

CURRICULUM VITAE

Laszlo G. Kovacs

Department of Biology, Missouri State University

<http://mtngrv.missouristate.edu/cgb/190.htm>

EDUCATION

Ph.D. - University of Missouri-Columbia	1992
University Diploma - University of Agricultural Sciences, Gödöllő, Hungary	1986

PROFESSIONAL EXPERIENCE

Professor Missouri State University, Departments of Agriculture & Biology	2007 – Present
Co-Director Center for Grapevine Biotechnology, Missouri State University	2006 - 2009
Assistant and Associate Research Professor Southwest Missouri State University, Department of Fruit Science	1997 –2007
Post-Doctoral Research Associate University of Chicago, Department of Medicine	1995 – 1997
Post-Doctoral Research Associate University of Missouri, Department of Plant Pathology	1993 - 1995
Graduate Research Assistant University of Missouri, Department of Plant Pathology	1988 - 1992

AWARDS AND HONORS

Membership in Interdisciplinary Plant Group University of Missouri-Columbia	2009
Adjunct Associate Professor - Ph.D. Faculty Status University of Missouri-Columbia	2005
Outstanding Thesis Advisor Award Southwest Missouri State University, Graduate College	2004
Excellence in Research Award Southwest Missouri State University, College of Natural and Applied Sciences	2003

PUBLICATIONS IN SCIENTIFIC JOURNALS WHILE AT MISSOURI STATE (PEER-REVIEWED)

1. Coleman, C., D. Copetti, G., Cipriani, S. Hoffmann, P. Kozma, **L.G. Kovács**, M. Michele Morgante, R. Testolin, and G. Di Gaspero. (2009). The powdery mildew resistance gene *REN1* in two Central Asian grapevines co-segregates with an NBS-LRR gene cluster in two Central Asian Grapes *BMC Genetics* 10:89. (<http://www.biomedcentral.com/1471-2156/10/89>).
2. Fekete, C., R.W. Fung, Z. Szabo, W. Qiu, L. Chang, D.P. Schachtman, and **L.G. Kovacs**. (2009). Up-regulated transcripts in a compatible powdery mildew-grapevine interaction. *Plant Physiology and Biochemistry*, 47:732-738.
3. Zhang, J., H. Ma, S. Chen, S., M. Ji, A. Perl, **L.G. Kovacs**, and S. Chen. (2009). Stress response proteins' differential expression in embryogenic and non-embryogenic callus of *Vitis vinifera* L. cv. Cabernet Sauvignon – a proteomic approach. *Plant Science* 177:103-113.
4. Olah, R., A. Zok, A. Pedryc, S. Howard and **L.G. Kovacs**. (2009). Somatic embryogenesis in a broad spectrum of grapevine genotypes. *Scientia Horticulturae*, 120: 134–137.
5. Galbacs, Z., S. Molnar, G. Halasz, S. Hoffmann, E. Kiss, P. Kozma, **L.G. Kovacs**, A. Veres, Z. Galli, A Szoke, and L. Heszky. (2009). Identification of grapevine cultivars using DNA barcodes. *Vitis* 48:17-24.
6. Winterhagen, P., W. Qiu, S. Howard, and **L.G. Kovács**. (2008). Transcriptional up-regulation of grapevine MLO genes in response to powdery mildew infection. *American Journal of Enology and Viticulture* 59:159-168.
7. Hoffmann, S., G. Di Gaspero, **L.G. Kovacs**, S. Howard, E. Kiss, Z. Galbacs, and R. Testolin. (2008). Resistance to *Erysiphe necator* in the grapevine 'Kishmish vatkana' is controlled by a single locus through restriction of hyphal growth. *Theor. Appl. Genet.* 116:427-438.
8. Fung, R.W.M., M. Gonzalo, C. Fekete, **L.G. Kovács**, E. Marsh, L. McIntyre, D.P. Schachtman, and W. Qiu. (2008). Powdery mildew induces defense-oriented restructuring of the transcriptome in a susceptible but not in a resistant grapevine. *Plant Physiology* 146:236-249.
9. Fung, R.W.M., W. Qiu, Y. Su, D.P. Schachtman, K. Huppert, C. Fekete and **L.G. Kovács**. (2007). Gene expression variation in grapevine species *Vitis vinifera* L. and *Vitis aestivalis* Michx. *Genetic Resources and Crop Evolution* 54:1541-1553.
10. Qiu, W., S. Fekete, T. Todd, and **L.G. Kovacs**. (2004). Facilitation of microshoot tip propagation of *Vitis aestivalis* var. Norton by combined application of an antioxidant and cytokinins. *American Journal of Enology and Viticulture* 55:112-115.
11. **Kovacs, L.G.**, P.A. Byers, M.L. Kaps, and J. Saenz. (2003). Dormancy, cold hardiness, and spring hazard in *Vitis amurensis* hybrid grapevines under continental climatic conditions. *American Journal of Enology and Viticulture* 54:8-14.
12. Hou, H., S. Fekete, and **L.G. Kovacs**. (2002). New members of the stilbene synthase gene family from the *Vitis aestivalis*-derived variety Norton. *Am. J. Enol. Vitic.* 53:289-293.
13. **Kovacs, L.G.** and G. Du, and P. Ding. (2002). Tissue moisture loss during sample preparation lowers exotherm temperatures in dormant grapevine buds. *HortScience*. 37:701-704.
14. **Kovacs, L.G.**, H. Hanami, M. Fortenberry, and M.L. Kaps. (2001). Latent infection by leafroll agent GLRaV-3 is linked to lower fruit quality in French-American hybrid grapevines Vidal blanc and St. Vincent. *Am. J. Enol. Vitic.* 52:254-259.
15. **Kovacs, L.G.** (1999). Of Genes Plants and People: Public Understanding of Plant Biotechnology and Its Safety. *Journal of Public Affairs* 3:51-61.

