

## ***CURRICULUM VITAE***

**NAME: Li Li**

Robert W. Holley Center for Agriculture and Health,  
Department of Plant Breeding & Genetics  
Cornell University, Tower Road  
Ithaca, NY 14853  
Tel: (607) 255-5708  
Fax: (607) 255-1132  
Email: li.li@ars.usda.gov  
ll37@cornell.edu

### **RESEARCH INTERESTS**

Gene discovery and elucidation of the mechanisms underlying phytonutrient and micronutrient metabolism, as well as plant biotechnology and biofortification for improving the nutritional quality and health-promoting properties of food crops. Current research focuses primarily on carotenoid and anthocyanin biosynthesis as well as selenium and glucosinolate metabolism in *Brassica* and staple crops.

### **HIGHER EDUCATION**

Plant Biochemistry and Physiology, Reading University, U. K.; Ph.D.  
Horticulture, Sichuan Agricultural University, P. R. China; B.S.

### **PROFESSIONAL EXPERIENCE**

2009-present Adjunct Associate Professor, Department of Plant Breeding and Genetics,  
Cornell University  
2003-2009 Adjunct Assistant Professor, Department of Plant Breeding and Genetics,  
Cornell University  
2002-present Research Molecular Biologist (Plant), USDA-ARS, Plant, Soil and Nutrition  
Laboratory, Cornell University, Ithaca, NY  
1995-2002 Research Associate IV, Department of Plant Biology, Department of Breeding  
and Genetics, Cornell University  
1993-1995 Postdoctoral Associate, Department of Biochemistry, University of Missouri-  
Columbia  
1988-1992 Postdoctoral Associate, Department of Biochemistry, MSU-DOE Plant  
Research Laboratory, Michigan State University  
1984-1988 Graduate Assistant, Department of Botany, Reading University, U. K.

### **TEACHING EXPERIENCE**

Co-Instructor for Nutritional Quality Improvement of Food Crops (PLBR 4070)  
Guest Lecturer for several courses

## PUBLICATIONS

- Li L, Tadmor Y, Xu Q (2014) Approaches for vegetable and fruit quality trait improvement. In *Plant Biotechnology – Experience and Future Prospects* (Edited by A. Richoch, S Chopra, S Fleischer). Springer (in press)
- Li L, Yuan H (2013) Review: Chromoplast biogenesis and carotenoid accumulation. *Archives of Biochemistry and Biophysics* 539: 102-109
- Zhang J, Li H, Zhang M, Hui M, Qi W, Li L, Zhang L (2013) Fine mapping and identification of candidate *Bo-or* gene controlling orange head of Chinese cabbage (*Brassica rapa* L. ssp. *Pekinensis*). *Molecular Breeding* 32: 799-805
- Souza GA, Carvalho JG, Rutzke M, Albrecht JC, Guilherme LRG, Li L (2013) Evaluation of germplasm effect on Fe, Zn and Se content in wheat seedlings. *Plant Science* 210: 206-213
- Avila FW, Faquin V, Yang Y, Ramos SJ, Guilherme LRG, Thannhauser TW, Li L (2013) Assessment of the anticancer compounds *Se*-methylselenocysteine and glucosinolates in *Se*-biofortified broccoli (*Brassica oleracea* var. *italica*) sprouts and florets. *Journal of Agriculture and Food Chemistry* 61: 6216-6223
- Wang YQ, Yang Y, Fei Z, Yuan H, Fish T, Thannhauser TW, Mazourek M, Kochian LV, Wang X, Li L (2013) Proteomic analysis of chromoplasts from six crop species reveals insights into chromoplast function and development. *Journal of Experimental Botany* 64:949-961
- Chiu LW, Li L (2012) Characterization of the regulatory network of BoMYB2 in controlling anthocyanin biosynthesis in purple cauliflower. *Planta* 236: 1153-1164
- Li L, Yang Y, Xu Q, Owsiang K, Welsch R, Chitchumroonchokchai C, Lu S, Van Eck J, Deng X, Failla M, Thannhauser TW (2012) The *Or* gene enhances carotenoid accumulation and stability during post-harvest storage of potato tubers. *Molecular Plant* 5: 339-352
- Brown A, Paterson AH, Li L (2012) Genomics and breeding in food crops. In *OMICS Technologies: Tools for Food Sciences* (Edited by N. Benkenblla). Taylor & Francis Group, CRC Press, pp141-162
- Zhou X, Fei Z, Thannhauser TW, Li L (2011) Transcriptome profiling of ectopic chloroplast development in green curd cauliflower (*Brassica oleracea* L. var. *botrytis*). *BMC Plant Biology* 11:169

