



# EGDB: A Comprehensive Multi-Omics Database for Energy Grasses and the Epigenomic Atlas of Pearl Millet

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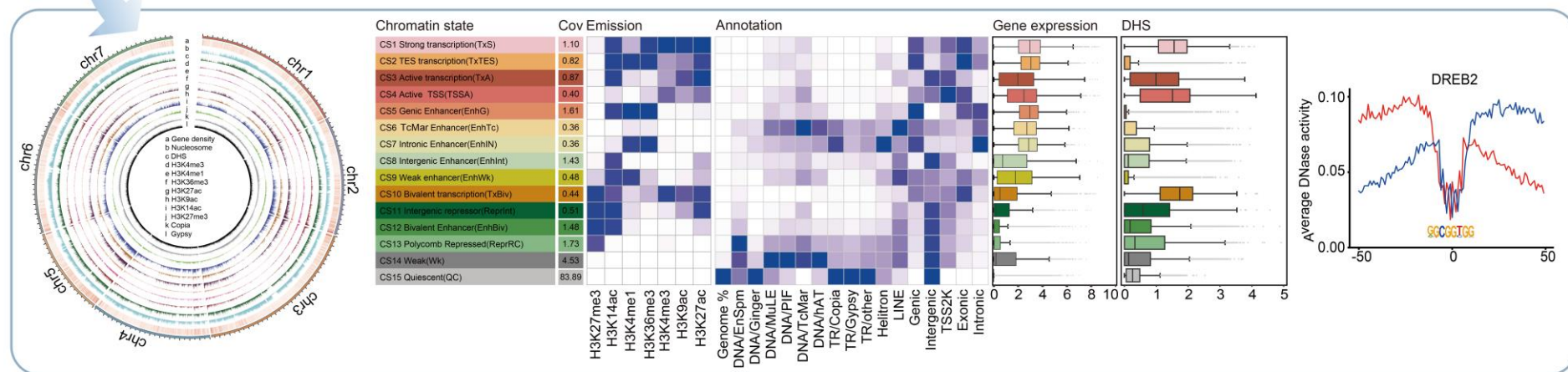
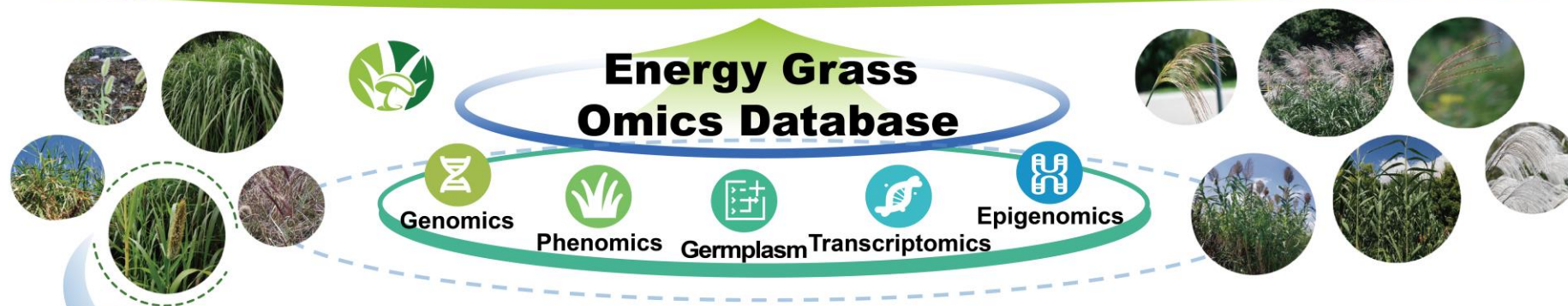
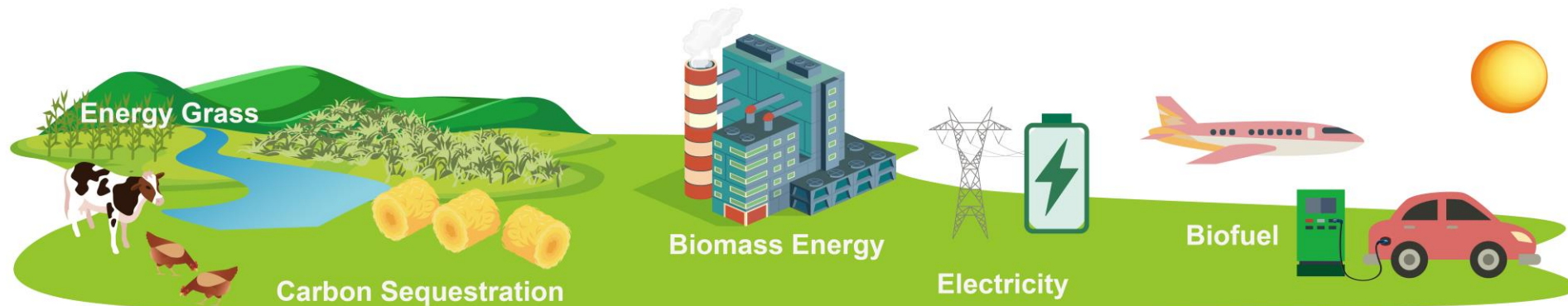
# Introduction



