

Xiong Aisheng



Areas of Research

Apiaceae Plant (carrot and celery) Genetics and Germplasm Enhancement; Breeding

Contact Information

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Research Interests

Apiaceae vegetable (carrot and celery) Genetics and Germplasm Enhancement;
Apiaceae vegetable (carrot and celery) Breeding;
Apiaceae vegetable (carrot and celery) secondary metabolism;
Apiaceae Plant evolutionary genomics;
Apiaceae Plant domestication;
Apiaceae Plant abiotic stress

Education Background

Bachelor: Yangzhou University

Master: Yangzhou University

Doctor: Nanjing Agricultural University

Work experience

Professor, Biotechnology Research Institute, Shanghai Academy of Agricultural Sciences, 2000-2011

Professor, State Key Laboratory of Crop Genetics and Germplasm Enhancement, College of Horticulture, Nanjing Agricultural University, 2011-

Honors and Awards

Frist class prize of Shanghai Advanced Science and Technology

Second class prize of Shanghai Advanced Science and Technology

Third class prize of Shanghai Advanced Science and Technology

New Century Excellent Talents of Ministry of Education of China

Natural Science Foundation for Distinguished Young Scholars of Jiangsu

Shanghai Youth Science and Technology Rising-Star

Selected Publication

1. **Book:** Xiong AS, Wang F, Tan GF. General introduction of wild Vegetable cultivation, Jiangsu Phoenix Science and Technology Press, 2014, Nanjing.
2. **Book:** Xiong AS, Tan GF. Apiaceae vegetable Germplasm Resources, Jiangsu Phoenix Science and Technology Press, 2019 Nanjing.
3. **Book Chapter:** Xiong AS, Yao QH, Peng RH, Cheng ZM: Directed in vitro Evolution of Reporter Genes Based on Semi-Rational Design and High Throughput Screening. Methods Mol Biol. *In Vitro* Mutagenesis Protocols. 3rd edition. Edited by Jeff Braman. Springer, Humana Press Inc. Totowa, NJ, USA. **2010**.
4. **Book Chapter:** Peng RH, Xiong AS, Xue Y, Fu XY, Gao F, Zhao W, Tian YS, Yao QH. A profile of ring-hydroxylating oxygenases that degrade aromatic pollutants. Reviews of Environmental Contamination and Toxicology. Edited by D.M. Whitacre, Springer Science+Business Media, LLC **2010**.
5. Li MY, Feng K, Hou XL, Jiang Q, Xu ZS, Wang GL, Liu JX, Wang F, Xiong AS*. The genome sequence of celery (*Apium graveolens* L.), an important leaf vegetable crop rich in apigenin in the Apiaceae family. *Hortic Res.* 2020, 7:9.
6. Xu ZS, Yang QQ, Feng K, Yu X, Xiong AS*. DcMYB113, a root-specific R2R3-MYB, conditions anthocyanin biosynthesis and modification in carrot. *Plant Biotechnol J.* 2020, 18(7):1585-1597.
7. Que F, Wang YH, Xu ZS, Xiong AS*. DcBAS1, a Carrot Brassinosteroid Catabolism Gene, Modulates Cellulose Synthesis. *J Agric Food Chem.* 2019, 67(49):13526-13533.
8. Que F, Hou XL, Wang GL, Xu ZS, Tan GF, Li T, Wang YH, Khadr A, Xiong AS*. Advances in research on the carrot, an important root vegetable in the Apiaceae family. *Hortic Res.* 2019, 6:69.
9. Xu ZS, Yang QQ, Feng K, Xiong AS*. Changing Carrot Color: Insertions in DcMYB7 Alter the Regulation of Anthocyanin Biosynthesis and Modification. *Plant Physiol.* 2019, 181(1):195-207.
10. Li T, Wang YH, Liu JX, Feng K, Xu ZS, Xiong AS*. Advances in genomic, transcriptomic, proteomic, and metabolomic approaches to study biotic stress in fruit crops. *Crit Rev Biotechnol.* 2019, 39(5):680-692.
11. Tian YS, Wang B, Peng RH, Xu J, Li T, Fu XY, Xiong AS*, Gao JJ, Yao QH*.

