阎加培

博士　研究员　博士生导师

教育经历 EDUCATION:

2005.9 - 2010.7　北京林业大学　林学院　草坪管理（运动场）学士

2008.8 - 2010.8　美国密歇根州立大学　农业与自然资源学院　作物与土壤学　学士

2010.8 - 2016.1　美国康奈尔大学　农业与生命科学学院　作物学　博士

2005.9 - 2010.7　Beijing Forestry University, China, Bachelor of Agriculture

2008.8 - 2010.8　Michigan State University, United States, Bachelor of Science

2010.8 - 2016.1　Cornell University, United States, Ph.D.

科研与学术工作经历 RESEARCH:

2009.8 - 2009.12　美国普渡大学　农学系　研究助理

2016.1 - 2017.7　美国康奈尔大学　植物生物系　博士后

2017.8 - 2022.11　美国俄亥俄州立大学　分子遗传系　博士后

2022.12 至今　华中农业大学　生命科学与技术学院　研究员

2022.12 至今　湖北洪山实验室　研究员

2023.2　至今　作物遗传改良全国重点实验室　研究员

2009.8 - 2009.12　Purdue University, United States, Research Assistant

2016.1 - 2017.7　Cornell University, United States, Postdoctoral Associate

2017.8 - 2022.11　The Ohio State University, United States, Postdoctoral Scholar

2022.12 - present　College of Life Science and Technology, Huazhong Agricultural University, Wuhan, China, Principal Investigator

2022.12 - present　Hubei Hongshan Laboratory, Wuhan, China, Principal Investigator

2023.2 - present　National Key Laboratory of Crop Genetic Improvement, Wuhan, China, Principal Investigator

研究方向 Research Interests：

地球自传与公转形成的昼夜交替与季节变化使绝大多数真核生物演化出生命活动的周期性现象，如动物的昼行夜伏与季节性迁移、植物的气孔开闭与季节性开花等，这些节律活动由内源性节律钟（也称生物钟）驱动，控制着基因组大规模活跃基因的节律表达。我们课题组主要以水稻和拟南芥为研究对象，鉴定以节律钟基因为核心的基因组空间互作簇的基本组成，及其调控的节律基因时空交互与协同转录机制，为植物生长发育、开花结实与环境适应等节律钟相关复杂性状的共同作用提供理论基础。

Rotation and revolution of the earth generate diurnal and seasonal cycles. In order to adapt to the everchanging environment, most organisms have developed a rhythmic patter in their physiological and developmental processes that is under the control of a circadian clock. This endogenous, self-sustaining oscillator maintains a rhythm of ca. 24 h in processes as diverse as human sleep/wake cycles, insect pupal eclosion, fungal sporulation and the stomatal movement of plants. Behind these rhythmic actions is the large-scale gene oscillation. Work in our lab focuses on circadian regulation of the 3D genome structure and in defining the circadian core of the molecular components that comprise the chromatin spatial clusters in rice.

代表性论文 (*共同第一作者；#共同通讯作者) Selected Publications:

Yan, J., Li, S., Kim, Y.J., Zeng, Q., Radziejwoski, A., Wang, L., Nomura, Y., Nakagami, H., Somers, D.E. TOC1 clock protein phosphorylation controls complex formation with NF-YB/C to repress hypocotyl growth. **The EMBO Journal** (**2021**). 10.15252/embj.2021108684.

Yan, J., Kim, Y.J., Somers, D.E. Post-translational mechanisms of plant circadian regulation. **Genes (*Basel*)** (**2021**) 10.3390/genes12030325. Invited review.

Yan, J.*, Yu, H.*, Li, B., Fan, A., Melkonian, J., Wang, X., Zhou, T., Hua, J. Cell autonomous and non-autonomous functions of plant intracellular immune receptors in stomatal defense and apoplastic defense. **PLoS Pathogens** (**2019**) 10.1371/journal.ppat.1008094.