SCIENTIFIC PUBLICATIONS - NON-PEER-REVIEWED,

16. Qiu, W., **L.G. Kovacs**, and H. Hou. (2005). Defense-related candidate genes in *Vitis* species. *Acta Horticulturae* 689:447-457.

17. **Kovacs, L.G.**, S. Fekete, H. Hou, and E. Szegedi. (2003). Silencing the expression of an *Agrobacterium vitis* oncogene in a model plant. *Acta Horticulturae* 603:519-526.
18. Burr, T., **L.G. Kovacs**, S. Sule, and E. Szegedi. (2003). Breeding for crown gall resistance: Traditional and molecular approaches. *Acta Horticulturae* 603:512-518.

EDITED WORKS AND BOOK CHAPTERS

1. **Kovacs, L.G.** and W. Qiu (eds.) *Proceedings of the International Grape Genomics Symposium*. July 12-14, 2005 St. Louis, Missouri. Missouri State University, Springfield, Missouri, 2005.
2. **Kovacs, L.G.** and J. Avery. Grapevine Propagation. In: *Temperate Zone Viticulture*. Editor: Andrew Reynolds. Springer. New York. (under editor's review).

INVITED SEMINAR PRESENTATIONS –PAST FIVE YEARS

1. **Kovacs, L.G.** (2009). Powdery Mildew Resistance Cosegregates with Different NS-LRR Gene Cluster in American and Asian Grapevines. Program Summary Presentation at the University Missouri-Columbia Plant Sciences Division Seminar Series. Sept 30. 2009.
2. **Kovacs, L.G.** (2006). American Grapevines: Genetic Resources for sustainable Viticulture. Invited presentation at a MU-Columbia Plant Sciences Division Seminar. May 8, 2006.
3. **Kovacs, L.G.** (2006). East Asian and North American genetic Resources for Grapevine Improvement. International Symposium of genetically Improving Grapevine for Stress Tolerance. Ninxia Forestry Institute, Yinchuan, P.R. China. August 13-15, 2006.
4. **Kovacs, L.G.** (2006) *Agrobacterium*-induced Plant Defense Response. Can Transformation Efficiency Be Improved? Sino-Israel-US-EU Grape Workshop. August 10-11, 2006.