- Energy grasses support carbon sequestration, soil health, and rural revitalization.
- EGDB (<https://engrass.juncaodb.cn>) provides multi-omics data for 11 energy grass species.
- It enables genome annotation and sustainable crop research.



# Highlights



<https://engrass.juncaodb.cn/>





# Overview of EGDB

## (A) Data sources

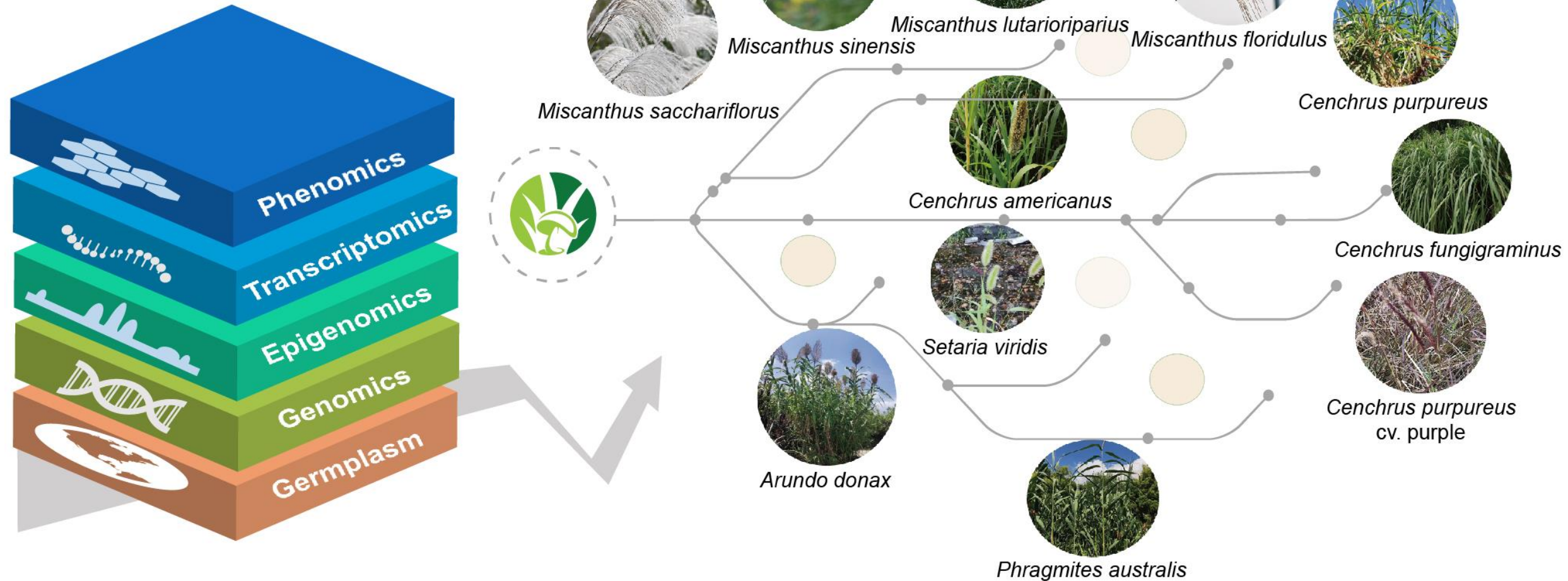
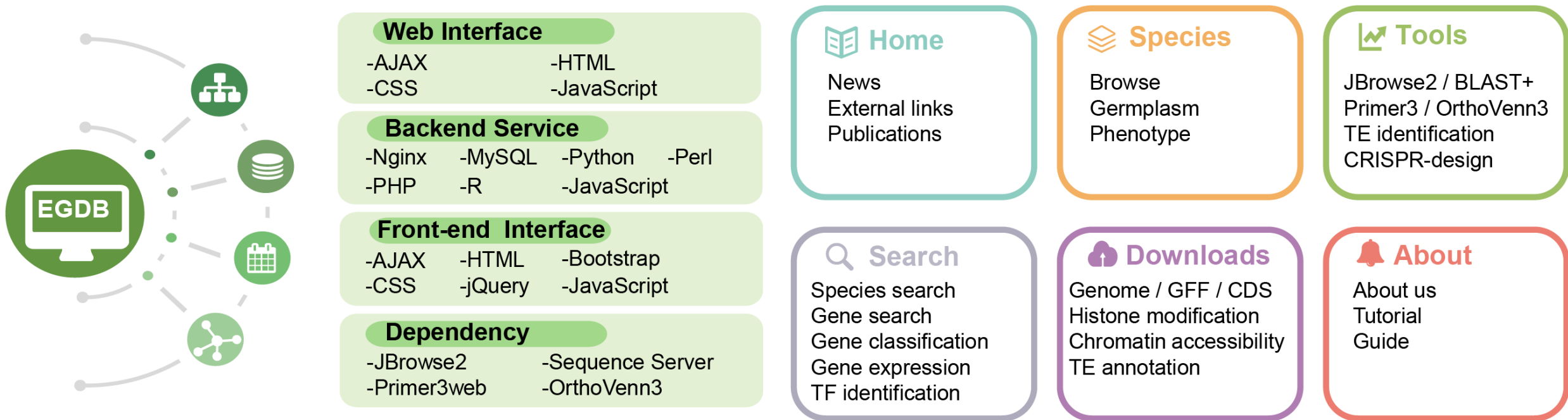


