METTL5介导的18S rRNA m^{6}A修饰增强拟南芥的核糖体组装和ABA响应

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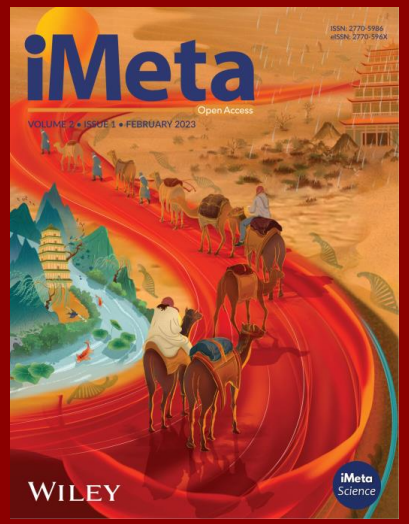

Ping Li, Yu Zhang, Songyao Zhang, Jinqi Ma, Sheng Fan, Lisha Shen. 2025. METTL5-mediated 18S rRNA m6A modification enhances ribosome assembly and ABA response in Arabidopsis. ***iMeta*** 4: e70055.
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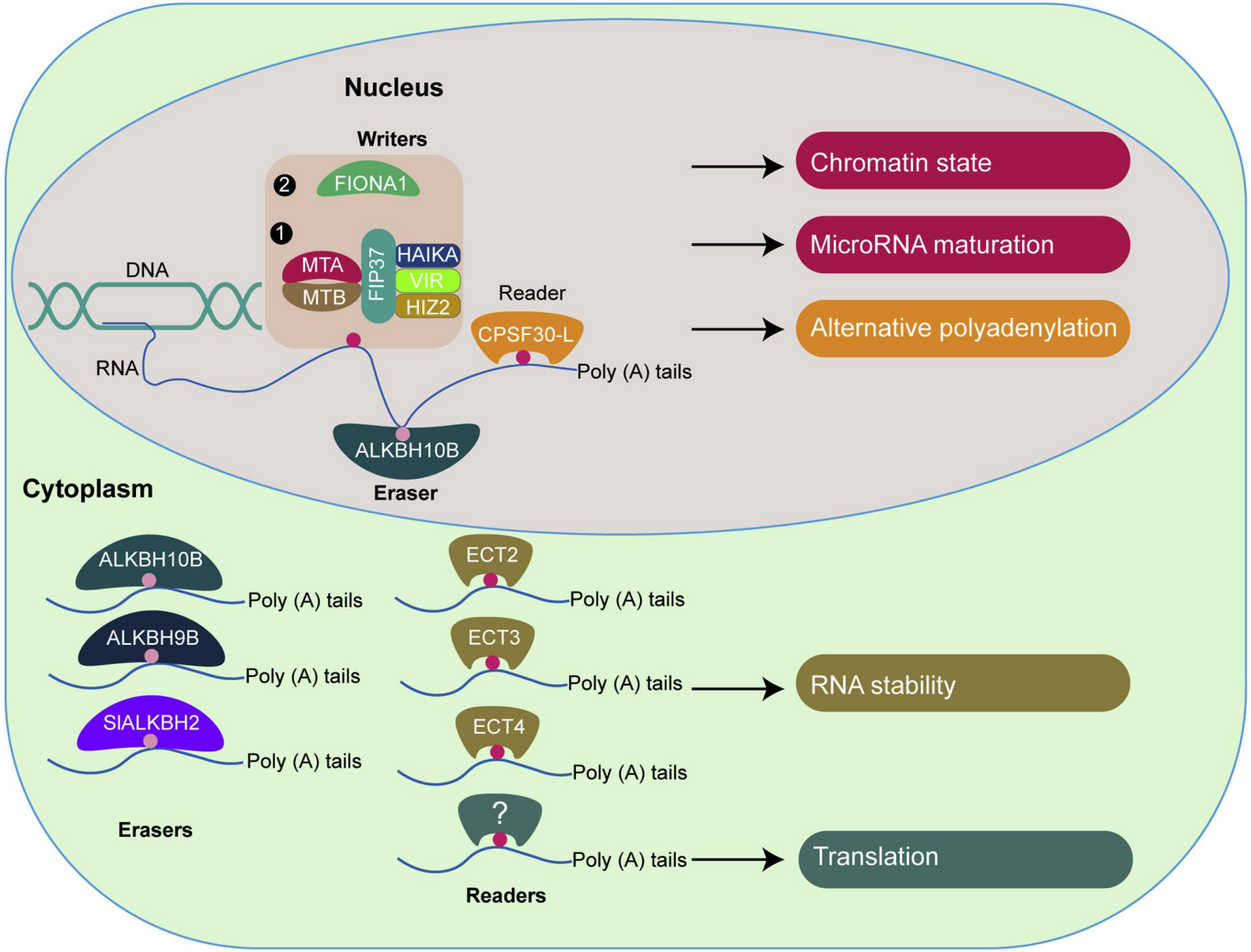
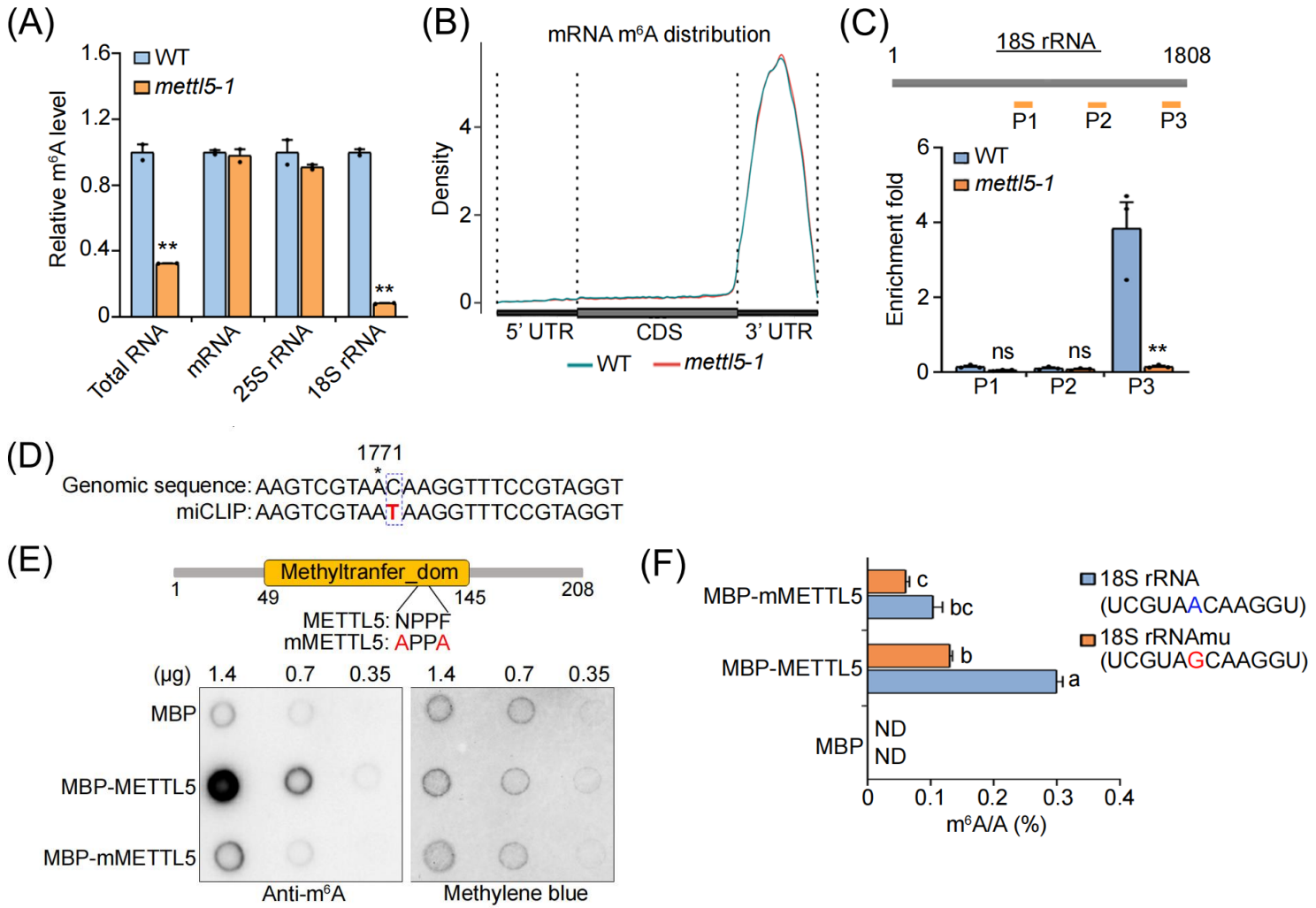
引言



