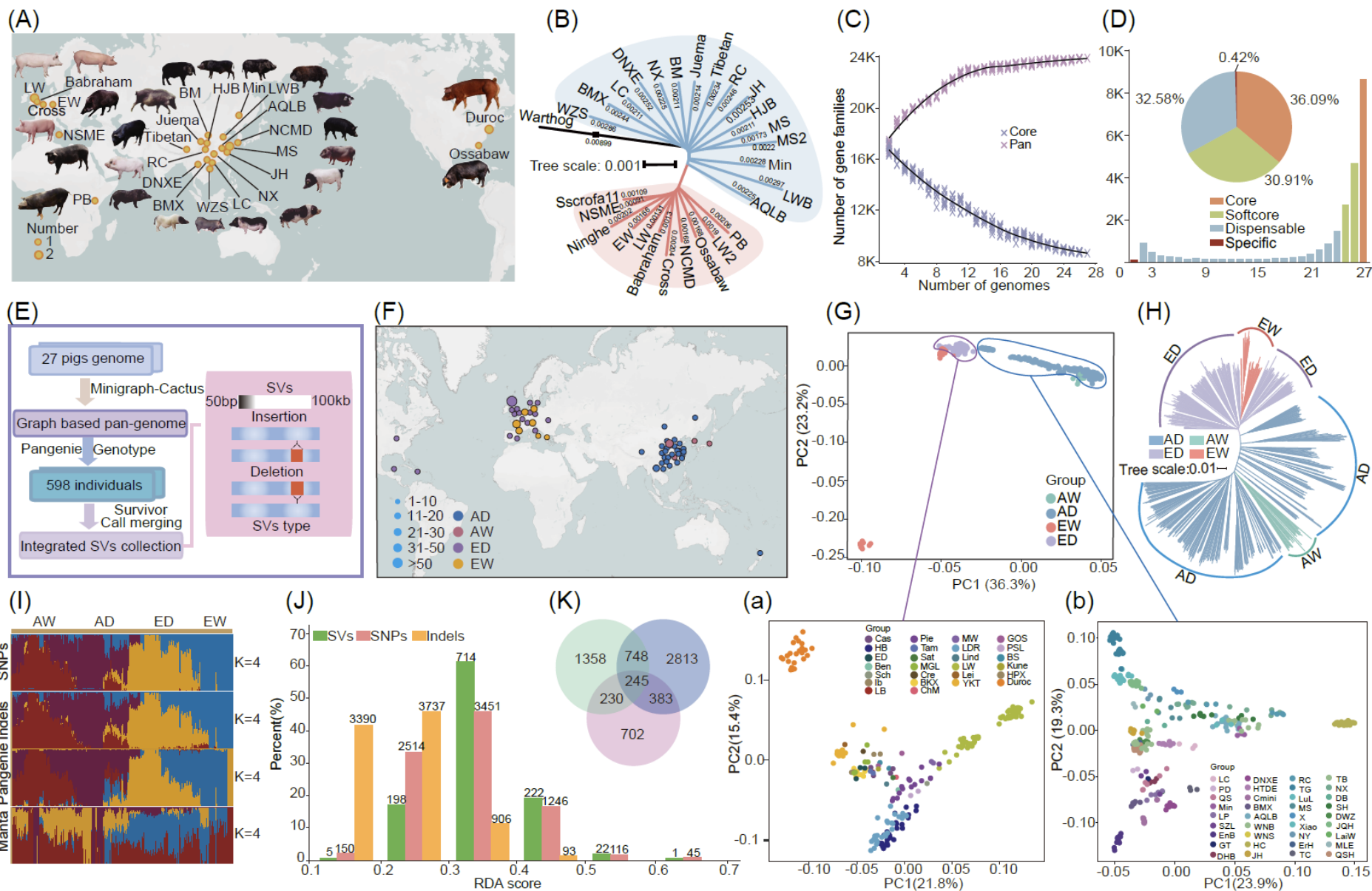
- ❑ 构建了迄今为止包含个体数最多的猪图形泛基因组
- ❑ BTF3是调节猪肌肉脂肪沉积和肉质的关键候选基因
- ❑ 基因组结构变异调控猪抗逆性和重要经济性状的形成



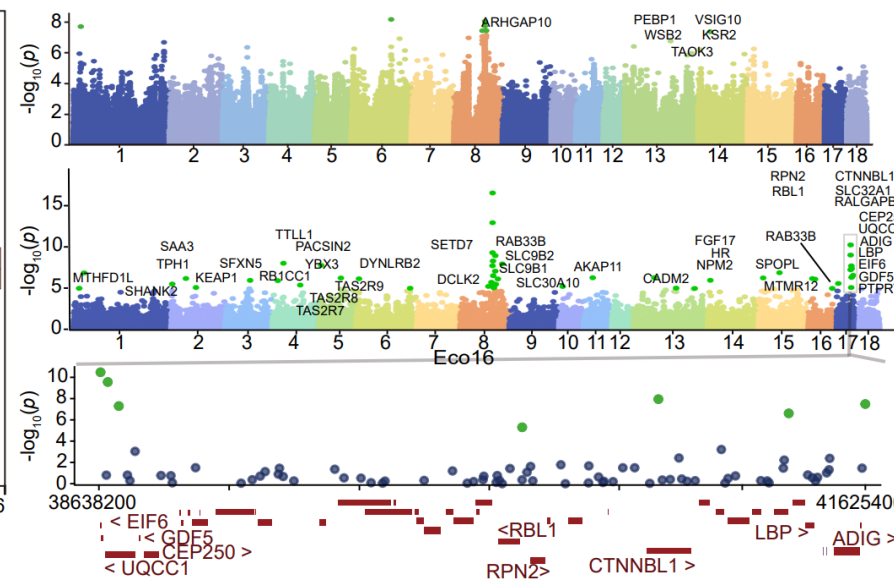
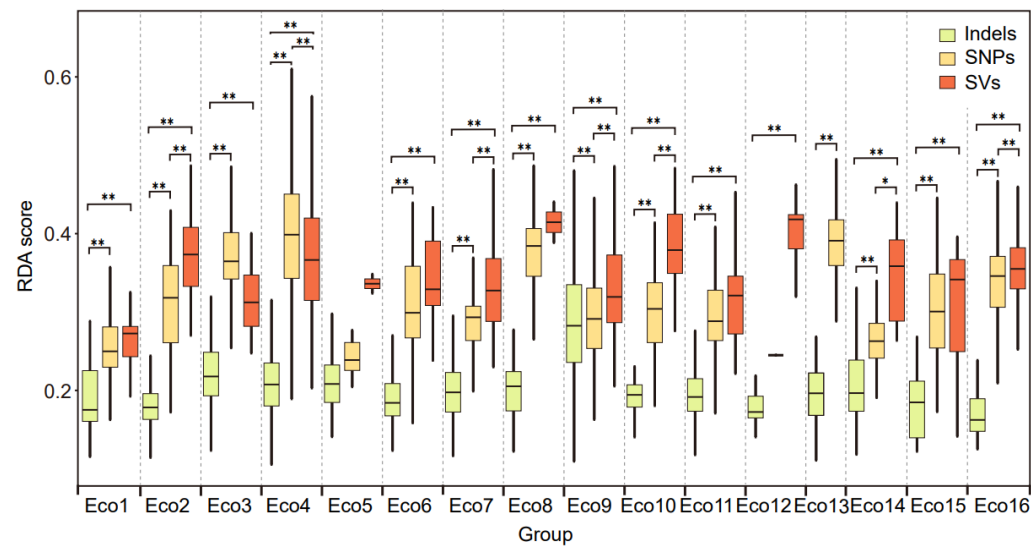