Yang Y, Xu Q, Owsiany K, Zhang S, Thannhauser TW, Li L (2011) Evaluation of different multidimensional LC-MS/MS pipelines for iTRAQ-based proteomic analysis of potato tubers in response to cold storage. *Journal of Proteome Research* 10: 4647-4660

Zhou X, McQuinn R, Fei Z, Wolters AM, Van Eck J, Brown C, Giovannoni JJ, Li L (2011) Regulatory control of high levels of carotenoid accumulation in potato tubers. *Plant, Cell & Environment* 34:1020-1030

Ramos SJ, Yuan Y, Faquin V, Guilherme LRG, Li L (2011) Evaluation of genotypic variation of broccoli (*Brassica oleracea* var. *italica*) in response to selenium treatment. *Journal of Agriculture and Food Chemistry* 59:3657-3665

Ramos SJ, Rutzke MA, Hayes RJ, Faquin V, Guilherme LRG, Li L (2011) Selenium accumulation in lettuce germplasm. *Planta* 233:649-660

Zhou X, Sun TH, Wang N, Ling HQ, Lu S, Li L (2011) The cauliflower *Orange* gene enhances petiole elongation by suppressing expression of *eukaryotic release factor 1*. *New Phytologist* 190: 89-100

Chiu LW, Zhou X, Burke S, Wu X, Prior RL, and Li L (2010) The purple cauliflower arises from activation of a MYB transcription factor. *Plant Physiology* 154: 1470-1480

Zhou X, Cooke P, Li L (2010) Eukaryotic release factor 1-2 affects *Arabidopsis* responses to glucose and phytohormones during germination and early seedling development. *Journal of Experimental Botany* 61:357-367

Zhou X, Li L (2010) Think outside the box: Selenium volatilization altered by a broccoli gene in the ubiquinone biosynthetic pathway. *Plant Signaling & Behavior* 5:74-75

Van Eck J, Zhou X, Lu S, Li L (2010) Modulation of carotenoid accumulation in transgenic potato by inducing chromoplast formation with enhanced sink strength. *Methods in Molecular Biology* 643: 77-93

Yuan Y, Chiu LW, Li L (2009) Transcriptional regulation of anthocyanin biosynthesis in red cabbage. *Planta* 230:1141-1153

Zhou X, Yuan Y, Yang Y, Rutzke M, Thannhauser TW, Kochian LV, Li L (2009) Involvement of a broccoli COQ5 methyltransferase in the production of volatile selenium compounds. *Plant Physiology* 151:528-540.

Salas-Fernandez MG, Hamblin M, Li L, Rooney WL, Tuinstra MR, Kresovich S (2008) Quantitative trait loci analysis of endosperm color and carotenoid content in sorghum grain. *Crop Science* 48:1732-1743.

Lu S, Li L (2008) Carotenoid metabolism: the biosynthesis, regulation, and beyond. *Journal of Integrative Plant Biology* 50:778-785.

- Zhou X, Van Eck J, Li L (2008) Use of the cauliflower *Or* gene to improve crop nutritional quality. *Biotechnology Annual Review*, Volume 14. p171-190.
- Lopez AB, Yang Y, Thannhauser TW, Li L (2008) Phytoene desaturase is present in a large protein complex in plastid membrane. *Physiologia Plantarum* 133:190-198.
- Zhou X, Li L (2008) Enhancing plant carotenoids via manipulation of sink strength. *Information Systems for Biotechnology*, February 2008: 5-7
- Lopez, AB, Van Eck J, Conlin BJ, Paolillo DJ, O'Neill J, Li L (2008) Effect of the cauliflower *Or* transgene on carotenoid accumulation and chromoplast formation in transgenic potato tubers. *Journal of Experimental Botany* 59:213-223.
- Li L, Van Eck J (2007) Perspectives: metabolic engineering of carotenoid accumulation by creating a metabolic sink. *Transgenic Research* 16:581-585.
- Yang Y, Thannhauser TW, Li L, Zhang S (2007) Development of an integrated approach for evaluation of 2-D gel image analysis: impact of multiple proteins in single spots on comparative proteomics in conventional 2-D gel/MALDI workflow. *Electrophoresis* 28:2080-2094.
- Lyi SM, Zhou X, Kochian LV, and Li L (2007) Biochemical and molecular characterization of the homocysteine *S*-methyltransferase from broccoli (*Brassica oleracea* var. *italica*). *Phytochemistry* 68: 1112-1119
- Li L, Van Eck J (2006) Use of the *Or* gene to improve carotenoid content in staple crops. Patent Docket No. 0186.03, Serial No. 11/296,025
- Lu S, Van Eck J, Zhou X, Lopez AB, O'Halloran DM, Cosman KM, Conlin B, Paolillo DJ, Garvin DF, Vrebalov J, Kochian L, V, Kupper H, Earle ED, Cao J, and Li L (2006) The cauliflower *Or* gene encodes a DnaJ cysteine-rich domain-containing protein that mediates high-levels of  $\beta$ -carotene accumulation. *The Plant Cell* 18: 3594-3605. (Research Highlights in *Nature Biotechnology* (2007) 25:195 Golden Cauliflower)
- Li L, Lu S, Cosman KM, Earle ED, Garvin DF, and O'Neill J (2006)  $\beta$ -carotene accumulation induced by the cauliflower *Or* gene is not due to an increased capacity of biosynthesis. *Phytochemistry* 67: 1177-1184.
- Li L, Lu S, Garvin DF, Vrebalov J, O'Halloran DM (2005) *Or* gene and its use in manipulating carotenoid content and composition in plants and other organisms. Patent Docket No. 0021.07, Serial No. 11/639,064 Patent No. 8,071,841
- Lyi SM, Heller LI, Rutzke M, Welch RM, Kochian LV, Li L (2005) Molecular and biochemical characterization of the selenocysteine *Se*-methyltransferase gene and *Se*-