Figure 1. Energy grass database construction and overview and key functionalities. (A) Data source integration



# Overview of EGDB



Middleware infrastructure

Modules and functions

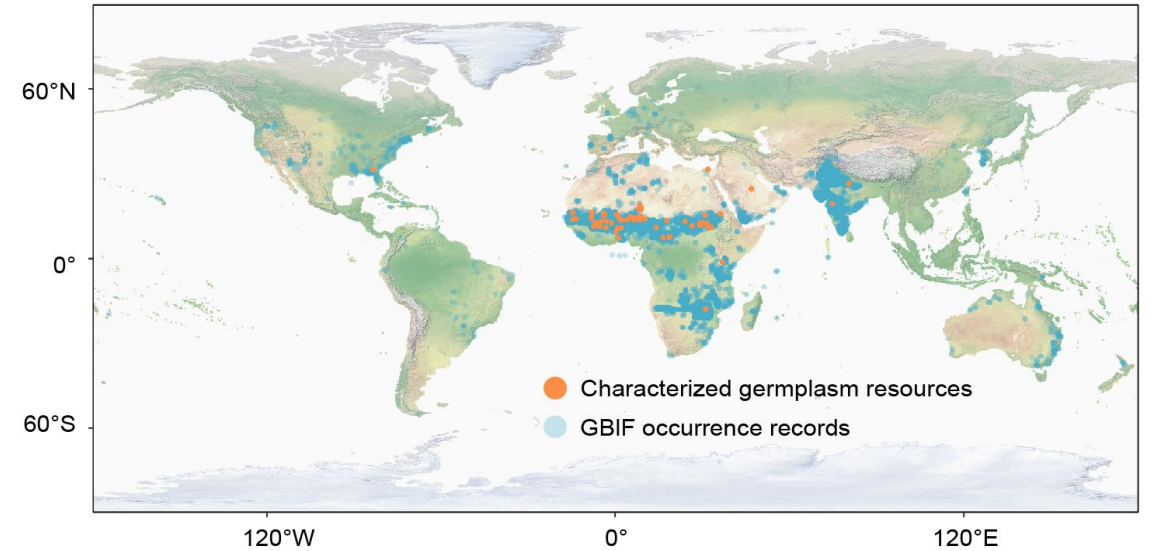


# Overview of EGDB

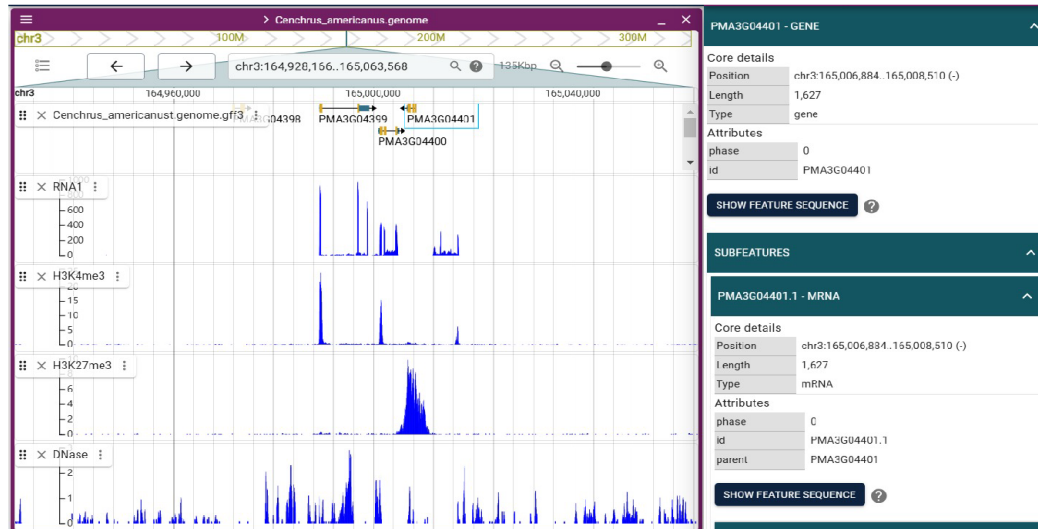
(D) Home page interface



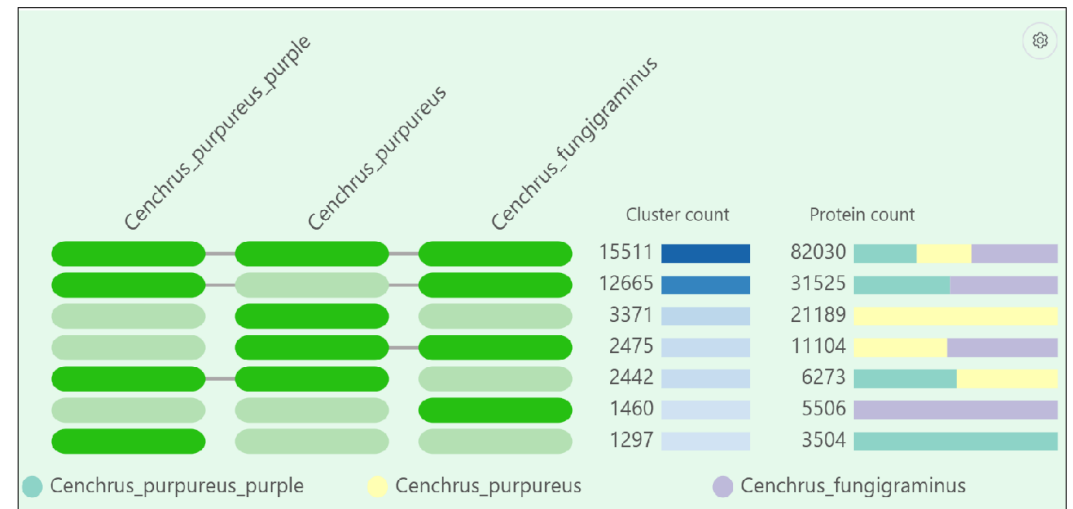
(E) Germplasm



(F) JBrowse2



(G) Orthologous analysis







