Wenbo Li

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EMPLOYMENT

- **Postdoctoral Research Associate, Division of Diabetes, Endocrinology and Metabolism, Baylor College of Medicine** — Jul. 2017-ongoing
  Supervisor: Dr. Zheng Sun.
- **Postdoctoral Research Associate, Department of Biology and Biochemistry, University of Houston.** — Jun. 2016-Jul. 2017
  Supervisor: Dr. Li Chen.
- **Postdoctoral Research Associate, BioSciences Department, Rice University.** — Jan. 2014-Jul. 2015
  Supervisor: Dr. Janet Braam

EDUCATION

Ph. D. **Developmental Physiology and Molecular Biology program**, Beijing Normal University, Beijing, China. Advisor: Dr. Yingdian Wang — Sept. 2006-Jun. 2013
Core courses: Genomics, Immunology, Proteomics, Developmental Biology, Gene Engineering, and Biological Literature Study.

Botany and Plant Sciences Ph.D. joint training program, University of California, Riverside, USA. Advisor: Dr. Jian-Kang Zhu — Sept. 2007-Jul. 2009

B. S. **Biological Sciences**, Beijing Normal University — Sept. 2002-Jul. 2006
Core courses: Molecular Biology, Genetics, Biochemistry, Cell Biology, Cell Engineering, Cell Culture and Tissue Culture, Physiology, Zoology, Botany, and Microbiology.

SELECTED RESEARCH PROJECTS

- **Hdac3 function during Heart failure in Type I Diabetes Mouse Model** — Jul. 2017 - ongoing
  Supervisor: Dr. Zheng Sun
  I knocked out Hdac3 gene in Type I diabetes mouse model, to study how Hdac3 contribute to heart failure during diabetes.
- **De facto Target of Histone Deacetylase Inhibitors** — Jul. 2017 - ongoing
  Supervisor: Dr. Zheng Sun
  I am using lentivirus based CRISPR library to screen or genes that upon activation or silencing , confers resistance to HDI-mediated cell death in liver cancer cells.
- **Numa function in lineage determination during embryo development.** — Aug.2016-Jul. 2017
  Supervisor: Dr. Li Chen *Group leader***:** Dr. Robert J. Schwartz

I used multiple markers to test Mesp1 lineage-specific Numa deletion cells in early embryo development stage and found out that cell differentiation in this group is dramatically reduced.

✧ **Mesp1 lineage cells migration to endoderm.** Jul. 2016 - Jul. 2017

Supervisor: Dr. Li Chen *Group leader***:** Dr. Robert J. Schwartz

We discovered that one subgroup of Mesp1 lineage cells can migrate to endoderm. I found out that the cell number of Mesp1 lineage endoderm migration group increased in Mesp1 know-out embryos, and the endoderm cells also increased in non-Mesp1 lineage cells.

✧ **How jasmonate and peroxisomes defend plant against fungus infection.** May. 2014 -Jul. 2015

Supervisor: Dr. Janet Braam

I discovered that when infected by the fungus (*Botrytis cinerea*), jasmonate biosynthesis mutant *aos* died from infection while wild-type lived as the infection was blocked at the petiole and that the blockage of infection was jasmonate-dependent. I also found that the number of peroxisome organelles, inside which jasmonate acid was synthesized, increased after fungus infection**.**

✧ **Investigation of opr3 suppressors in *Arabidopsis*.** Jan. 2014 - Jul. 2015

Supervisor: Dr. Janet Braam

I screened for *Arabidopsis* mutants that compromise infertile phenotype of *opr3* and found 3 qualified mutants. I used both genome sequencing method and map-based cloning and narrowed down one mutant to 3 possible genes**.**

✧ **Investigation of the function of cytoskeleton organization in detoxification of ROS in *Arabidopsis* during salt stress tolerance.** Jan. 2008- Jan.2012

Supervisor: Drs. Jian-Kang Zhu and Yingdian Wang

I screened for salt-sensitive *Arabidopsis* mutants, identified and cloned the mutant gene RSA3. I discovered that RSA3, along with other proteins, plays a critical role in salt stress tolerance, which is maintaining the proper organization of actin microfilaments and minimizing damage caused by excessive ROS.

✧ **Investigation of the function of RDM12 in DNA methylation of *Arabidopsis*.** Sept.2007 -Jun. 2009

Supervisor: Dr. Jian-Kang Zhu. *Collaborator:* Zhi-min Zheng, Xinjian He

We screened for second-site suppressors of ros1, and identified the RDM12 locus. We then investigated the function of the gene and discovered that RDM12 is a component of the RdDM pathway, and that RdDM may involve double-stranded RNAs with a 5' overhang and the partnering between RDM12 and RDR2.

