



Pangenome and genome variations analysis of pigs unveil genomic facets for its adaptation and agronomic characteristics

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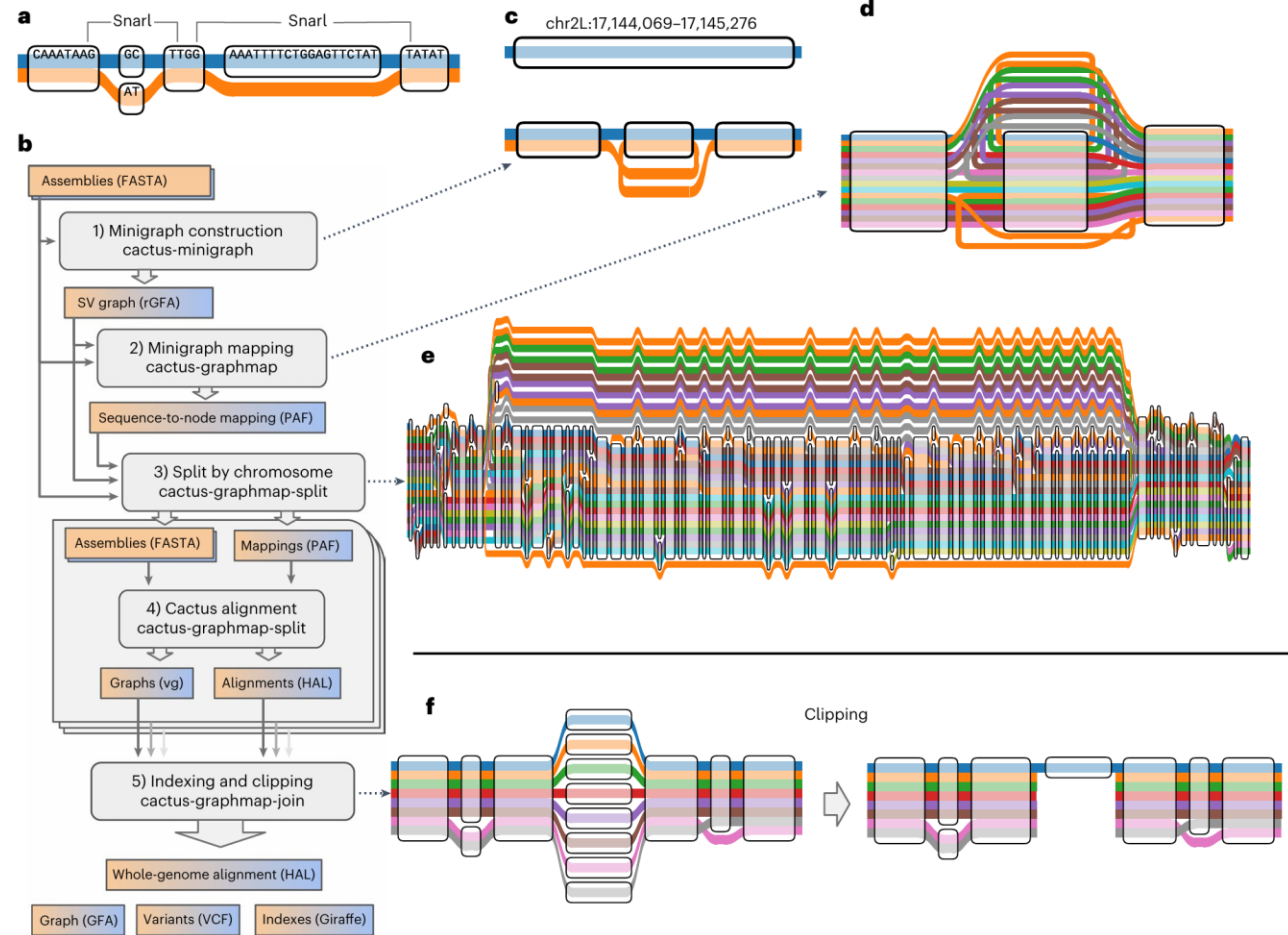