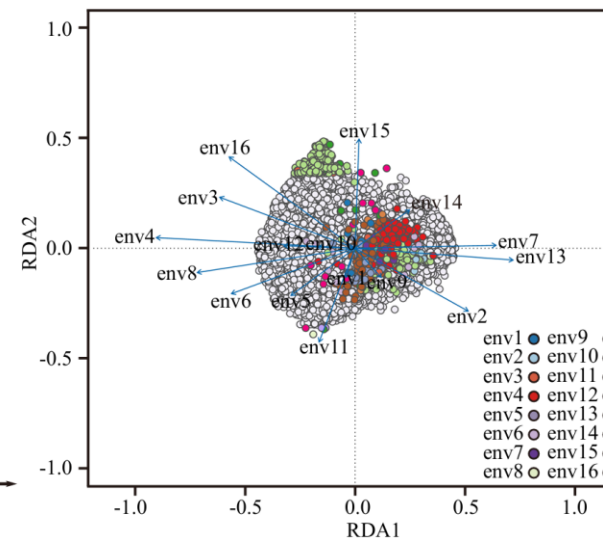
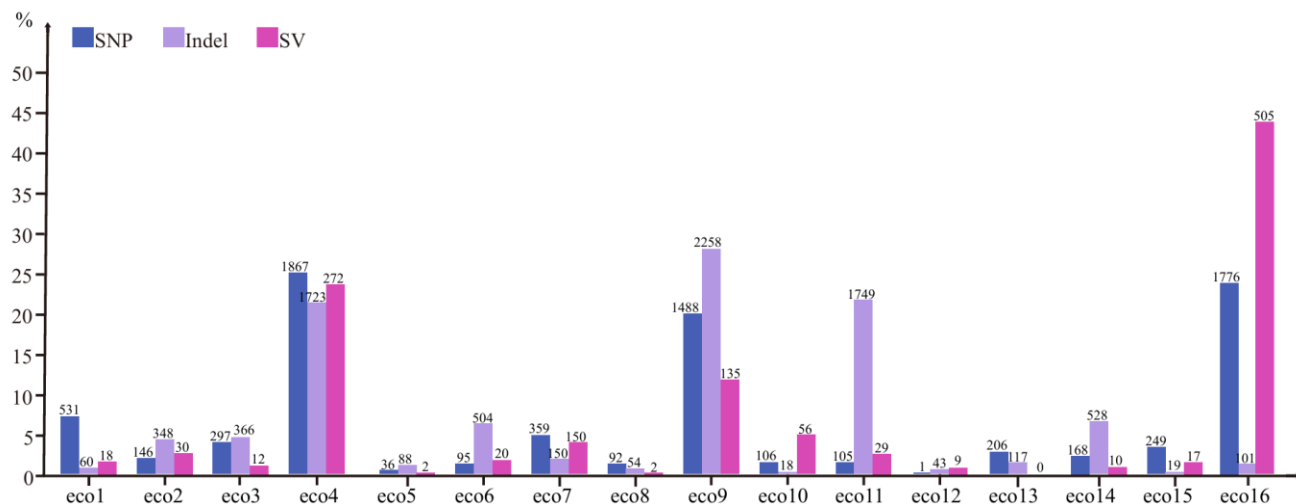
介绍



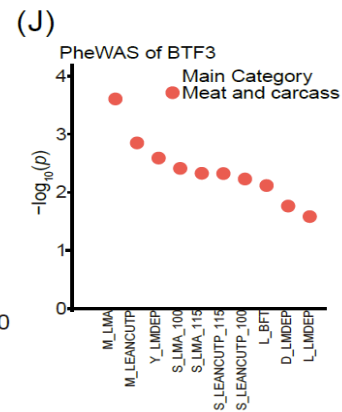
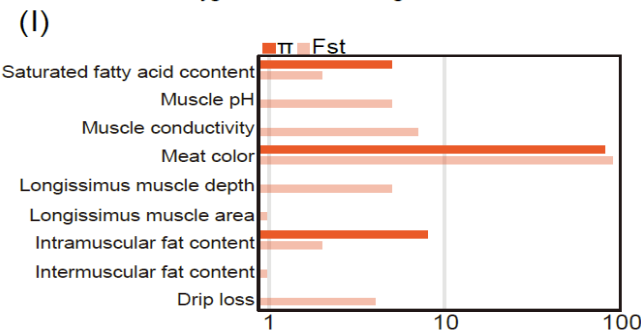
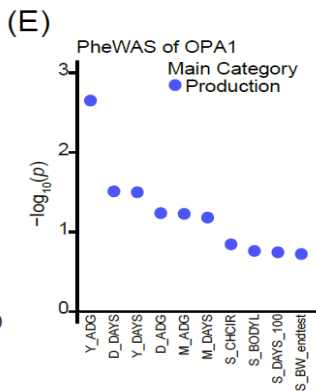