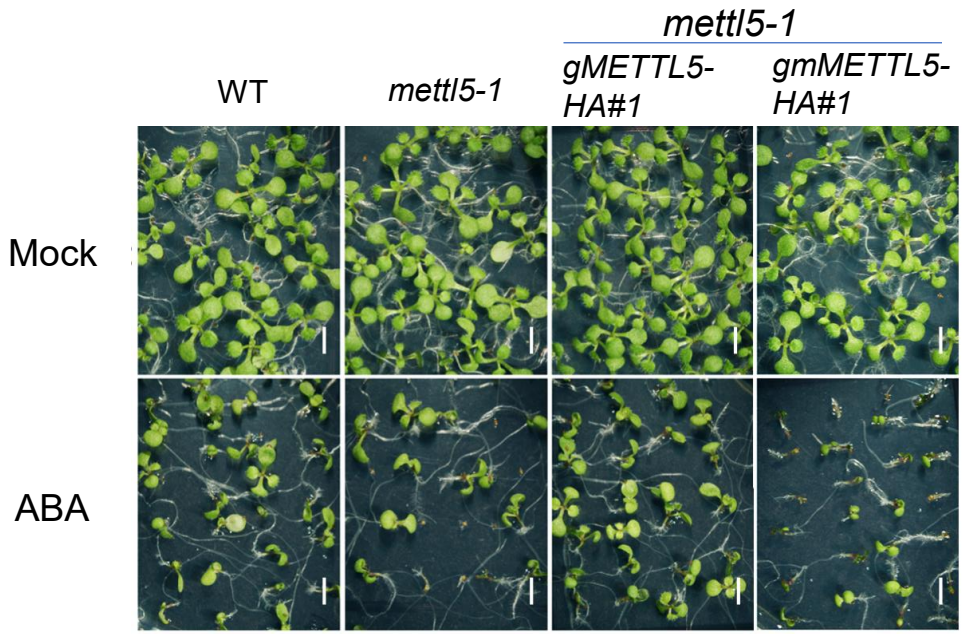
(Tang et al., 2025)