methylselenocysteine synthesis in broccoli. *Plant Physiology* 138:409-420  
(Cited by the Journal as "Paper of the Issue")

Magalhaes JV, Garvin DF, Wang Y, Sorrells ME, Klein PE, Schaffert RE, Li L, Kochian LV (2004) Comparative mapping of a major aluminum tolerance gene in sorghum and other species in the Poaceae. *Genetics* 167:1905-1914

Li L, Lu S, O'Halloran DM, Garvin DF, Vrebalov J (2003) High-resolution genetic and physical mapping of the cauliflower high-beta-carotene gene *Or* (*Orange*). *Molecular Genetics and Genomics* 270:132-138

Li L, Thipyapong P, Breeden DC, Steffens JC (2003) Overexpression of a bacterial branched-chain alpha-keto acid dehydrogenase complex in *Arabidopsis* results in accumulation of branched-chain acyl-CoAs and alteration of free amino acid composition in seeds. *Plant Science* 165:1213-1219

Li L, Garvin DF (2003) Molecular mapping of *Or*, a gene inducing  $\beta$ -carotene accumulation in cauliflower (*Brassica oleracea* var. *botrytis*). *Genome* 46:588-594

Li L, Steffens JC (2002) Overexpression of polyphenol oxidase in transgenic tomato plants results in enhanced bacterial disease resistance. *Planta* 215:239-247

Li L, Paolillo DJ, Parthasarathy MV, DiMuzio EM, Garvin DF (2001) A novel gene mutation that confers abnormal patterns of  $\beta$ -carotene accumulation in cauliflower (*Brassica oleracea* var. *botrytis*). *The Plant Journal* 26:59-67

Xu YL, Li L, Gage DA, Zeevaart JA (1999) Feedback regulation of GA5 expression and metabolic engineering of gibberellin levels in *Arabidopsis*. *The Plant Cell* 11:927-935

Wu K, Li L, Gage DA, Zeevaart JAD (1996) Molecular cloning and photoperiod-regulated expression of gibberellin 20-oxidase from the long-day plant spinach. *Plant Physiology* 110:547-554

Li L, Li BL, Hock M, Wang E, Folk WR (1995) Sequences flanking the pentanucleotide T-antigen binding sites in the polyomavirus core origin help determine selectivity of DNA replication. *Journal of Virology* 69:7570-7578

Xu YL, Li L, Wu K, Peeters AJM, Gage DA, Zeevaart JAD (1995) The GA5 locus of *Arabidopsis thaliana* encodes a multifunctional gibberellin 20-oxidase: Molecular cloning and functional expression. *Proceedings of the National Academy of Sciences of the United States of America* 92:6640-6644

Li L, Preiss J (1992) Characterization of ADPglucose pyrophosphorylase from a starch-deficient mutant of *Arabidopsis thaliana* L. *Carbohydrate Research* 227:227-239

Preiss J, Ball K, Smith WB, Iglesias A, Kakefuda G, Li L (1991) Starch biosynthesis and its regulation. *Biochemical Society Transactions* 19:539-547

Preiss J, Ball K, Hutney J, Smith-White B, Li L, Okita TW (1991) Regulatory mechanisms involved in the biosynthesis of starch. *Pure & Applied Chemistry* 63:535-544

Li L, Ross JD (1990) Starch synthesis during dormancy breakage in oilseed of *Corylus-avellana*. L. *Annals of Botany* 66:507-512

Li L, Ross JD (1990) Lipid mobilization during dormancy breakage in oilseed of *Corylus-avellana* L. *Annals of Botany* 66:501-506

Li L, Ross JD (1988) Fructose 1 6-bisphosphatase in seeds of *Corylus-avellana* L. *Phytochemistry* 27:1977-1980