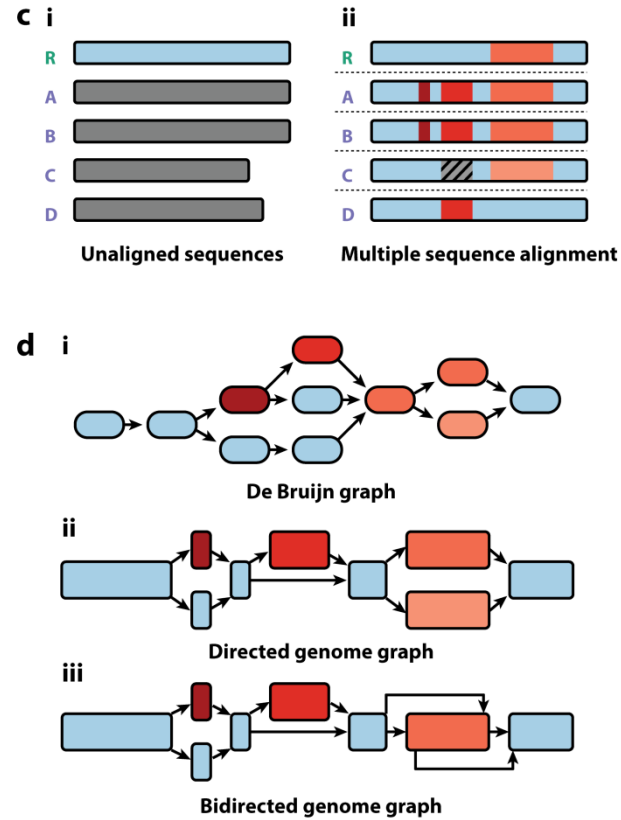
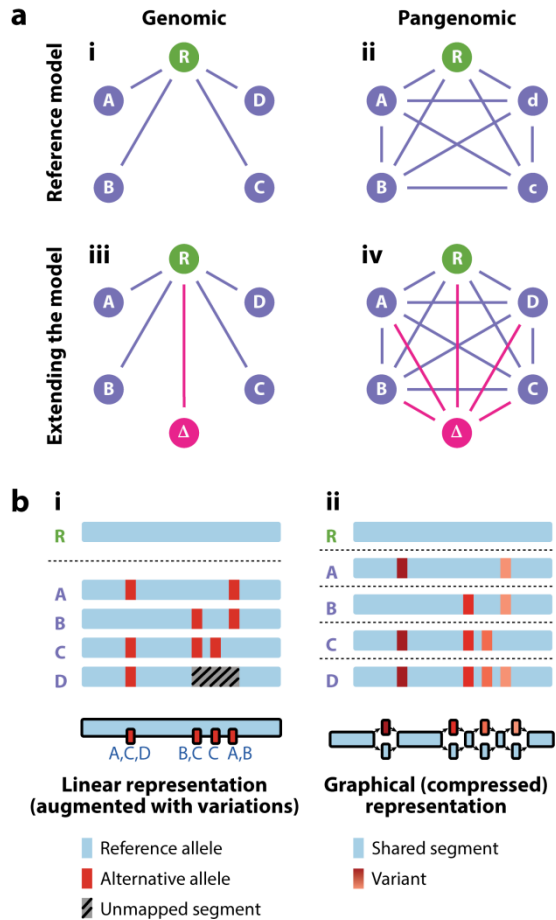
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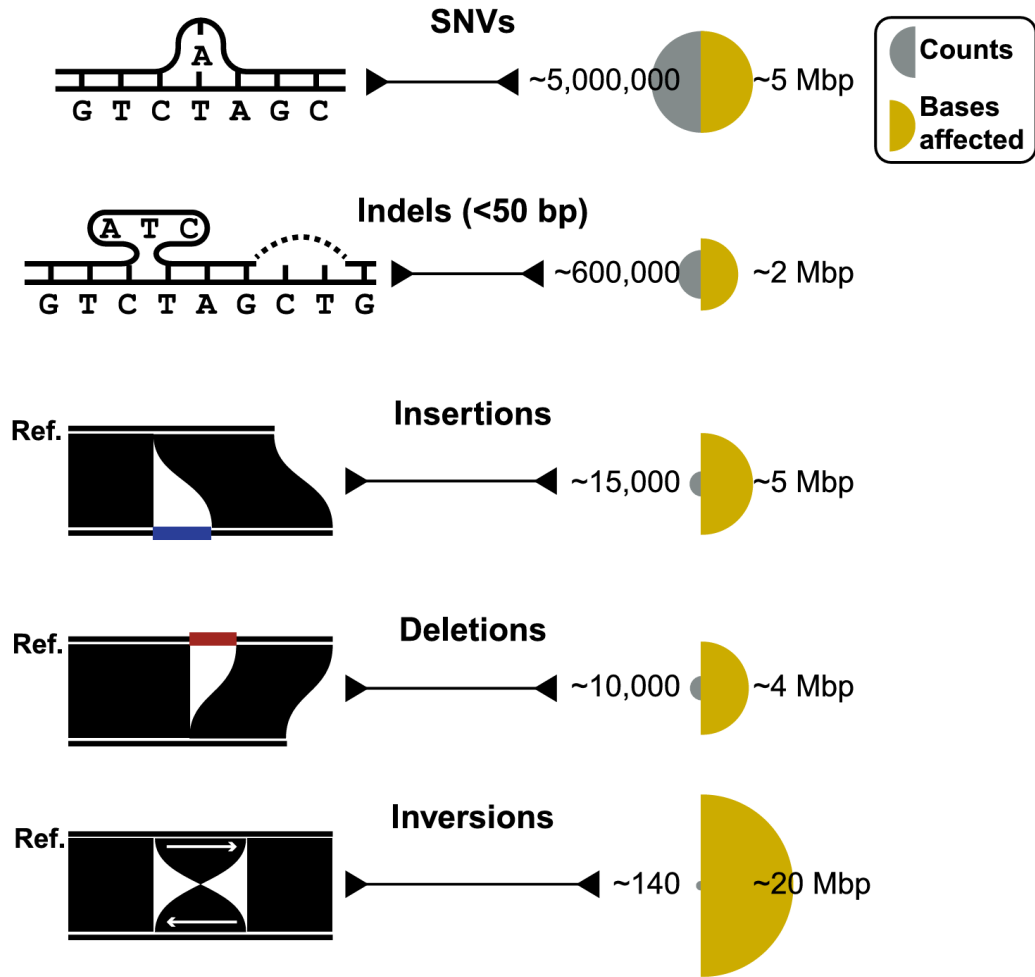