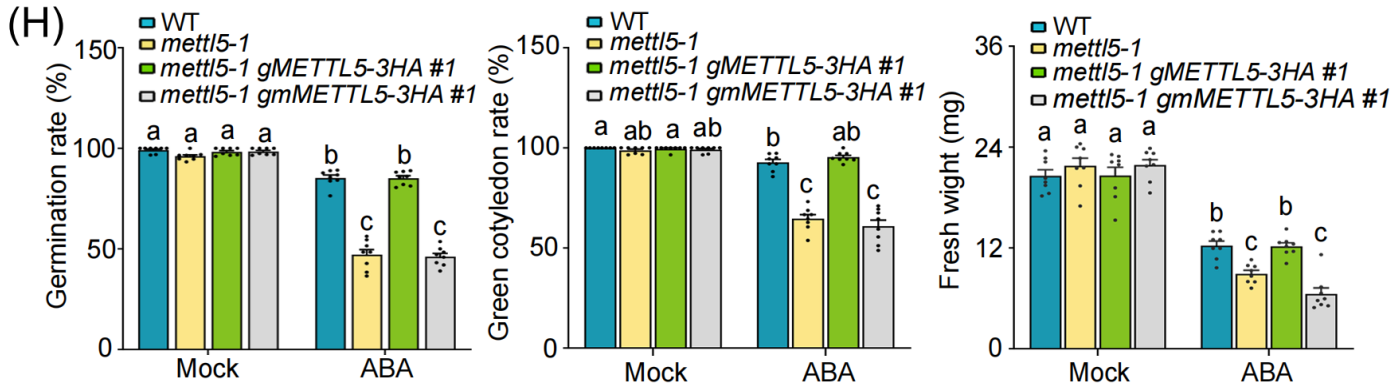
亮点

- 拟南芥METTL5特异介导18S rRNA的A_{1771}位点m^6A修饰；
- METTL5增强*GSTs*的翻译效率以介导ABA响应；
- m^6A_{1771}对18S rRNA与RPL24A的结合至关重要。