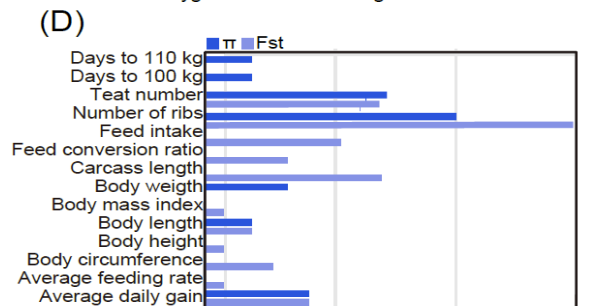
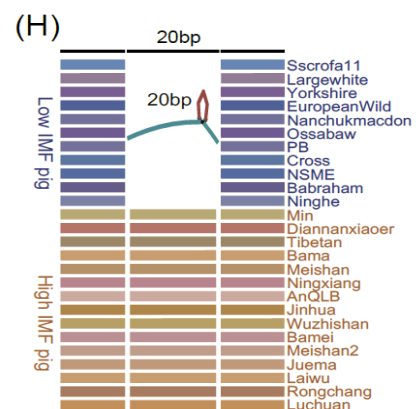
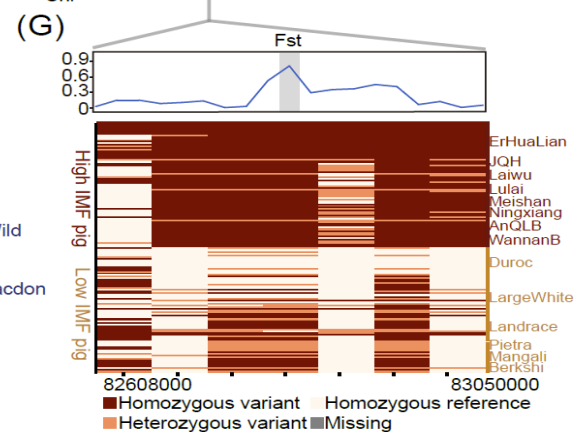
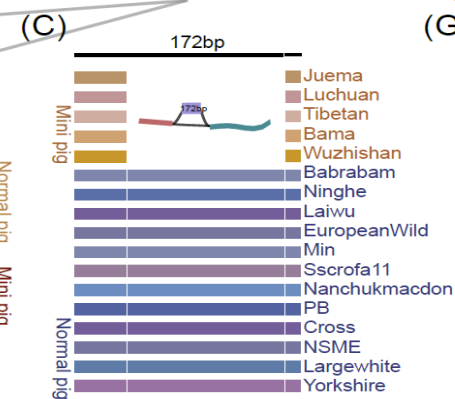
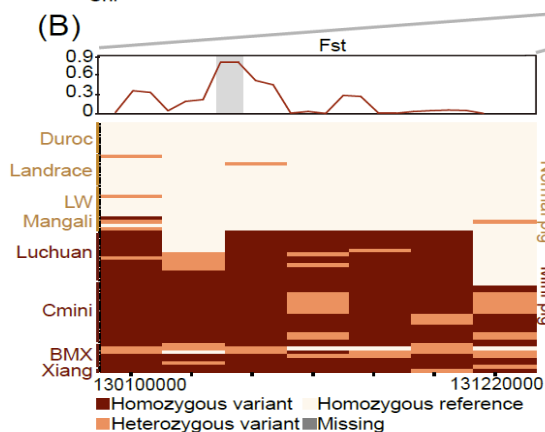