Background: Graph pangenome





Background: Structural variation



Porubsky et al. *Cell*, 2024

Yang et al. *Genome Biology* (2024) 25:116
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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

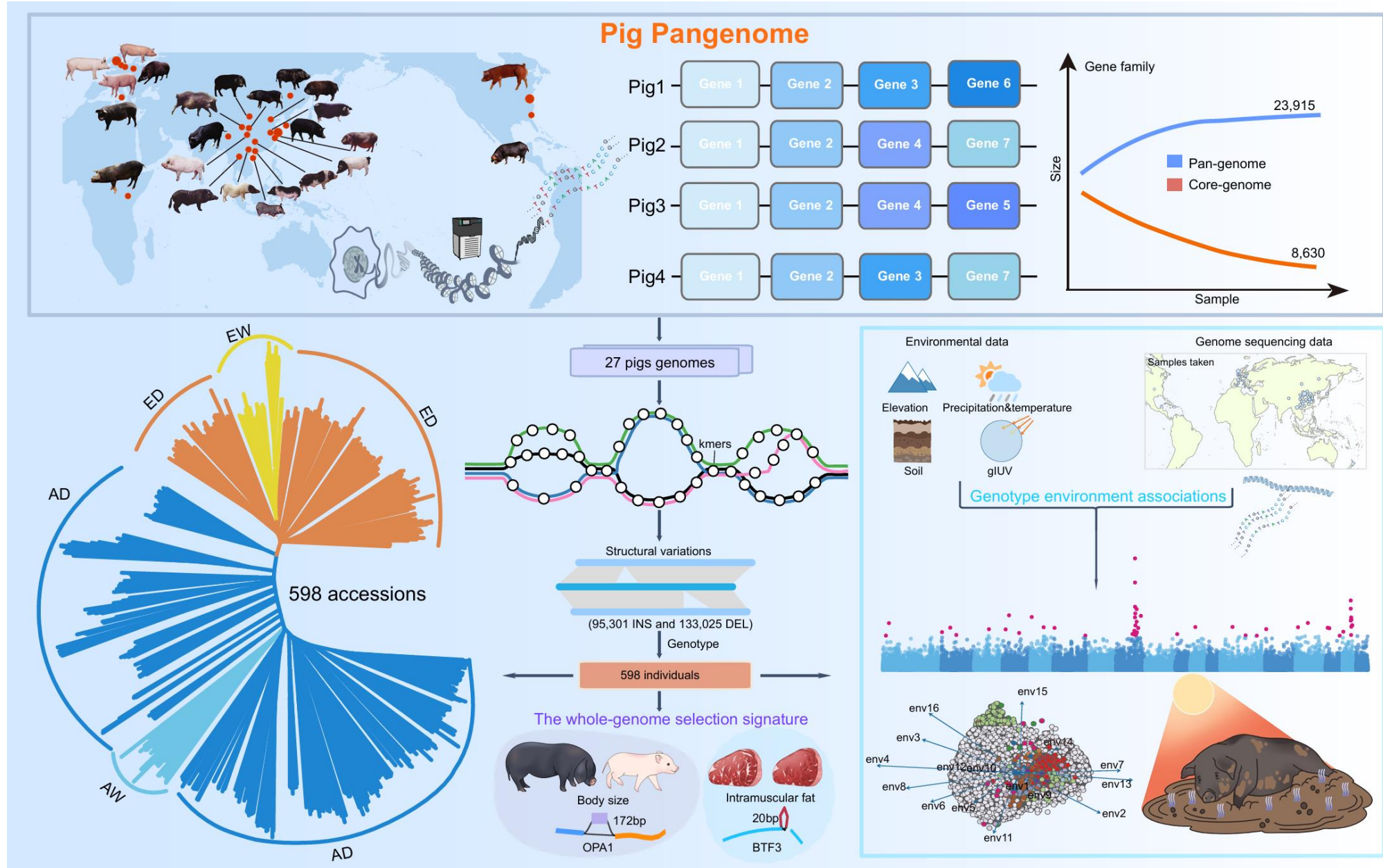


Highlights

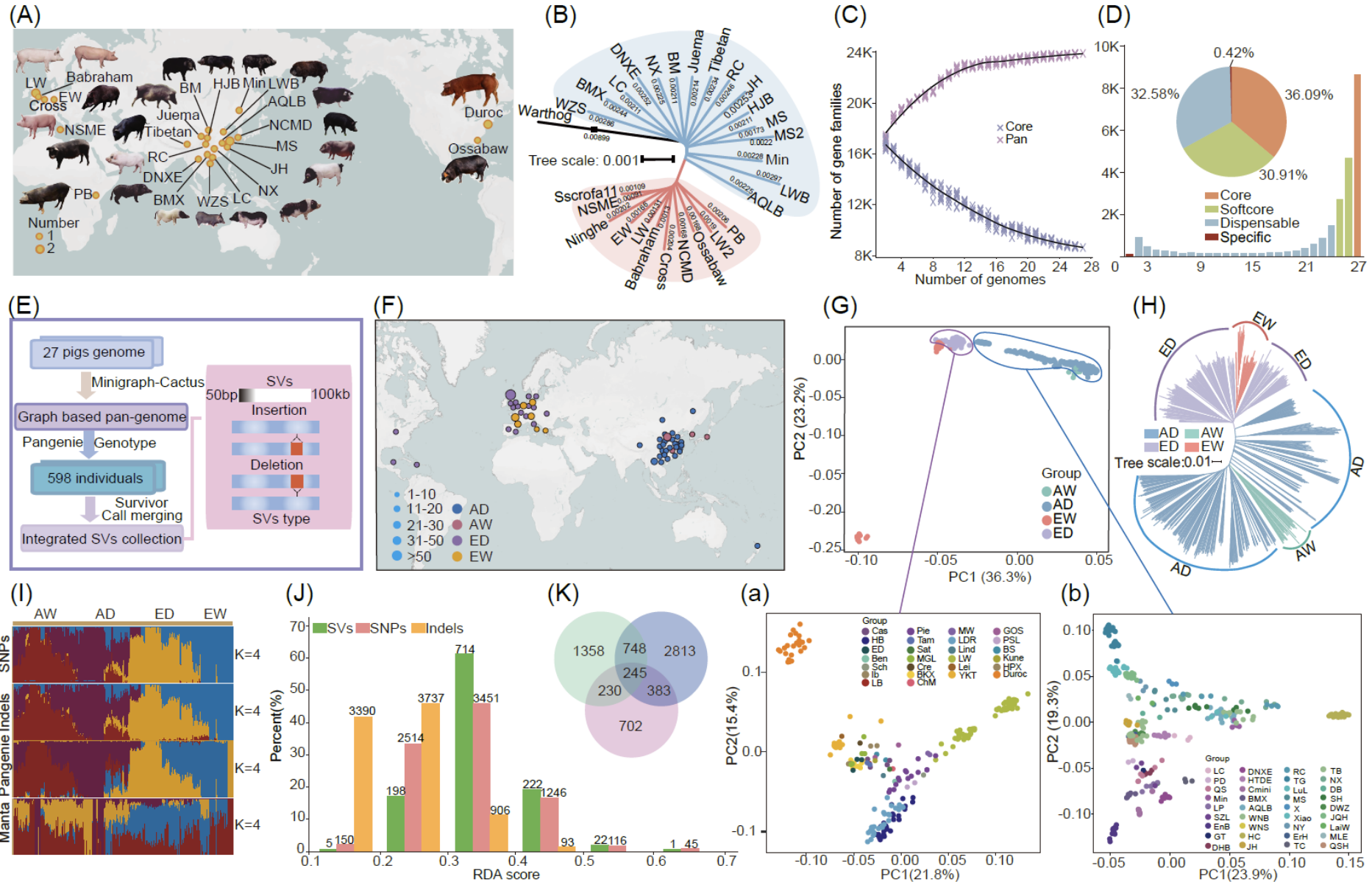
- ❑ The comprehensive pig pangenome assembly of 27 genomes represents the most extensive collection assembled to date.
- ❑ BTF3 is a key candidate gene for regulating intramuscular fat deposition and meat quality in pigs.
- ❑ The graph pangenome reveals the importance of structural variations in adaptation and breed-specific traits.