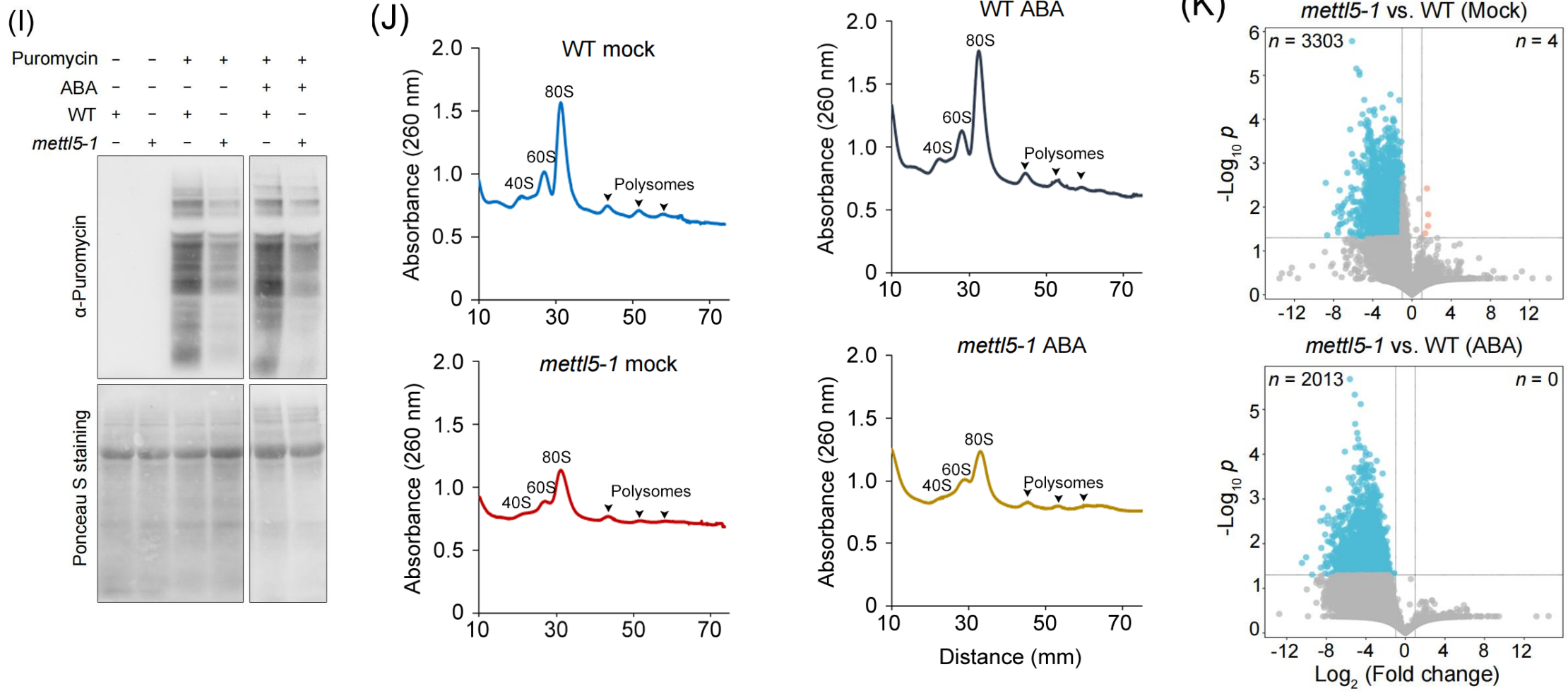


METTL5 特异介导18S rRNA A_{1771}位点的甲基化

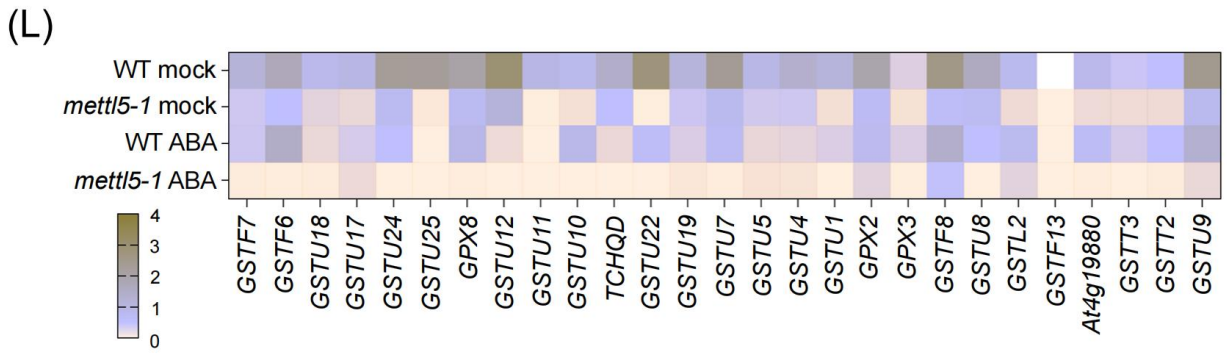


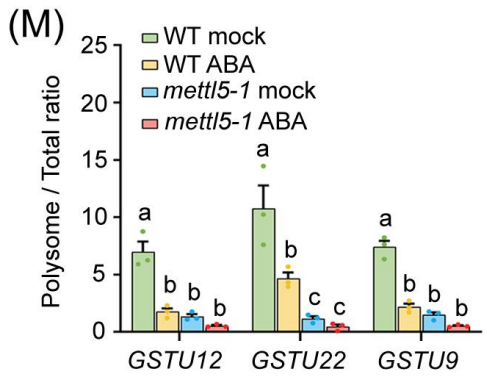


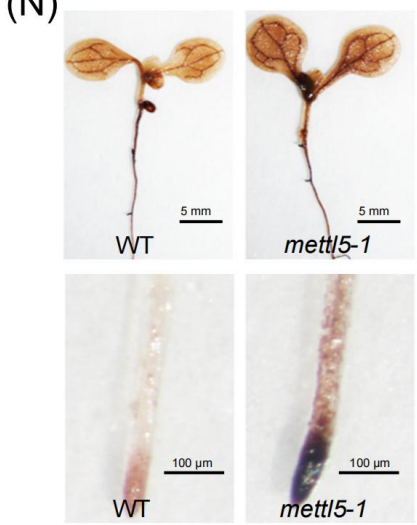