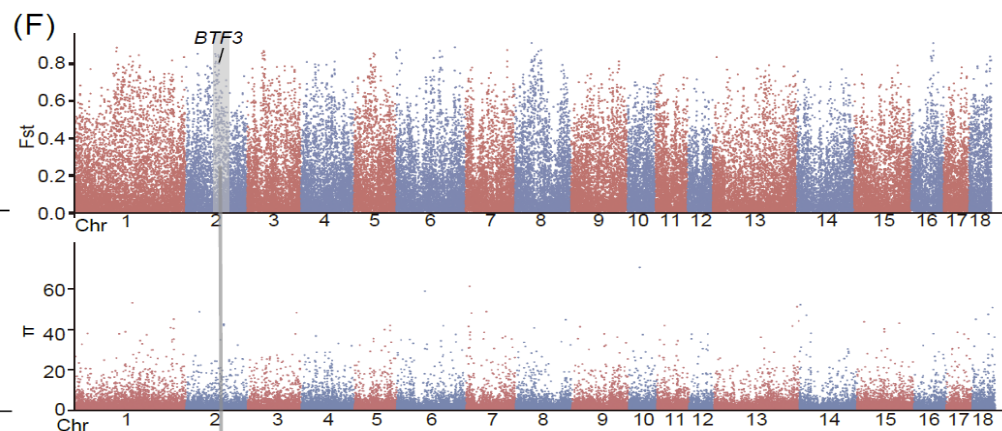
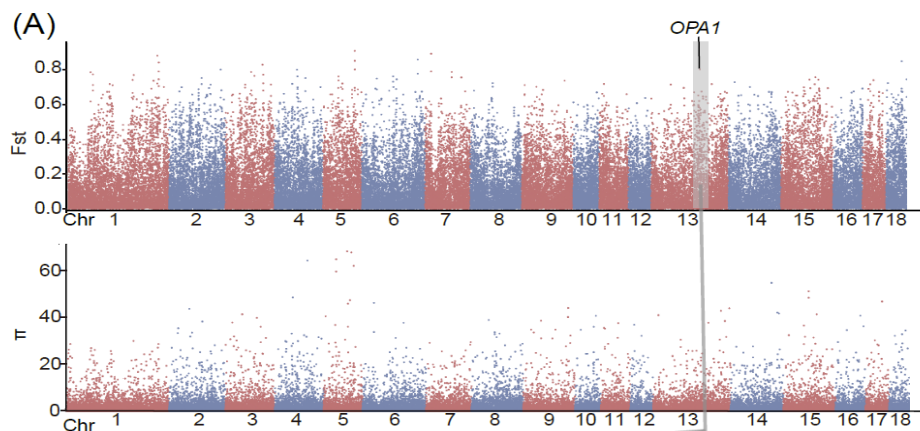
结果: 猪图形泛基因组和结构变异分析



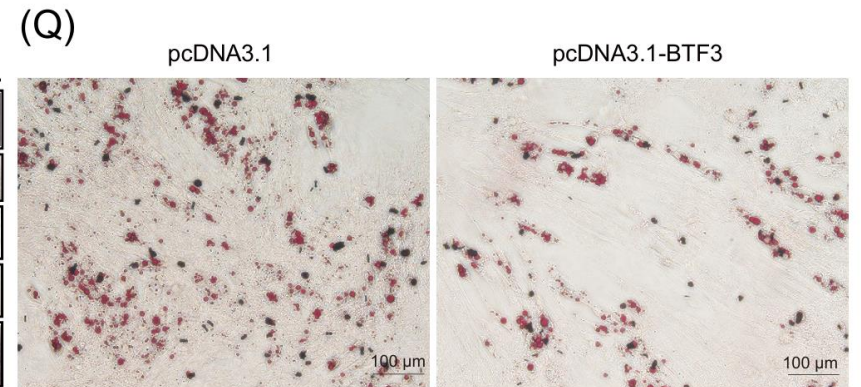
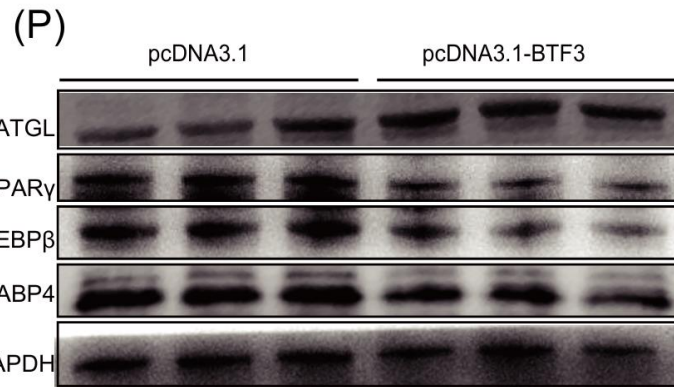