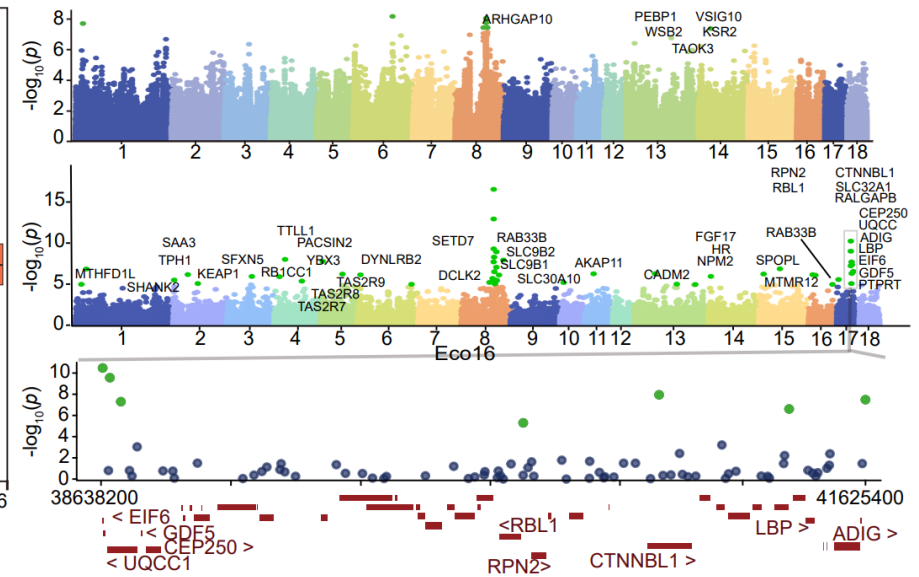
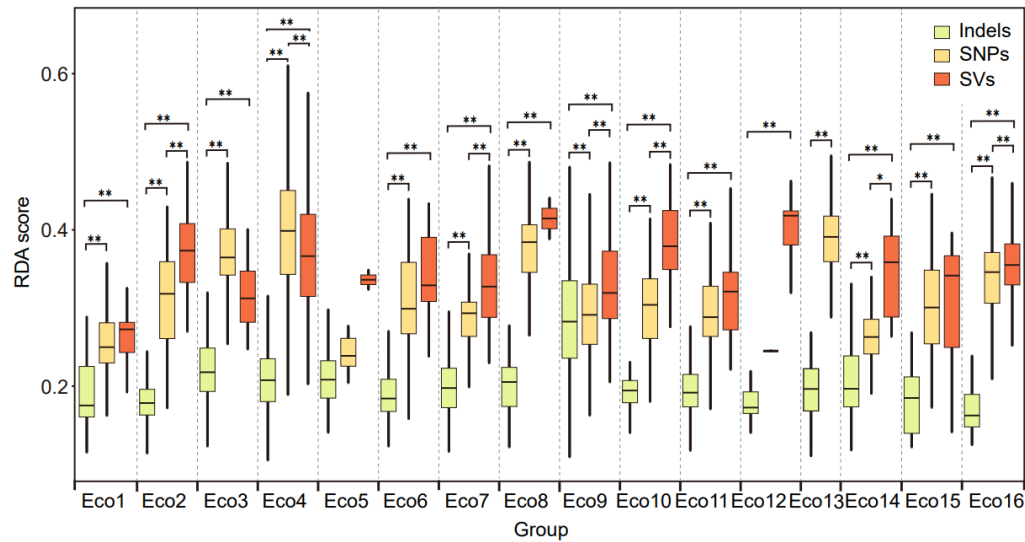
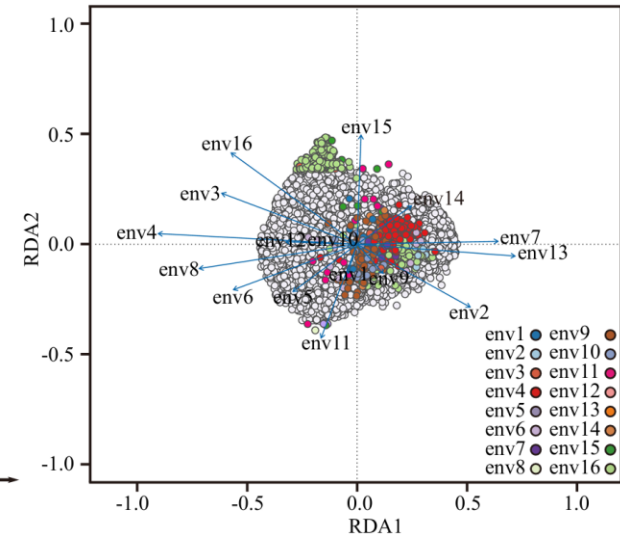
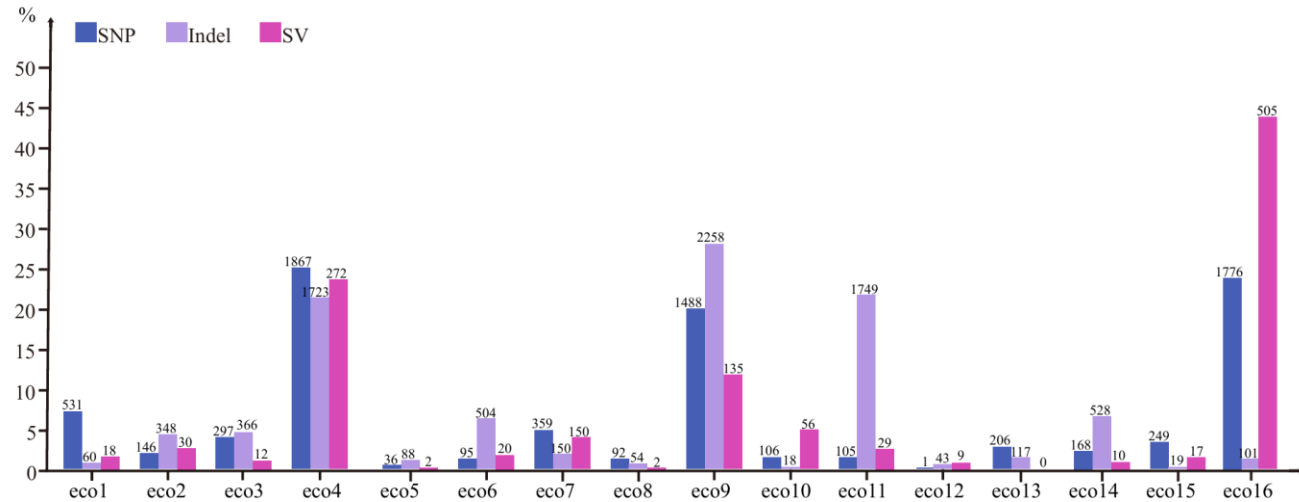
Introduction