METTL5调控植物对ABA的响应

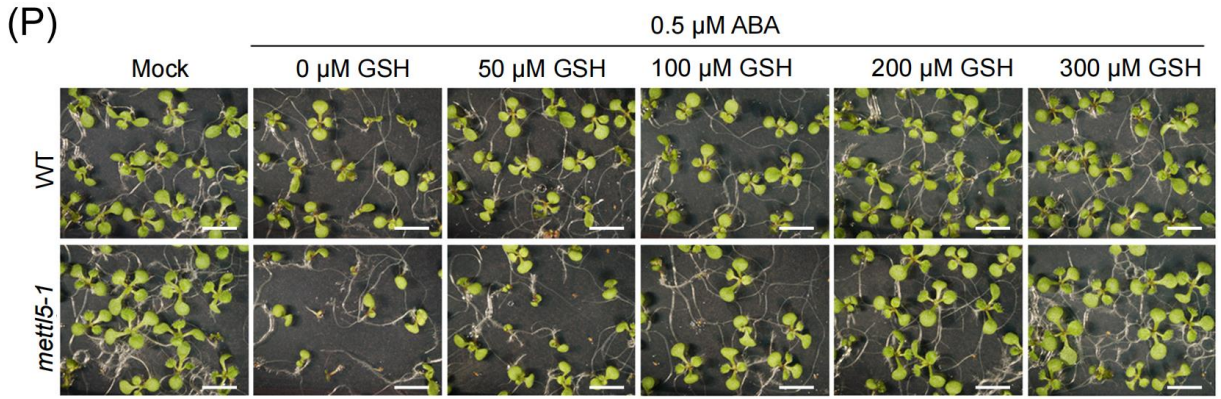


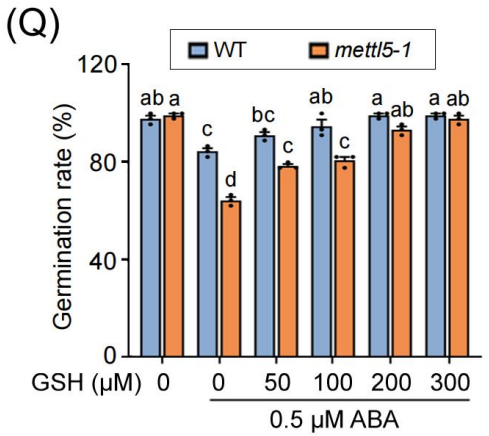
METTL5调控mRNA的翻译

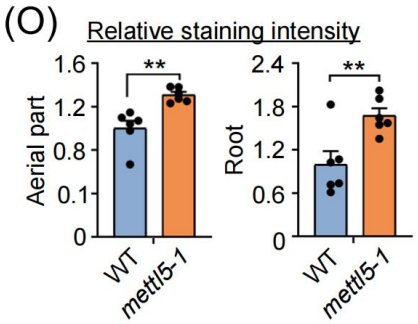




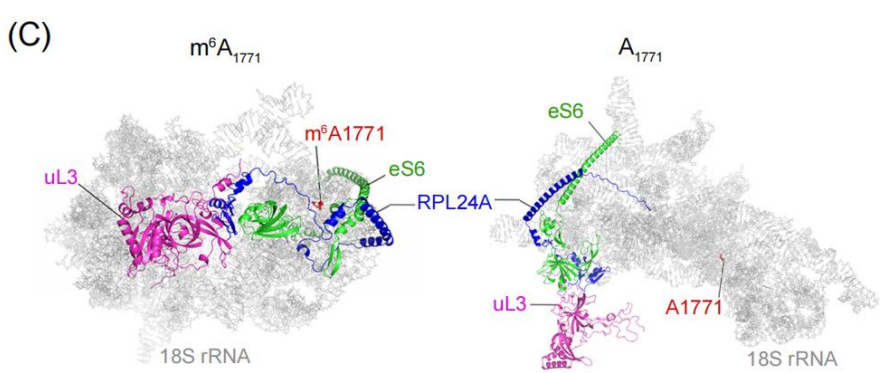