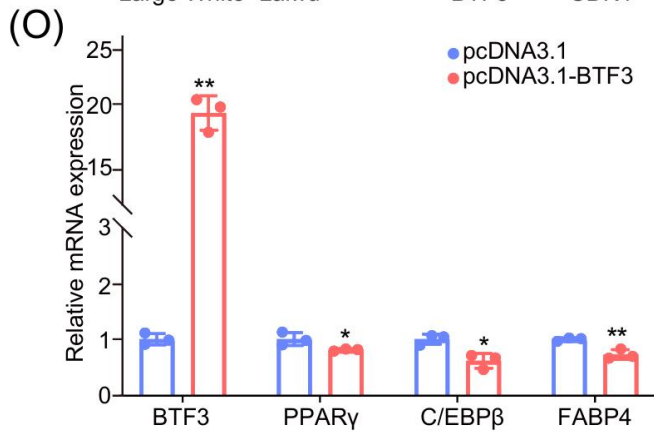
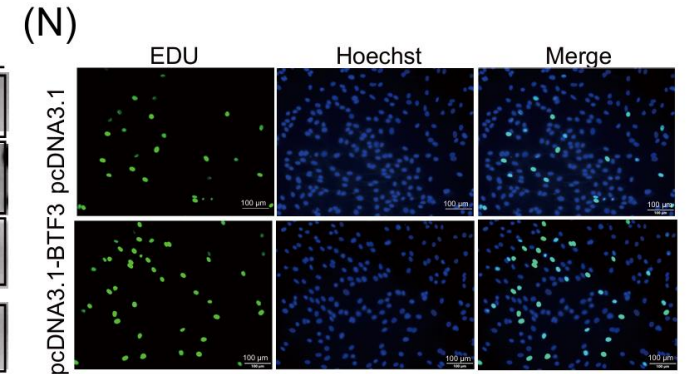
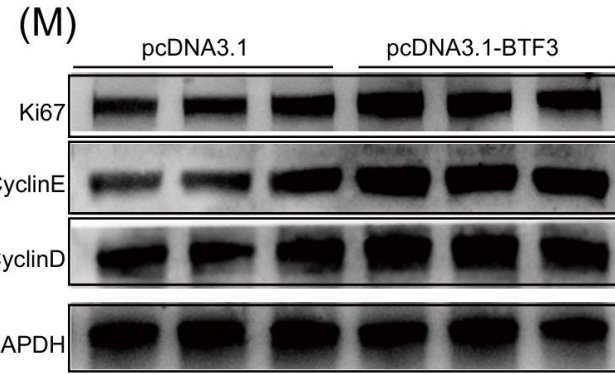
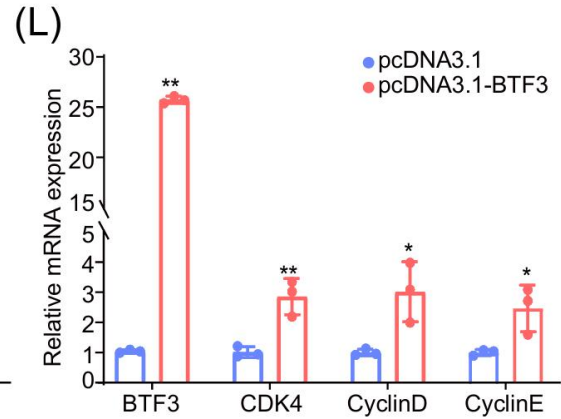
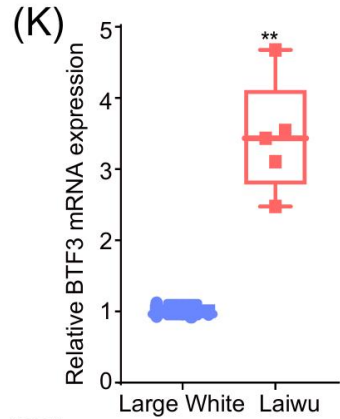
结果: 结构变异在适应性中的分析