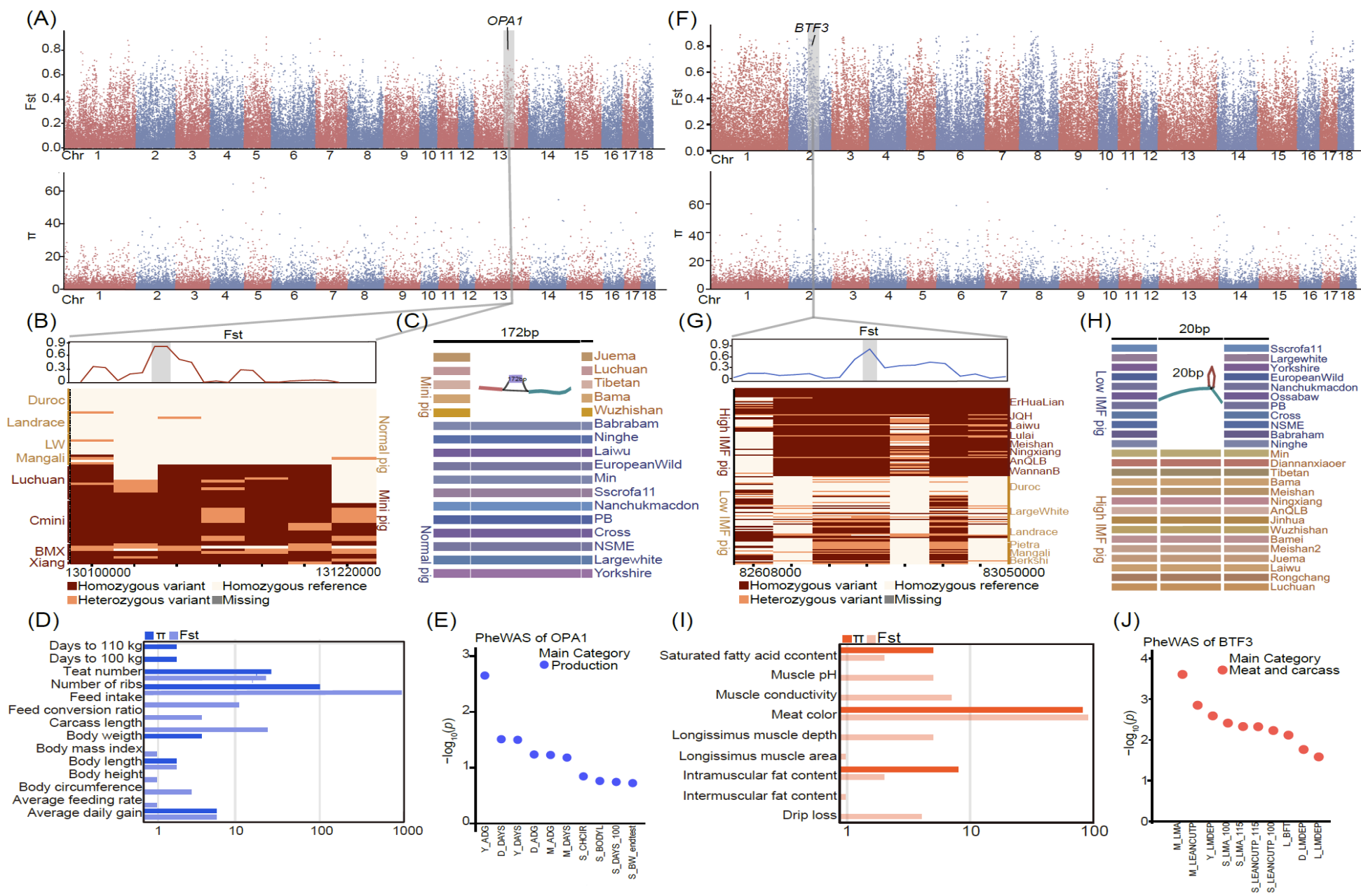
Results: Pig pangenome and structural variations analysis



