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## 学术沙龙

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### 【学术沙龙第四十七期】解码细胞器-RNA结合蛋白的奋斗日常

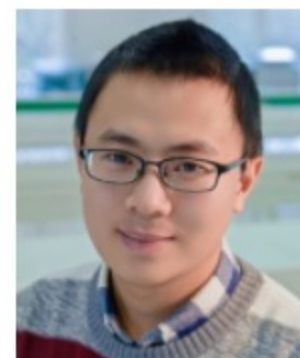
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报告人: 王传德 农生学院植物科学系 长聘副教授

时间: 2023年11月29日 (星期三) 12:40-14:00

地点: 农生学院创新楼 (B楼) 104会议室

主办单位: 农生学院学科与科技办、农生学院青年教师联谊会



报告题目: 解码细胞器-RNA结合蛋白的奋斗日常

报告摘要:

线粒体和叶绿体作为植物细胞中两类关键的细胞器, 其大部分基因已经迁移到细胞核基因组或在进化过程中丢失。高等植物细胞器 RNA 的代谢调控十分复杂, 主要涉及转录后加工过程。细胞器基因表达、生物发生及功能实现所需的大多数蛋白因子由细胞核基因所编码。这些核基因编码蛋白如何调控细胞器基因表达, 并进而影响植物生长发育及繁殖, 一直是植物学基础理论和作物杂交育种的核心研究课题之一。

报告人简介:

王传德, 2014年硕士毕业于中国科学院武汉植物园, 2018年获法国巴黎萨克雷大学博士学位。随后在法国国家农业科学院从事博士后研究。2023年8月加盟上海交通大学农业与生物学院, 担任独立PI, 博士生导师。入选国家优秀青年(海外)、上海市高层次人才计划。主要从事植物细胞器RNA生物学, 重点关注细胞核与细胞质之间的遗传交流, 探讨核质互作在植物发育、繁殖以及环境适应方面的关键作用。研究成果以第一作者在PNAS (2篇), Nucleic Acids Research (3篇), Plant Physiology等期刊发表。

【学科研究组研究方向】:

- 1) 细胞器转录后表达调控
- 2) 细胞质雄性不育与育性恢复
- 3) 细胞器基因编辑

【代表性著作】:

1. **Chuande Wang**, Martine Quadrado, Hakim Mireau, Interplay of endonucleolytic and exonucleolytic processing in the 3'-end formation of a mitochondrial nad2 RNA precursor in Arabidopsis. **Nucleic Acids Research**, 2023;51(14).
2. **Chuande Wang**, Lina Lezhneva, Nadège Arnal, Martine Quadrado, Hakim Mireau. The radish Ogura fertility restorer impedes translation elongation along its cognate CMS-causing mRNA. **Proceedings of the National Academy of Sciences**, 2021, 118(35).
3. **Chuande Wang**, Rachel Fourdin, Martine Quadrado, Céline Dargel-Graffin, Dimitri Tolleter, David Macherel, Hakim Mireau. Rerouting of ribosomal proteins into splicing in plant organelles. **Proceedings of the National Academy of Sciences**, 2020, 117(47). (Recommended by F1000Prime).
4. **Chuande Wang**, Fabien Aube, Noelya Planchard, Martine Quadrado, Celine Dargel-Graffin, Fabien Nogue and Hakim Mireau. The pentatricopeptide repeat protein MTSF2 stabilizes a nad1 precursor transcript and defines the 3' end of its 5-half intron. **Nucleic acids research**, 2017, 45:6119-6134.
5. **Chuande Wang**, Lisa Blondel, Martine Quadrado, Céline Dargel-Graffin, Hakim Mireau. Pentatricopeptide repeat protein MITOCHONDRIAL STABILITY FACTOR 3 ensures mitochondrial RNA stability and embryogenesis. **Plant Physiology**, 2022, 190(1).

#### ACADEMIC SALON (XLVII)

**SPEAKER:** Chuande Wang

Associate Professor, Department of Plant Science, SAB

**TIME :** 12:40-14:00 November 29th, 2023 (Wed)

**VENUE:** Room 104, Building B, SAB

**ORGANIZER:** Office of Discipline and Science & Technology, SAB;

Young Teachers Association, SAB

**TITLE:**

Cracking the Organelle Code: RNA-Binding Proteins at Work

**ABSTRACT:**

Mitochondria and chloroplasts, as two key organelles in plant cells, have most of their genes either transferred to the nuclear genome or lost during evolution. The metabolic regulation of RNA in higher plant organelles is highly complex, primarily involving post-transcriptional processing. Most protein factors necessary for the expression, biogenesis, and functional realization of organelle genes are encoded by nuclear genes. How these nuclear-encoded proteins regulate organelle gene expression, and consequently affect plant growth, development, and reproduction, has always been a core research topic in fundamental plant biology and crop hybrid breeding.