结果: 受选择分析



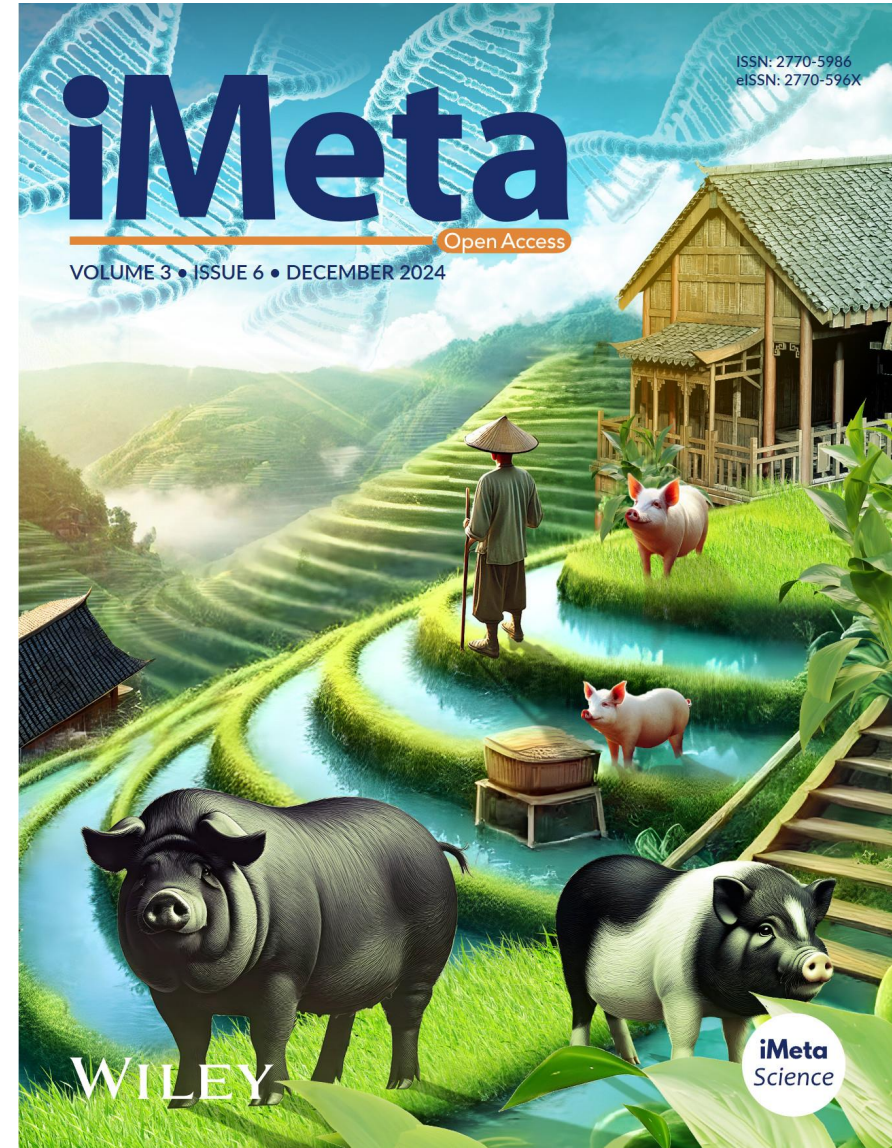
Results : *BTF3*基因功能研究



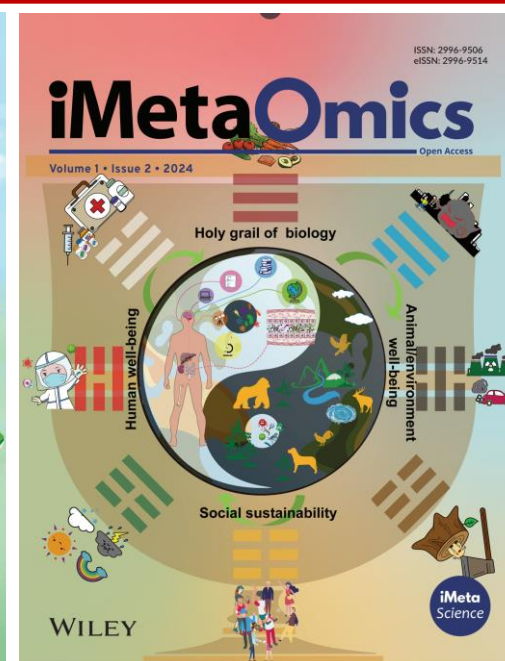
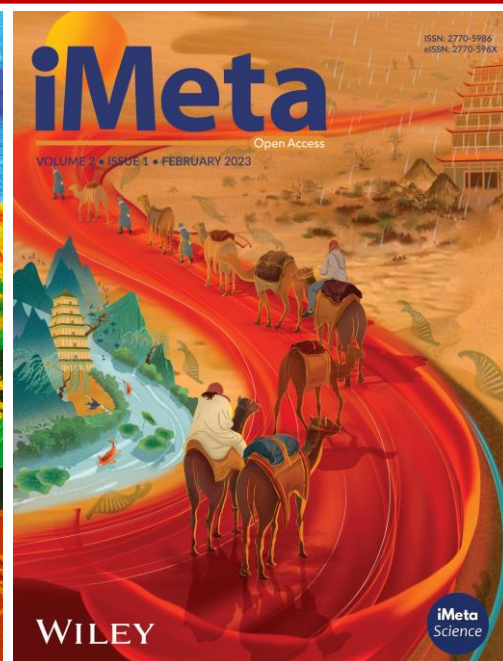
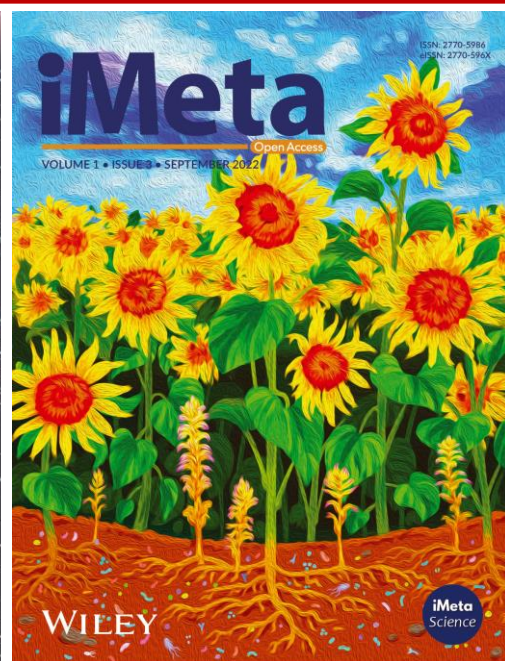
总结



□ 在本研究中，我们构建了迄今为止最具代表性的猪图形泛基因组图谱，猪图形泛基因组和结构变异集合为猪结构变异在猪优势性状中的作用机制提供了宝贵的遗传资源。



Dong Li, Yulong Wang, Tiantian Yuan, Minghao Cao, Yulin He, Lin Zhang, Xiang Li et al. 2024. “Pangenome and genome variations analysis of pigs unveil genomic facets for its adaptation and agronomic characteristics.” *iMeta* 3: e257. <https://doi.org/10.1002/imt2.257>



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