PUBLICATIONS

- Shiyang Song, Chih-Liang Tien, Hao Cui, Paul Basil, Ningxia Zhu, Yingyun Gong, **Wenbo Li**, Hui Li, Qiying Fan, Jong Min Choi, Weijia Luo, Yanfeng Xue, Rui Cao, Wenjun Zhou, Andrea R Ortiz, Brittany Stork, Vatsala Mundra, Nagireddy Putluri, Brian York, Maoping Chu, Jiang Chang, Sung Yun Jung, Liang Xie, Jiangping Song, Lilei Zhang, Zheng Sun. (2022) Myocardial Rev-erb-Mediated Diurnal Metabolic Rhythm and Obesity Paradox. Circulation.145(6), 448-464
- Guolian Ding, Xin Li, Xinguo Hou, Wenjun Zhou, Yingyun Gong, Fuqiang Liu, Yanlin He, Jia Song, Jing Wang, Paul Basil, **Wenbo Li**, Sichong Qian, Pradip Saha, Jinbang Wang, Chen Cui, Tingting Yang, Kexin Zou, Younghun Han, Christopher I Amos, Yong Xu, Li Chen, Zheng Sun. (2021). REV-ERB in GABAergic neurons controls diurnal hepatic insulin sensitivity. Nature. 592(7867), 763-767
- **Wenbo Li** and Zheng Sun. (2019). Mechanism of Action for HDAC Inhibitors—Insights from Omics Approaches. International journal of molecular sciences. 20(7), 1616.
- Shun Bai, Kaiqiang Fu, Huiqi Yin, Yiqiang Cui, Qiuling Yue, **Wenbo Li**, ..., Lan Ye. (2018). Sox30 initiates transcription of haploid genes during late meiosis and spermiogenesis in mouse testes. Development. 145(13): dev164855.
- **Wenbo Li**, Qingmei Guan, Zhen-Yu Wang, Yingdian Wang and Jianhua Zhu. (2013). A Bi-Functional Xyloglucan Galactosyltransferase Is an Indispensable Salt Stress Tolerance Determinant in *Arabidopsis*. Molecular Plant. 6 (4): 1344-1354.
- Hai Liu, Defeng Shen, Shenghua Jia, **Wenbo Li**, Jin Liu, Shengcheng Han and Yingdian Wang. (2012). Microarray-based Screening of the MicroRNAs Associated with Caryopsis Development in *Oryza sativa*. Biologia Plantarum. 57(2): 255-261.
- Zhen-Yu Wang, Liming Xiong, **Wenbo Li**, Jian-Kang Zhu and Jianhua Zhu. (2011). The Plant Cuticle Is Required for Osmotic Stress Regulation of Abscisic Acid Biosynthesis and Osmotic Stress Tolerance in *Arabidopsis*. The Plant Cell. 23: 1971-1984.
- Zhimin Zheng, Yu Xing, Xin-Jian He, **Wenbo Li**, Yuanlei Hu, Sudesh Kumar Yadav, JeeEun Oh and Jian-Kang Zh yuxinf@bcm.edu u. (2010). An SGS3-like Protein Function in RNA- directed DNA Methylation and Transcriptional Gene Silencing in *Arabidopsis*. The Plant Journal. 62: 92-99.
- Xiaojin Zhou, Jie Li, Wei Chen, Hai Liu, Mengmeng Li, Yuan Zhang, **Wenbo Li**, Shengcheng Han and Yingdian Wang. (2010). Gene Structure Analysis of Rice ADP-ribosylation Factors (OsARFs) and their mRNA Expression in Developing Rice Plants. Plant Molecular Biology Reporter. 28: 692-703.

TECHNICAL EXPERTISE

- Wetlab skills: CRISPR CAS9, DNA and RNA extraction, PCR, standard RT-PCR, semi-quantitative RT-PCR, map-based cloning, Northern Blotting, Western Blotting, DNA cloning, plasmid construction, Yeast Two-Hybrid, transformation, cell culture, cell transfection, stem cell culture, *in vitro* embryo culture, protein isolation and purification, UHPLC analysis, GC-MS analysis, spectrophotometry, fluorescence

microscopy, confocal microscopy, flow cytometry, mouse breeding and husbandry, and animal dissection.

- ✧ Computer Skills: DNASTAR - Lasergene, Oligo 6, Primer 3, GeneDoc, Clone Manager, Vector NTI, GeneMapper, DNAMAN, SYSTAT, Photoshop, Canvas, Microsoft Word, Excel and PowerPoint, Endnote.