



Jincai Shi

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Location: Nanjing, Jiangsu

Education

CAS center for Excellence in Molecular Plant Science Genetics (Ph.D.)	2014.09-2021.06
Lanzhou University Pratacultural Science (Bachelor)	2010.09-2014.06

Work experience

2024.03-present	Nanjing Agricultural University	Professor
2021.07-2024.01	CAS center for Excellence in Molecular Plant Science	Postdoctor

Research interest

Leguminous plants can establish a symbiotic relationship with rhizobia to fix atmospheric nitrogen into plant-usable nitrogen compounds. Additionally, over 80% of plants in nature acquire nutrients by forming symbiotic associations with arbuscular mycorrhizal (AM) fungi. We primarily focus on soybean as a model system to investigate legume-rhizobia symbiotic nitrogen fixation and plant-AM fungi symbiosis. By integrating techniques from genetics, molecular biology, cell biology, and multi-omics analyses, we aim to elucidate the molecular mechanisms by which AM symbiosis enhances plant nutrient uptake and stress tolerance, and decipher how rhizobial symbiosis and AM symbiosis coordinately respond to environmental signals.

Publication

Shi J[#], Zhao B, Zheng S, Zhang X, Wang X, Dong W, Xie Q, Wang G, et al. A phosphate starvation response-centered network regulates mycorrhizal symbiosis. *Cell*, 2021, 184: 5527-5540.

Shi J[#], Zhao B[#], Jin R[#], Hou L, Zhang X, Dai H, Yu N and Wang E. A phosphate starvation response-regulated receptor-like kinase, OsADK1, is required for mycorrhizal symbiosis and phosphate starvation response. *New phytologist*, 2022, 236: 2282-2293.

Shi J[#], Wang X[#], Wang E. Mycorrhizal symbiosis in plant growth and stress adaption: from genes to ecosystems. *Annual Review of Plant Biology*, 2023, 74:22.1-22.39.

Wang W[#], **Shi J[#]**, Xie Q, Jiang Y, Yu N and Wang E. Nutrient exchange and regulation in arbuscular mycorrhizal symbiosis. *Molecular Plant*, 2017, 10: 1147-1158.

Dai H[#], Zhang X[#], Zhao B[#], **Shi J**, Zhang C, Wang G, Yu N and Wang E. Colonization of mutualistic mycorrhizal and parasitic blast fungi requires OsRAM2-regulated fatty acid biosynthesis in rice.

Molecular Plant-Microbe Interactions, 2022, 35(3): 178-186.