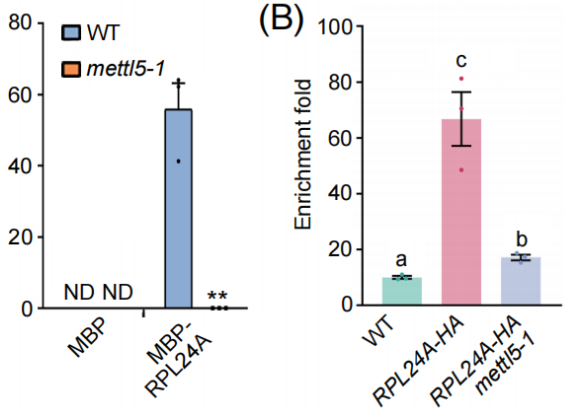


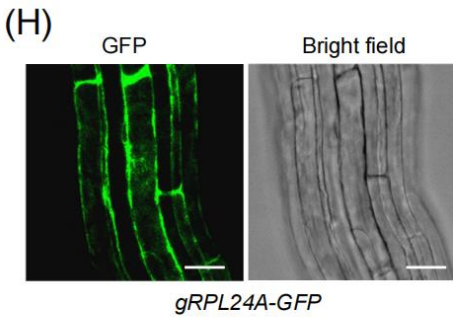


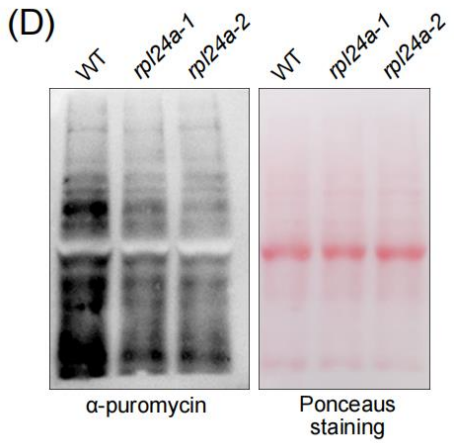


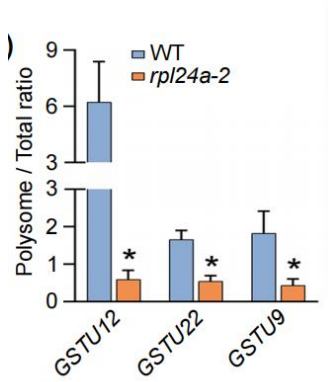
mettl5突变体中GSTs的翻译效率降低导致ROS过度积累从而表现ABA的超敏反应