# Epigenetic features of pearl millet

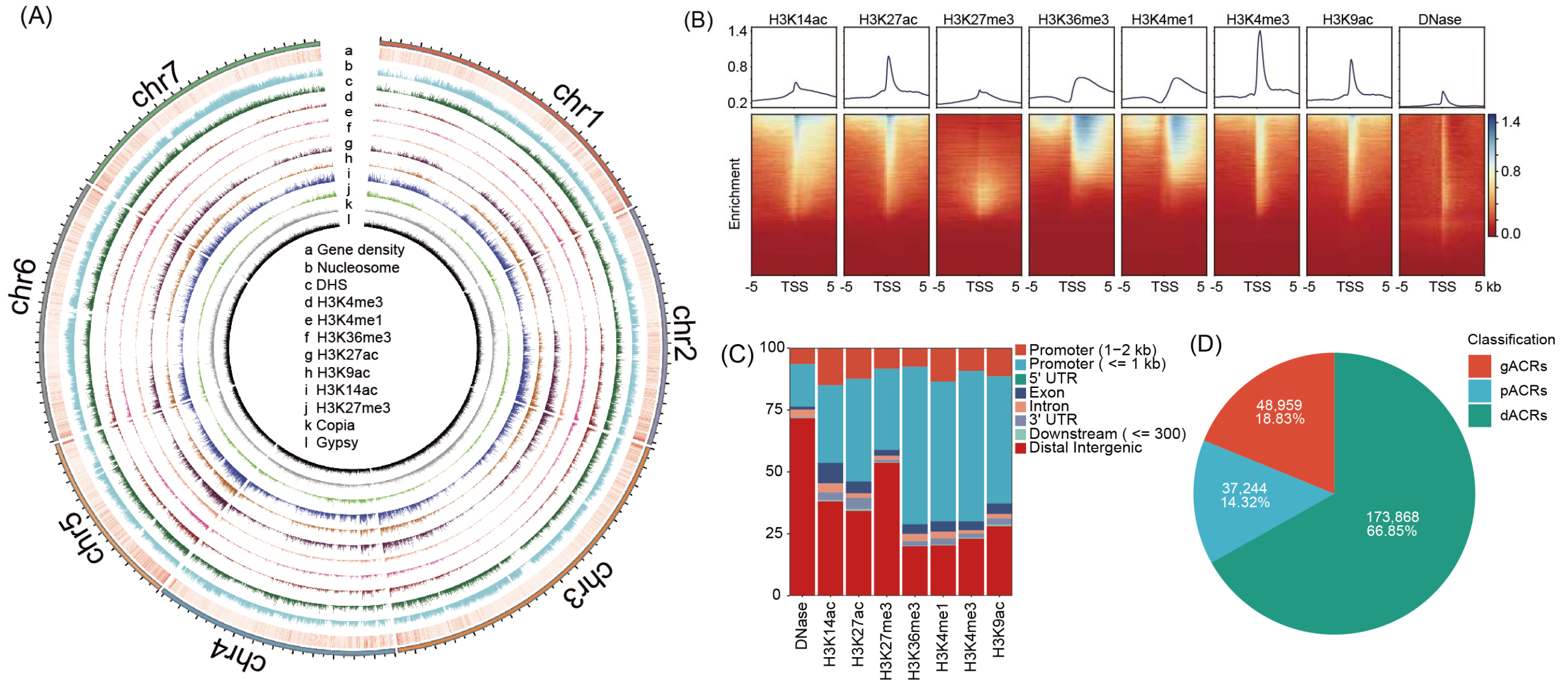


Figure 2. The epigenomic map of pearl millet helped to unveil the regulatory mechanism for gene expression.