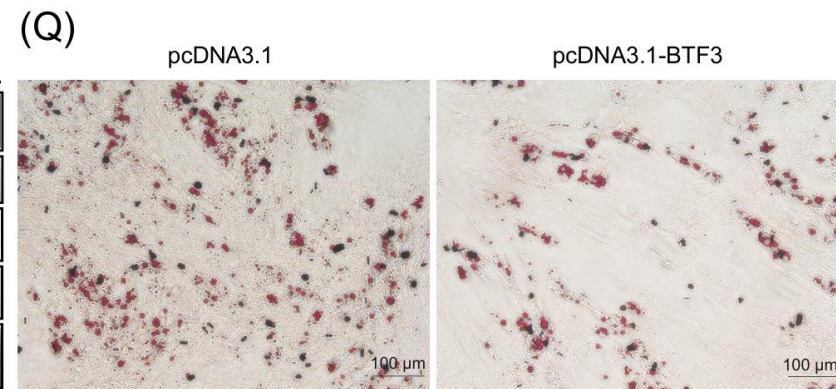
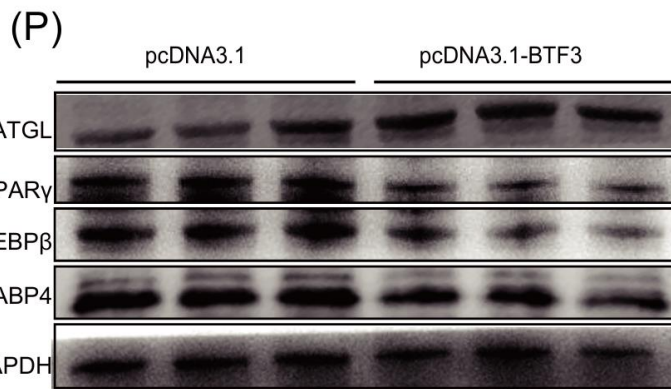
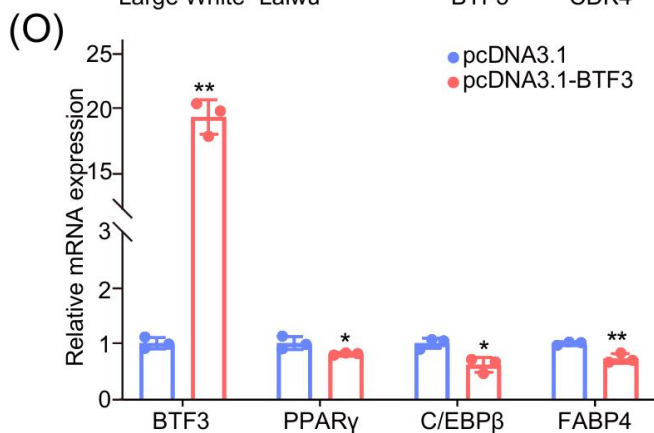
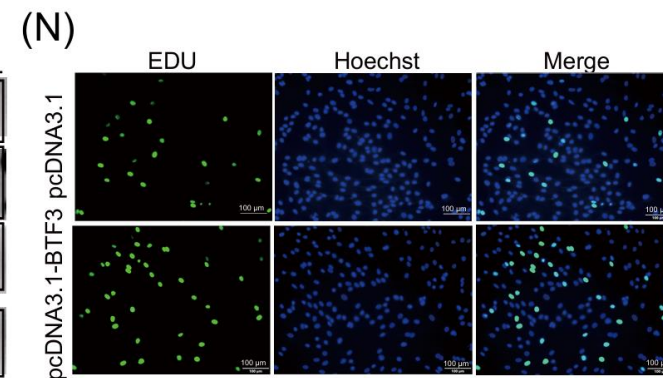
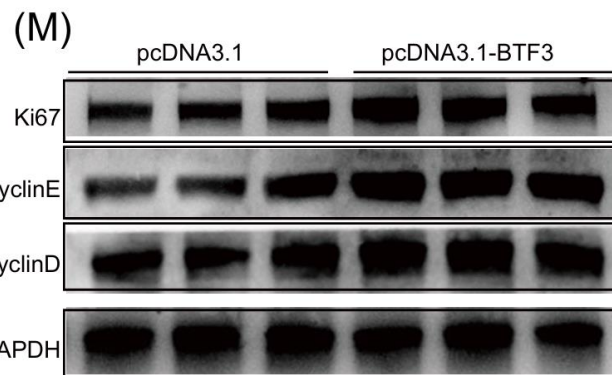
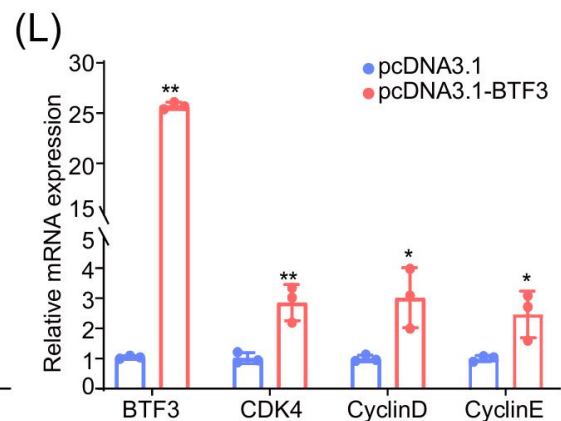
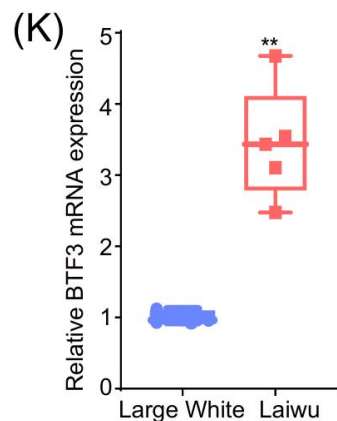
Results: Structural variations and pig adaption