PRESENTATIONS AT SCIENTIFIC CONFERENCES –PAST FIVE YEARS

- ⁵ Ali, M.B., S. Howard, S. Chen, **L.G. Kovacs**, and W. Qiu. (2009). Profiles of Myb transcription factors, structural genes, and anthocyanins revealed a unique pattern of flavonoid biosynthesis in the berry skin of *Vitis aestivalis* 'Norton' NSF Grapevine Research Coordination Network Conference. Tahoe City, California, May 15 -17.
6. Coleman, C., G. Di Gaspero, S. Hoffmann, P. Kozma, **L.G. Kovács**, M. Morgante, R. Testolin (2009). Powdery Mildew Resistance In *Vitis vinifera* From Central Asia. Plant and Animal Genome Conference. San Diego, CA, January 10-14, 2009.
7. Winterhagen, P., Z. Toth, A. Higgins, Z. Szabo, E. Kiss, N. Li, S. Howard, Y. SU, W. Qiu, and **L.G. Kovacs**. (2008). Powdery mildew- and salicylic acid-induced gene regulation in a susceptible grapevine. Eighth International Symposium on Grapevine Physiology and Biotechnology. Adelaide, Australia, November 23-28, 2008.
8. Winterhagen, P., C. Dennis, S. Howard, W. Qiu, and **L.G. Kovacs**. (2008). Identification and characterization of *MLO*-like genes in the grapevine *Vitis vinifera* 'Cabernet Sauvignon'. International Animal and Plant Genome Conference, San Diego, California, January, 2008.
9. Szabó, Z. , G. Gyulai, **L.G. Kovacs**, Z. Toth, R. Lagler, A. Bittsánszky, L. Kocsis, and L. Heszky. (2007). Ancient DNA Analysis and Morphology of Grape Seeds from Antiquity and the Middle Ages Excavated in Hungary. Abstract P40020 Plant Biology and Botany 2007 Joint Congress, Chicago. July 7-11, 2007.
10. Szabó, Z. , P. Winterhagen, N. Li, **L.G. Kovacs** and W. Qiu. (2007). Powdery mildew-induced changes in salicylic acid levels and related gene expression in grapevine. Abstract P54007. Plant Biology and Botany Joint Congress, Chicago. July 7-11, 2007.
11. Gyulai, F., G. Gyulai, R. Lagler, Z. Toth, Z. Szabo, **L.G. Kovacs**, and L. Heszky. (2007). Morphological and Molecular Analysis of Ancient Grapes (*Vitis vinifera*) Excavated in

- Hungary. 14th International Working Group for Paleoethnobotany. Krakow, Poland. June 17-23, 2007.
12. Schachtman, D. Fung, R. C. Fekete, Y. He, W. Qiu, M. Gonzalo, L. McIntyre, K. Huppert, and **L.G. Kovacs** (2006). Comparative Analysis of the Powdery Mildew-Induced Transcriptome in a Resistant and a Susceptible Grapevine Species Using the Vitis GeneChip. 57th Annual Meeting of the American Society for Enology and Viticulture. 27–30 June 2006, Sacramento, California.
 13. **Kovacs, L.G.** (2006). American Grapevines: Genetic Resources for sustainable Viticulture. University Missouri-Columbia Plant Sciences Division Seminar Series. May 8, 2006.
 14. Qiu, W., D. Schachtman, Fung, R. C. Fekete, Y. He, M. Gonzalo, L. McIntyre, K. Huppert, and **L.G. Kovacs**. (2006). Comparative Analysis of the Powdery Mildew-Induced Transcriptome in a Resistant and a Susceptible Grapevine Species Using the Vitis GeneChip. 9th International Conference on Grape Genetics and Breeding, July 2-6, 2006. Udine, Italy
 15. Fung, R., W. Qiu, and **L.G. Kovacs**. (2005). Characterization of two class III ethylene responsive factors (ERF) genes from the disease-resistant grapevine *Vitis aestivalis* ‘Norton’. International Grape Genomics Symposium. July 12-14. St. Louis, Missouri.
 16. **Kovacs, L.G.**, W. Qiu, Y. Su, and C. Fekete (2005). Applicability of the Vitis GeneChip[®] for Transcriptome Analysis in Heterologous Grapevine Species. International Grape Genomics Symposium, July 12-14. St. Louis, Missouri.
 17. Jarvis, E., W. Qiu, **L.G. Kovacs**, and J. C. Polacco. (2005). Pathogen response in the genus *Vitis*. International Grape Genomics Symposium, July 12-14. St. Louis, Missouri.