# Epigenetic features of pearl millet

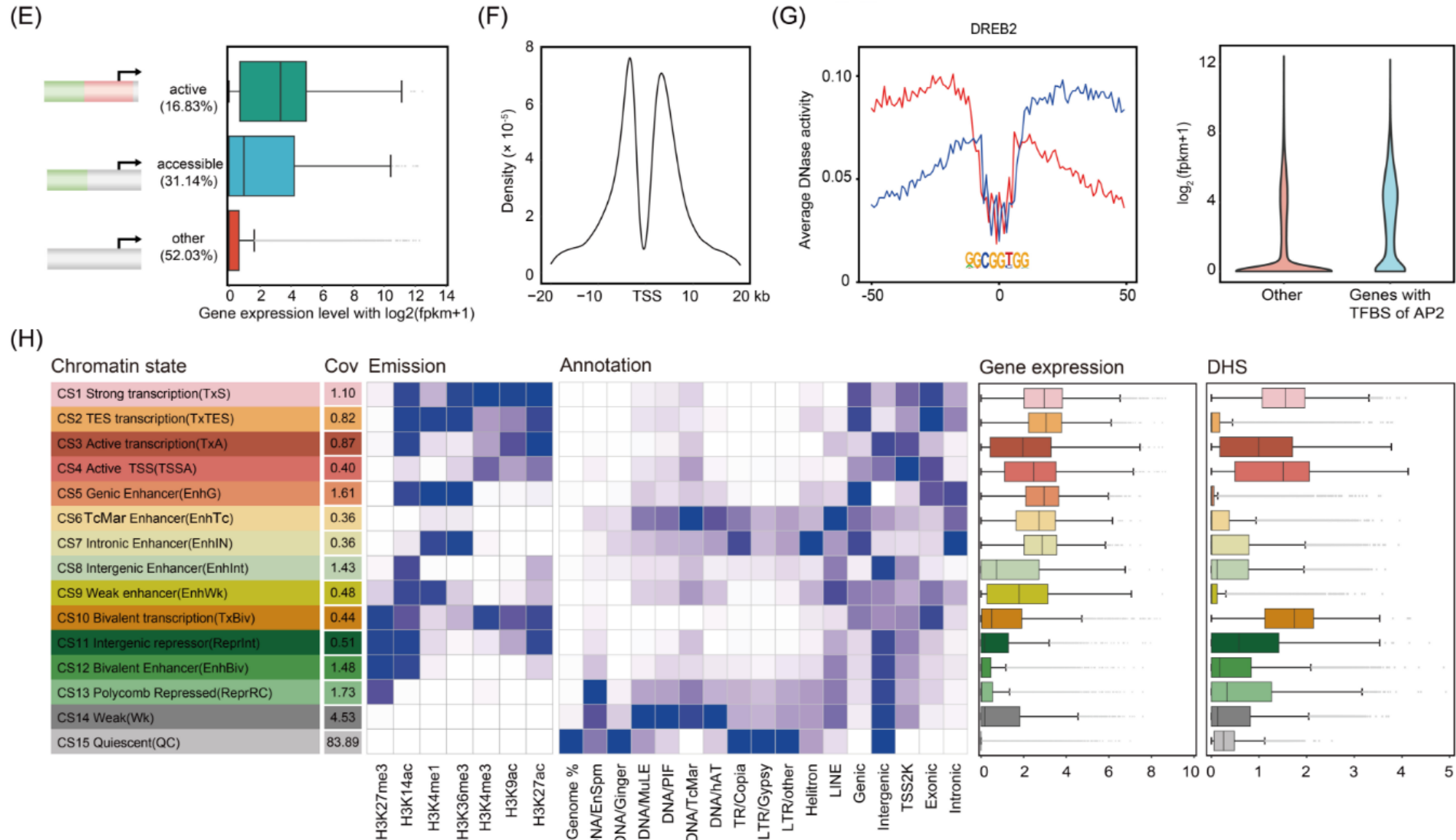


Figure 2. The epigenomic map of pearl millet helped to unveil the regulatory mechanism for gene expression.