- Enhancing carotenoid biosynthesis in rice endosperm by metabolic engineering. *Plant Biotechnol J*. 2019,17(5):849-851.
12. Wang YH, Wu XJ, Sun S, Xing GM, Wang GL, Que F, Khadr A, Feng K, Li T, Xu ZS, Xiong AS*. DcC4H and DcPER Are Important in Dynamic Changes of Lignin Content in Carrot Roots under Elevated Carbon Dioxide Stress. *J Agric Food Chem*. 2018, 66(30):8209-8220.
 13. Li MY, Hou XL, Wang F, Tan GF, Xu ZS, Xiong AS*. Advances in the research of celery, an important Apiaceae vegetable crop. *Crit Rev Biotechnol*. 2018, 38(2):172-183.
 14. Wang GL, Xiong F, Que F, Xu ZS, Wang F, Xiong AS*. Morphological characteristics, anatomical structure, and gene expression: novel insights into gibberellin biosynthesis and perception during carrot growth and development. *Hortic Res*. 2015, 2:15028.
 15. Xu ZS, Tan HW, Wang F, Hou XL, Xiong AS*. CarrotDB: a genomic and transcriptomic database for carrot. *Database (Oxford)*. 2014, 2014. pii: bau096.
 16. Li MY, Wang F, Jiang Q, Ma J, Xiong AS*. Identification of SSRs and differentially expressed genes in two cultivars of celery (*Apium graveolens* L.) by deep transcriptome sequencing. *Hortic Res*. 2014, 1:10.
 17. Zhuang J, Zhang J, Hou XL, Wang F, Xiong AS*. Transcriptomic, Proteomic, Metabolomic and Functional Genomic Approaches for the Study of Abiotic Stress in Vegetable Crops. *Crit Rev Plant Sci*. 2014, 33: 225-237.
 18. Xiong AS, Peng RH, Zhuang J, Davies J, Zhang J, Yao QH. Advances in directed molecular evolution of reporter genes. *Crit Rev Biotechnol*. 12, 32(2):133-42.
 19. Xiong AS, Peng RH, Zhuang J, Gao F, Zhu B, Fu XY, Xue Y, Jin XF, Tian YS, Zhao W, Yao QH. Gene duplication, transfer and evolution in chloroplast genome. *Biotech Adv*. 2009, 27: 340-347.
 20. Xiong AS, Peng RH, Zhuang J, Gao F, Li Y, Cheng ZM, Yao QH. Chemical Gene Synthesis: Strategies, softwares, Error Corrections, and Applications. *FEMS Micro Rev*. 2008, 32(3): 522-540.
 21. Xiong AS, Peng RH, Zhuang J, Liu JG, Gao F, Chen JM, Cheng ZM, Yao QH. The Non-polymerase-cycling-assembly-based Chemical Gene Synthesis: Strategies, Methods, and Progress. *Biotech Adv*. 2008, 26(2):121-134.
 22. Xiong AS, Peng RH, Zhuang J, Liu JG, Gao F, Xu F, Cai B, Yao QH. A semi-rational design strategy of directed evolution combined with chemical synthesis of DNA sequences. *Biol Chem*. 2007, 388(12): 1291-1300.
 23. Xiong AS, Yao QH, Peng RH, Duan H, Li X, Fan HQ, Cheng ZM, Li Y. PCR-based accurate synthesis of long DNA sequences. *Nat Protoc*. 2006, 1(2): 791-797.
 24. Xiong AS, Yao QH, Peng RH, Li X, Fan HQ, Cheng ZM, Li Y. A simple, rapid, high-fidelity and cost-effective PCR-based two-step DNA synthesis method for long gene sequences. *Nucleic Acids Res*. 2004, 32(12): e98: 1-10.
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