RESEARCH GRANTS RECEIVED – PAST FIVE YEARS

1. Gassmann, W. Qiu, **L.G. Kovacs**, and J. Schoelz. Vitis Gene Discovery Program. Agency: USDA-CSREES. Received \$206,968. October 2009 – September 2010.
2. Gassmann, W. Qiu, **L.G. Kovacs**, and D. Schachtman, and P. Durham. Vitis Gene Discovery Program. Agency: USDA-CSREES. Received \$233,976. October 2008 – September 2009.
3. Kiss E., **L.G. Kovacs**, and Z. Szabo. Powdery Mildew-Induced Gene Expression in Plants. Hungarian Academy of Sciences International Cooperation Proposal. Szent Istvan University and Missouri State University 26,860,000 Ft (\$158,400), April 1, 2009 to March 31, 2011.
4. **Kovacs, L.G.**, W. Qiu, R.N. Biagioni, P. Durham, D. Schachtman and O. Yu: Grape Polyphenols: Potential for New Commercial Products and Enhanced Plant Health. Agency: Missouri Life Science Research Board Trust Fund. Received: \$897,955. January 2008 to December 2009.
5. Kaps, M., **L.G. Kovacs**, W. Qiu, J. Avery, R. Arbindra. Importation of new varieties from international grape breeding programs to enhance the Missouri Grape and Wine industry. Missouri State University Futures Proposal. \$95,000 for 2008.
6. Polacco, J., W. Qiu, **L.G. Kovacs**, D. Schachtman and W. Gassmann: Vitis Gene Discovery Program. Agency: USDA-CSREES. \$334,972. July, 2006 - June, 2008.
7. Polacco J., Qiu, W., **L.G. Kovacs**, and D. Schachtman: Vitis Gene Discovery Program. Agency: USDA-CSREES. \$137,297. July, 2005 - June, 2007.
8. **Kovacs, L.G.** and J. Avery: Biological Control of Crown Gall in Grapevine. Agency: USDA IR-4 Biopesticide Program. \$9,500. July, 2005 to December, 2006.
9. Polacco J., W. Qiu, **L.G. Kovacs** and D. Schachtman: Vitis Gene Discovery Program. Agency: USDA-CSREES. Received \$170,000 for July 1, 2004 – June 30, 2006.

10. **Kovacs, L.G.** and G. Gyulai: Fulbright grant to support visiting graduate student Zoltan Szabo's (Department of genetics and Plant Breeding, Szent Istvan University, Godollo, Hungary) to work for six months in my laboratory. \$9,500. October 2006 to March 2007.
11. Allen, A., D. Johnson, K. Striegler, D. Waldstein, and **L.G. Kovacs**. Demonstration and verification of best management practices for winegrape production in the Ozarks Mountain Region. Agency: USDA Viticulture Consortium. \$44,000. July, 2004 to June, 2005.
12. Striegler, K., M. Dharmadhikari, W. Qiu, **L.G. Kovacs**, and S. Howard. Importation and Evaluation of Eastern European hybrid grapes for adaptability to eastern and mid-western conditions. Agency: USDA Viticulture Consortium. \$22,354. July, 2004 – June 2005.
13. Qiu, W., J. Avery, and **L.G. Kovacs**. Importation and subsequent certification of grapevine cultivars for the Missouri Grape and Wine Industry. Agency: Missouri Department of Agriculture. \$12,450. July, 2003 – June, 2004.

THESES ADVISED (AS MAJOR ADVISOR)

1. Expression of the TA-*iaaM* gene of *Agrobacterium vitis* in *Petunia hybrida*. Lilly Boppuri, M.S. in Plant Science. 1998.
2. Silencing of an *Agrobacterium* oncogene in a *Petunia hybrida* model system. Linqun Han, M.S. in Plant Science. 1999.
3. Agronomic Performance of Leafroll Virus-Infected French-American Hybrid Grapevines Hideaki Hanami. M.S. in Plant Science. 1999.
4. Expression of transcription factor genes in grapevine. Turlapati Phanikant Venkata, M.S. in Plant Science. 2004.
5. Biological Control of crown gall in grapevine. Le Chan, M.S. in Plant Science. 2006.
6. Mapping the powdery mildew resistance locus *RENI* in *Vitis vinifera*. Courtney Coleman, M.S. in Natural and Applied Sciences. 2009.
7. Regulation of a fungal pathogen-responsive NAC-type transcription factor in grapevine. Zsofia Toth, M.S. in Plant Science (on-going project).

COURSES TAUGHT – PAST FIVE YEARS

1. BIO 235 – Principles of Genetics
2. AGF 631 – Plant Genetic Engineering
3. AGF 630 – Advanced Topics in Plant Science
4. AGR 289 – Internship in Plant Science
5. AGR 108 – Agriculture Management

SERVICE TO THE SCIENTIFIC COMMUNITY – PAST FIVE YEARS

1. Head of Organizing Committee for the International Grape Genomics Symposium, 2005
2. Reviewer of proposal for granting agencies:
 - a. USDA Viticulture Consortium-East, 2001 - 2006
 - b. NSF Plant Genome Program, 2005 - 2006
 - c. USDA NRI - Developmental Processes of Crop Plants Program, 2005
 - d. USDA Small Business Research Initiative Grant Program, 2005
3. *Ad hoc* reviewer of papers for scientific journals:
 - a. *Plant Physiology and Biochemistry*, 2008
 - b. *Trends in Plant Science*, 2006
 - c. *Journal of Agricultural and Food Chemistry*, 2004
 - d. *Acta Horticulturae*, 2004