

Curriculum Vitae

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1. Education

09/2005 – 07/2009, B.Sc.

Huazhong Agriculture University, Wuhan, China

Major: Plant Science and Biotechnology

09/2009 – 07/2015, Ph.D.

Huazhong Agriculture University, Wuhan, China

Major: Plant Pathology

Advisor: Prof. Daohong Jiang

Thesis title: Research on Mycoviruses in *Sclerotinia sclerotiorum*-the causal agent of Sclerotinia Stem rot of *Brassica napus* L

2. Professional Experience/Employment

07/2015 - 12/2020, Assistant Professor, Genomics and Disease Resistance Improvement Team at OCRI

01/2017 - 12/2019, Postdoctoral Fellow, University of Saskatchewan, Canada

01/2021- 09/2022, Associate Professor, Executive Chief Scientist, Genomics and Disease Resistance Improvement Team at OCRI

10/2022 - 12/2025, Professor (Specially Appointed), Chief Scientist, Genomics and Disease Resistance Improvement Team at OCRI

08/2024 - Lead Scientist and Head of the Research Division for Plant Protection of Oilseed rape in China Agricultural Research System

01/2026 - Professor, Chief Scientist, Genomics and Disease Resistance Improvement Team at OCRI

3. Main Awards

- 1) Second Prize of the 16th Hubei Provincial Excellent Academic Paper Awards in Natural Sciences, 2016
- 2) Major Scientific Discovery Award of the Chinese Academy of Agricultural Sciences, 2025
- 3) Commended by the Ministry of Agriculture and Rural Affairs, 2026

4. Professional activities

- 1) Council Member of the Chinese Society for Plant Pathology
- 2) Council Member of the Oil Crops Professional Committee of the Chinese Society of Crop Science
- 3) Executive Council Member of the Hubei Society for Plant Pathology
- 4) Editorial Board Member of Oil Crop Sciences
- 5) Editor of the Journal of Applied Genetics

5. Representative Publications

Clubroot disease

- 1) Zhang, X., Wu, Y., Hou, J., Gao, L., Pan, L., Shen, C., Zhao, C., Gao, F., Zhang, Y., Ren, L., Fang, X., Dun, X., Liu, S., and **Liu, L.** (2026). RNAi in the Rhizarian Phytopathogen *Plasmodiophora brassicae*: The Causal Agent of Clubroot Disease in Cruciferous Crops. **Advanced Science**, e24028. (**Corresponding author**)
- 2) Wu, Y., Zhao, C., Zhang, Y., Shen, C., Zhang, Y., Zhang, X., Gao, L., Zeng, L., Ke, Q., Qin, L., Liu, F., Huang, J., Ren, L., Liu, Y., Cheng, H., Tong, C., Hu, Q., Cheng, X., Wei, Y., Liu, S., and **Liu, L.** (2025). Inactivation of β -1,3-glucan synthase-like 5 confers broad-spectrum resistance to *Plasmodiophora brassicae* pathotypes in cruciferous plants. **Nature Genetics** 57, 2302-2312. (**Co-corresponding author**)
- 3) Lijiang Liu, Chuanji, Zhao. (2025). Improving broad-spectrum resistance to clubroot disease with one gene. **Nature Genetics**. (**First author**)
- 4) Zeng, L., Zhang, Y., Wu, Y., Zhang, X., Zhao, C., Ren, L., Huang, J., Cheng, X., Liu, S., and **Liu, L.** (2023). Pathotype characterization of *Plasmodiophora brassicae* by European Clubroot Differential and Williams sets in China. **Plant Disease**. (**Corresponding author**)
- 5) **Liu, L.**, Qin, L., Zhou, Z., Hendriks, W.G., Liu, S., and Wei, Y. (2020a). Refining the life cycle of *Plasmodiophora brassicae*. **Phytopathology** 110, 1704-1712. (**First author, Editor's pick, high citation**)
- 6) **Liu, L.**, Qin, L., Cheng, X., Zhang, Y., Xu, L., Liu, F., Tong, C., Huang, J., Liu, S., and Wei, Y. (2020b). Comparing the Infection Biology of *Plasmodiophora brassicae* in Clubroot Susceptible and Resistant Hosts and Non-hosts. **Frontiers in Microbiology** 11. (**First author**)
- 7) ZHANG Yun-han, PAN Long-qi, ZHANG Xiong, ZHOU Yuan-wei, ZENG Ling-yi, SHAN Rong, YU Yun-fang, REN Li, **LIU Li-jiang**. (2026) Quantification and risk potential of seed-borne *Plasmodiophora brassicae* on *Brassica napus* seeds, **Chinese Journal of Oil Crop Sciences**, 2026, 48 (1):202-208 (In Chinese, **Co-corresponding author**)

Sclerotinia stem rot disease

- 1) Bai, Z., He, Y., Huang, J., Zhong, X., Shi, M., Zuo, R., Tang, M., Xie, M., Gao, F., Tong, C., **Liu, L.**, and Liu, S. (2026). The genetic fusion of thaumatin-like proteins with antimicrobial peptides or receptor-like kinases at different evolutionary time points contributes to plant resistance against *Sclerotinia* disease. **Plant Physiology and Biochemistry** 231, 111065. (**Co-corresponding author**)
- 2) Zhao, C., Zhang, Y., Gao, L., Xie, M., Zhang, X., Zeng, L., Liu, J., Liu, Y., Zhang, Y., Tong, C., Hu, Q., Cheng, X., **Liu, L.**, and Liu, S. (2024). Genome editing of RECEPTOR-LIKE KINASE 902 confers resistance to necrotrophic fungal pathogens in *Brassica napus* without