# Epigenetic features of pearl millet

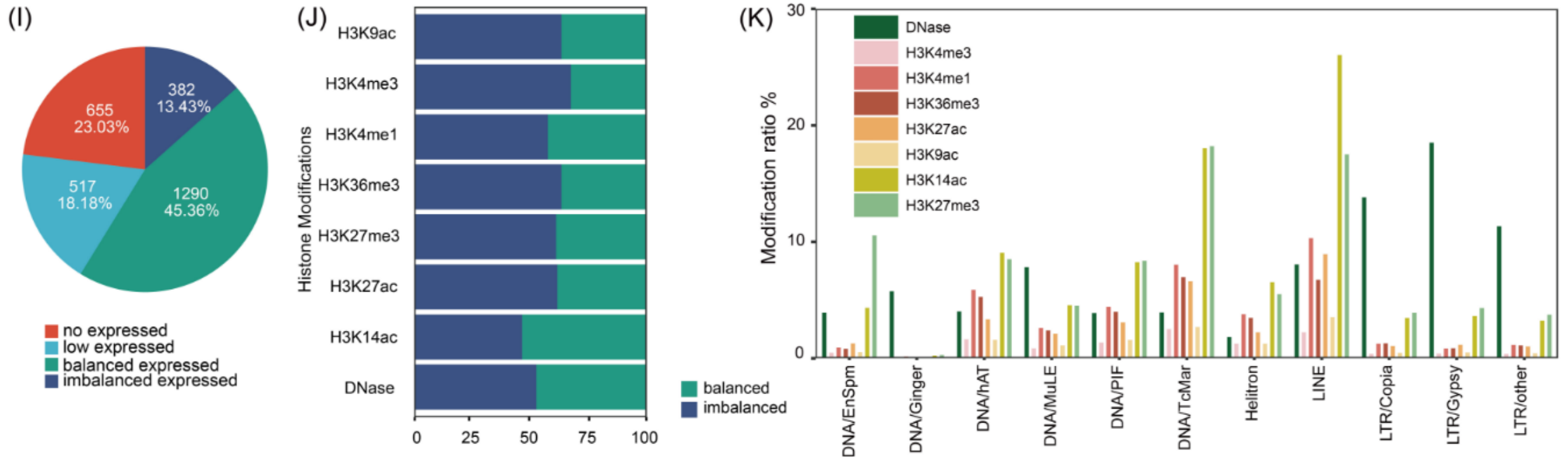


Figure 2. The epigenomic map of pearl millet helped to unveil the regulatory mechanism for gene expression.

- (I) Imbalanced Expression Patterns
- (J) Epigenomic Features and Expression Imbalance
- (K) Histone Modification in TE Families



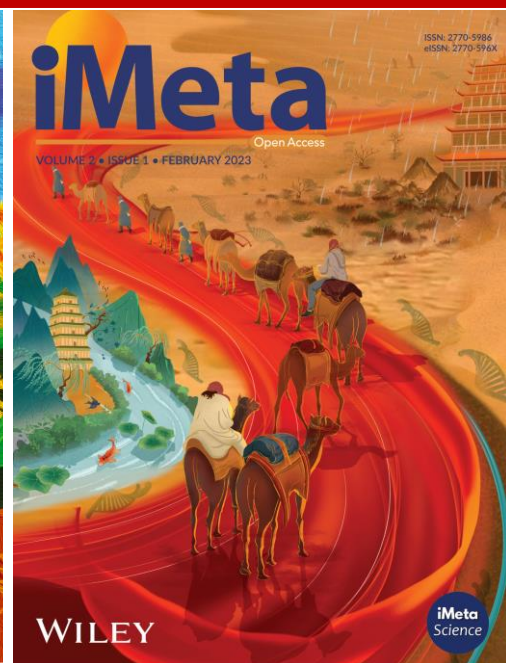
# Summary

- ❑ In this study, We developed EGDB (<https://engrass.juncaodb.cn/>), a comprehensive multi-omics database integrating genomic, epigenomic, transcriptomic, and phenotypic data of energy grasses.
- ❑ We constructed the epigenomic atlas of pearl millet, covering key histone modifications and chromatin accessibility, providing valuable resources for epigenetic research.
- ❑ Our study supports future scientific and translational research, promoting sustainable agriculture and renewable energy development through energy grass studies.

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