Results: Selection signature analysis



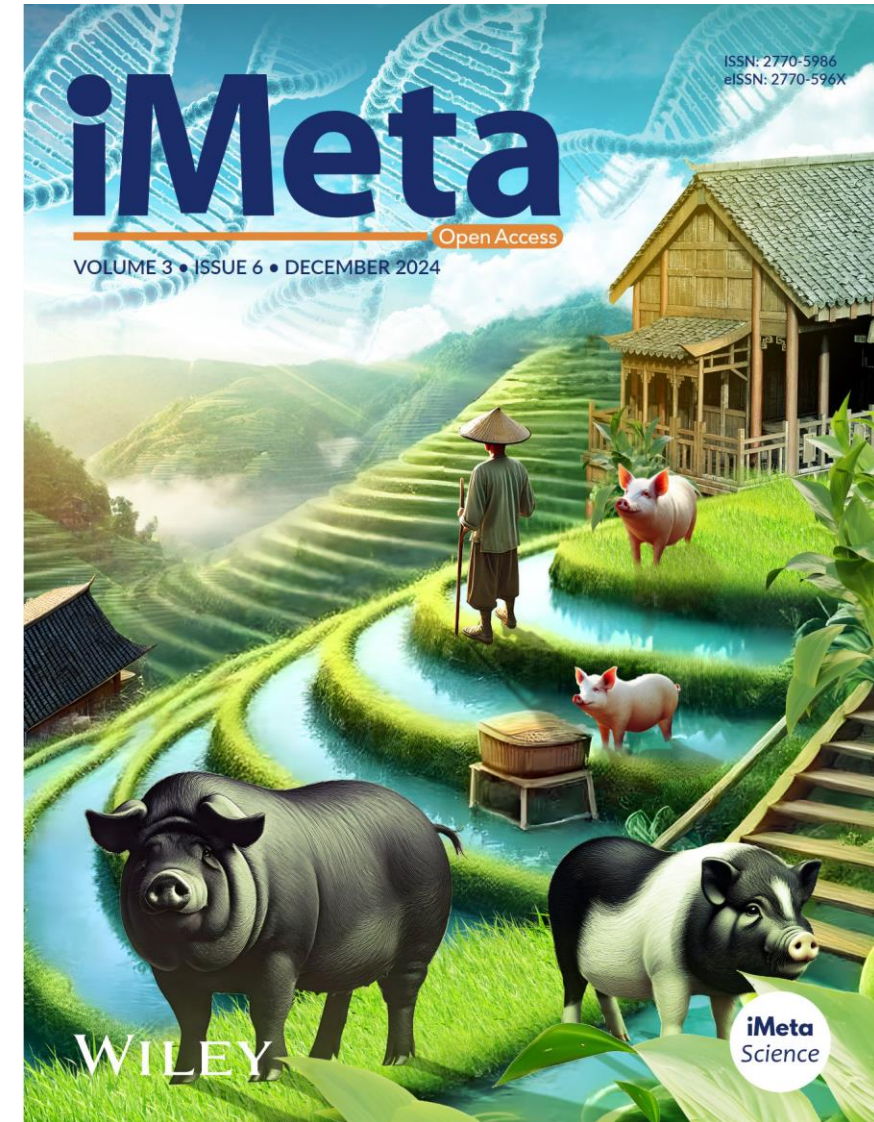
Results : *BTF3* functional analysis



Summary



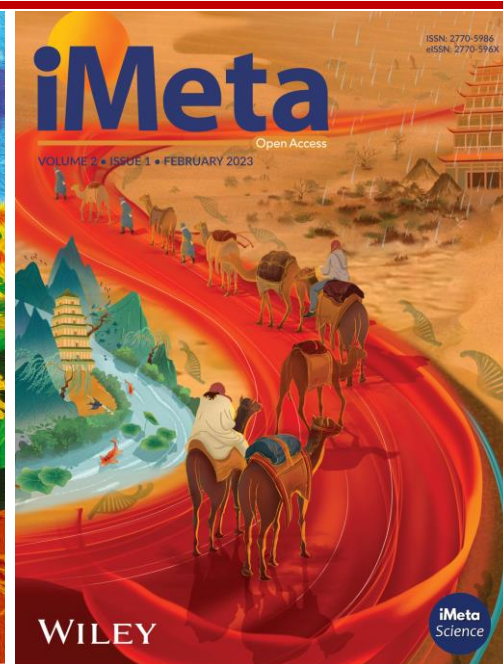
- In this study, we constructed the most representative pig pangenome to date.
- The pangenome and structural variation sets provide valuable resources for identifying candidate genes linked to important traits in pigs.



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