- growth penalties. **Plant Biotechnol Journal** 22, 538-540. (Co-corresponding author)
- 3) Liu, J., Wu, Y., Zhang, X., Gill, R.A., Hu, M., Bai, Z., Zhao, C., Zhang, Y., Liu, Y., Hu, Q., Cheng, X., Huang, J., **Liu, L.**, Yan, S., and Liu, S. (2023a). Functional and evolutionary study of MLO gene family in the regulation of Sclerotinia stem rot resistance in Brassica napus L. **Biotechnology for Biofuels and Bioproducts** 16, 86. (Co-corresponding author)
 - 4) Zhang, X., Cheng, X., **Liu, L.**, and Liu, S. (2021). Genome Sequence Resource for the Plant Pathogen Sclerotinia sclerotiorum WH6 Isolated in China. **Plant Disease** 105, 3720-3722. (Corresponding author)
 - 5) **Liu, L.**, Qin, L., Safdar, L.B., Zhao, C., Cheng, X., Xie, M., Zhang, Y., Gao, F., Bai, Z., Huang, J., Bhalerao, R.P., Liu, S., and Wei, Y. (2023b). The plant trans-Golgi network component ECHIDNA regulates defense, cell death, and endoplasmic reticulum stress. **Plant Physiology** 191, 558-574. (First author)

Genome and Germplasm

- 1) Cui, X., Xie, M., Yao, M., Hu, M., Huang, J., Liu, Y., Gao, F., Bai, Z., Zhang, Y., **Liu, L.**, Liu, S., and Tong, C. (2026). Population-scale landscape of TE insertion polymorphisms reveal their roles in gene expression regulation, adaptation, and agronomic traits in Brassica napus. **Journal of Integrative Plant Biology** 00: 1–17 (Co-corresponding author)
- 2) He, Y., Bai, Z., Wang, Z., Bai, Y.-X., Ke, Q., Liu, F., Tong, C., Gu, A., Francisco, M., Xu, D., Liu, L., Yang, Q.-Y., Liu, S., Lin, W.-H., and Zhang, Y. (2026). Comparative genomics and time-course transcriptomics uncover homoeologous exchange events reshaping glucosinolate metabolism in Brassica napus. **Molecular Horticulture** 6, 52. (Co-corresponding author)
- 3) Tao, B., **Liu, L.**, Chen, M., Qu, C., Zhao, C., He, X., Tong, C., Ni, C., Zhao, L., Wu, X., Zou, J., Zhang, Y., and Shen, J. (2026). Rapeseed science and production in China: Advances, challenges, and prospects. **Journal of Integrative Agriculture** 25(11): 2–28. (Co-first author)
- 4) Zhao, C., Safdar, L.B., Xie, M., Shi, M., Dong, Z., Yang, L., Cheng, X., Liu, Y., Bai, Z., and Xiang, Y. Chaobo, Tong, Junyan, Huang, **Lijiang, Liu**, Shengyi, Liu (2020). Mutation of the PHYTOENE DESATURASE 3 gene causes yellowish-white petals in Brassica napus. **The Crop Journal** 9(5): 1124-1134 (Co-corresponding author)

Mycoviruses of Sclerotinia sclerotiorum (PhD student projects)

- 1) **Liu, L.**, Cheng, J., Fu, Y., Liu, H., Jiang, D., and Xie, J. (2017). New insights into reovirus evolution: implications from a newly characterized mycoreovirus. **Journal of General Virology** 98, 1132-1141. (First author)
- 2) **Liu, L.**, Wang, Q., Cheng, J., Fu, Y., Jiang, D., and Xie, J. (2015). Molecular characterization of a bipartite double-stranded RNA virus and its satellite-like RNA co-infecting the phytopathogenic fungus Sclerotinia sclerotiorum. **Frontiers in Microbiololy** 6, 406. (First author)
- 3) **Liu, L.**, Xie, J., Cheng, J., Fu, Y., Li, G., Yi, X., and Jiang, D. (2014). Fungal negative-stranded RNA virus that is related to bornaviruses and nyaviruses. **Proceedings of the National Academy of Sciences** 111, 12205-12210. (First author)

6. Fundings

- 1) National Natural Science Foundation of China (32672633), 2027.01-2030.12
- 2) Innovation Program of the Chinese Academy of Agricultural Sciences (CAAS-OCRI), 2022.01-2030.12
- 3) China Agriculture Research System of MOF and MARA (CARS-12), 2024.01-2030.12
- 4) National Biological Breeding-Major Projects (2023ZD04042), 2023.09-2025.12
- 5) National Natural Science Foundation of China (U20A2034), 2021.01-2024.12
- 6) National Natural Science Foundation of China (32170366), 2022.01-2025.12
- 7) National Key Research and Development Program of China (2016YFD0100602), 2016.01-2020.12
- 8) National Natural Science Foundation of China (31601628), 2017.01-2019.12