Yan, J.*, Chia, J.*, Sheng, H., Jung, H., Zavodna, T., Zhang, L., Huang, R., Jiao, C., Craft, E. J., M., Fei, Z., Kochian, L. V., Vatamaniuk, O. K. *Arabidopsis* pollen fertility requires the transcription factors CITF1 and SPL7 that regulate copper delivery to anthers and jasmonic acid synthesis. **The Plant Cell** (**2017**) 10.1105/tpc.17.00363.

Yang, D.*, Shi, Z.*, Bao, Y.*, **Yan, J**.*, Yang, Z., Yu, H., Li, Y., Gou, M., Wang, S., Zou, B., Xu, D., Ma, Z., Kim, J., Hua, J. Calcium pumps and interacting BON1 protein modulate calcium signature, stomatal closure, and plant immunity. **Plant Physiology** (**2017**) 10.1104/pp.17.00495.

Zhang, L.*, **Yan, J**.*, Vatamaniuk, O. K., Du X. CsNIP2;1 is a plasma membrane transporter from *Cucumis sativus* that facilitates urea uptake when expressed in Saccharomyces cerevisiae and *Arabidopsis thaliana*. **Plant & Cell Physiology** (**2016**) 10.1093/pcp/pcw018.

Chia, J., **Yan, J**., Ishka, M. R., Faulkner, M. M., Simons, E., Huang, R., Smieska, L., Woll, A., Tappero, R., Kiss, A., Jiao, C., Fei, Z., Kochian, L.V., Walker, E., Piñeros, M., Vatamaniuk, O. K. Lack of OPT3

decreases phloem copper levels and impairs crosstalk between copper and iron homeostasis and shoot-to-root signaling in *A. thaliana*. **The Plant Cell** (**2023**), accepted. bioRxiv10.1101/2021.07.30.454504.

Zhang, A., Wang, S., Kim, J., **Yan, J.**, Yan, X., Pang, Q., Hua, J. Nuclear pore complex components have temperature-influenced roles in plant growth and immunity. **Plant, Cell & Environment** (**2020**) 10.1111/pce.13741.

Li, Z., Liu, H., Ding, Z., **Yan, J.**, Yu, H., Pan, R., Hu, J., Guan, Y., Hua, J. Low temperature enhances plant immunity via Salicylic Acid pathway genes that are repressed by ethylene. **Plant Physiology** (**2020**) 10.1104/pp.19.01130.

Yu, H., **Yan, J**., Du, X., Hua, J. Overlapping and differential roles of plasma membrane calcium ATPases in Arabidopsis growth and environmental responses. **J Exp Bot.** (**2018**) 10.1093/jxb/ery073.

Jung, H., **Yan, J**., Zhai, Z., and Vatamaniuk, O. K. Gene functional analysis using protoplast transient assays. **Plant Functional Genomics** (**2015**), 10.1007/978-1-4939-2444-8_22.

Jung, H., Gayomba, S. R., **Yan, J**., and Vatamaniuk, O. K. Brachypodium distachyon, as a model system for studies of copper transport in cereal crops. **Frontiers in Plant Nutrition** (**2014**), 10.3389/fpls.2014.00236.

Gayomba, S. R., Jung, H., **Yan, J**., Danku, J., Rutzke, M. A., Bernal, M., Krämer, U., Kochian, L. V., Salt, D. E. and Vatamaniuk, O. K. The CTR/COPT-dependent copper uptake and SPL7-dependent Cu deficiency responses are required for basal cadmium tolerance in *A. thaliana*. **Metallomics** (**2013**), 10.1039/c3mt00111c.

Yu, X., Luo, N., **Yan, J.**, Tang, J., Liu, S. and Jiang, Y. Differential growth response and carbohydrate metabolism of global collection of perennial ryegrass accessions to submergence and recovery following de-submergence. **Journal of Plant Physiology** (**2012**), 10.1016/j.jplph.2012.03.001.

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