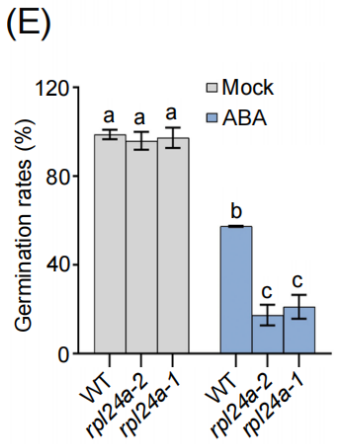




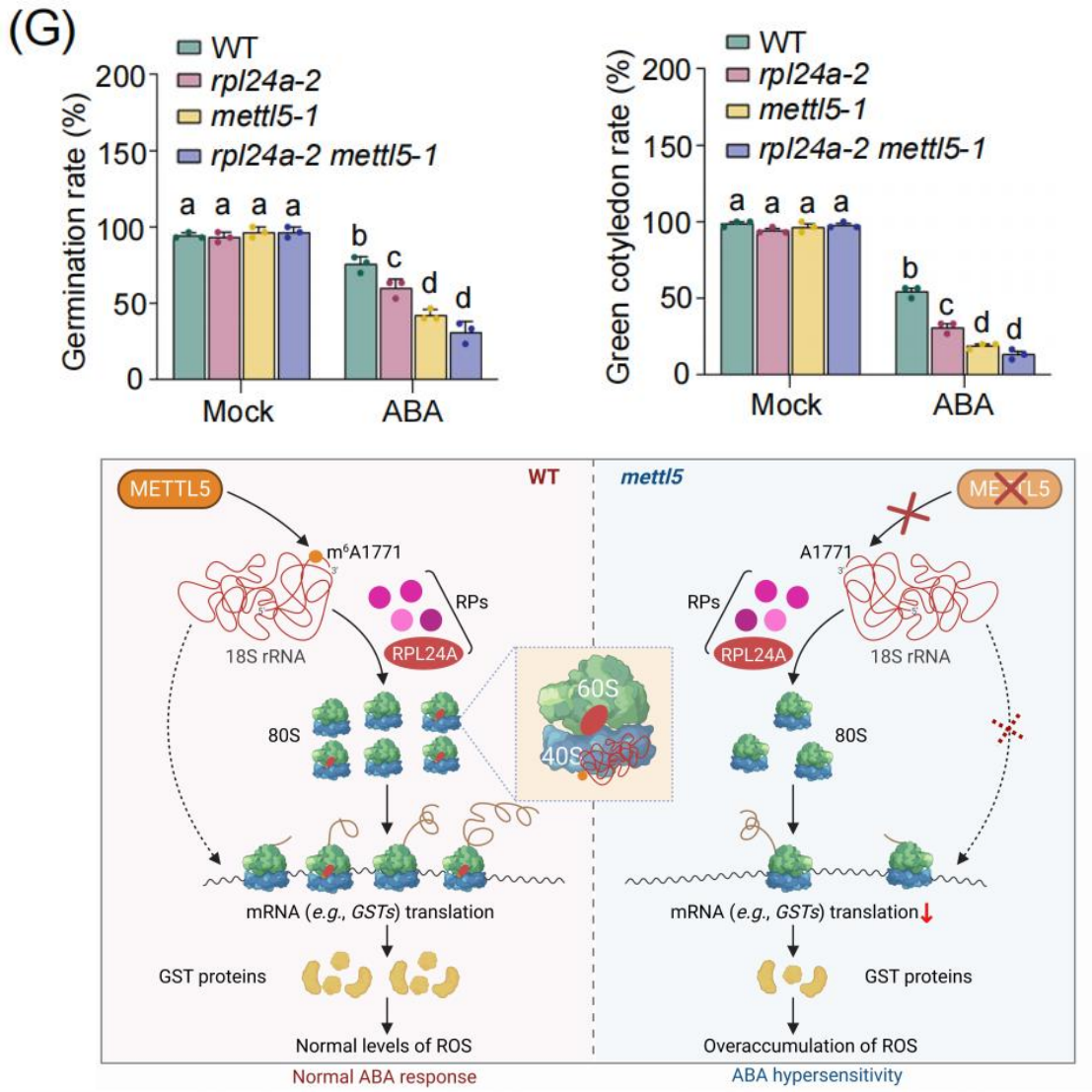








METTL5介导的18S rRNA m^{6}A修饰对核糖体的组装至关重要



METTL5 与RPL24作用于同一通路

总结

- 拟南芥METTL5介导18S rRNA的A_{1771}位m^6A修饰，以促进*GST*的翻译，从而介导ABA响应。

- 本研究揭示了植物体内一种全新的rRNA表观调控机制，同时发现该修饰控制mRNA翻译效率从而介导植物对环境条件的响应。

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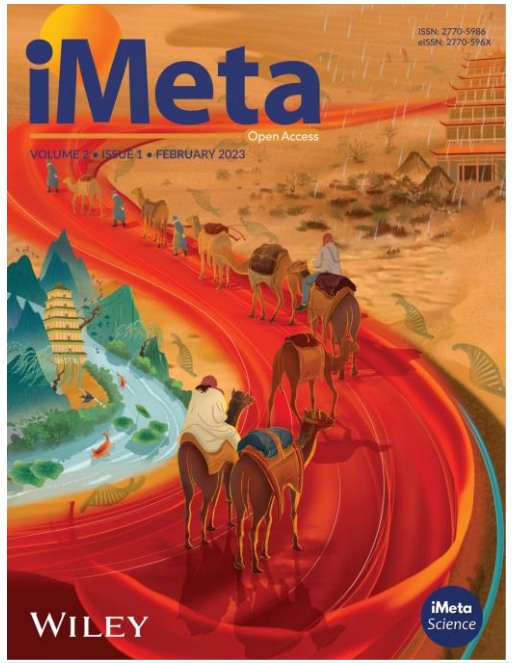

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