

## CURRICULUM VITAE

### AMNON LERS

#### University Education and Additional Training

- 1980-1982 B.Sc. in Biology at the Hebrew University in Jerusalem.
- 1983-1985 M.Sc. in molecular genetics at the Biochemistry Dept. at the Weizmann Institute of Science.  
Title of thesis: Promoter mutations that allow constitutive expression of the nitrogen fixation *nifHDKY* operon.  
Supervisor: Prof. Ada Zamir.
- 1985-1990 Ph.D. in molecular genetics at the Biochemistry Dept. at the Weizmann Institute of Science.  
Title of thesis: Induction of massive  $\beta$ -carotene accumulation in the alga *Dunaliella bardawil*: from a cell to a single gene.  
Supervisor: Prof. Ada Zamir.
- 1990-1993 Postdoctoral position at the Zoology and Botany Depts at Duke University with Profs. John E. Boynton and Nicholas W. Gillham.  
Research subject: Molecular studies on structure, function and expression of the photosystem II D1 protein in the alga *Chlamydomonas reinhardtii* and its role in photoinhibition.

#### Positions Held and Academic Status

- 1993 (April) to date Research Scientist at the Agricultural Research Organization (ARO), The Volcani Center, in the Dept. of Postharvest Science of Fresh Produce.
- 1998 Promoted to Senior Scientist (grade B).
- 2003 Guest lecturer in the Hebrew University, Faculty of Agriculture (M.Sc. /Ph.D. level course on Postharvest Biology).
- 2006 Promoted to grade A.
- 2007-2010 Head of the Dept. of Postharvest Science of Fresh Produce.

#### Publications

- Lers, A., Bitoun, R. and Zamir, A. (1986) Transcriptional analysis of promoter mutations in the *Klebsiella pneumoniae nifHDKY* operon. **J. Bacteriol.** 165: 175-180.
- Zilberstein, A., Koch, T., Altschuler, Y., Lers, A. and Zamir, A. (1987) Characterization of DNase(s) activity in Tobacco leaf extracts. **Plant Sci.** 52: 57-65.
- Ben-Amotz, A., Lers, A. and Avron, M. (1988) Stereoisomers of  $\beta$ -carotene and phytoene in the alga *Dunaliella bardawil*. **Plant Physiol.** 86: 1286-1291.
- Sadka, A., Lers, A., Zamir, A. and Avron, M. (1988) A critical examination of the role of *de-novo* protein synthesis in the osmotic adaptation of the halotolerant alga *Dunaliella*. **FEBS Lett.** 244: 93-98.

- Lers, A., Bitoun, R. and Zamir, A. (1989) Outward reading promoters exist on both ends of the transposable element *gamma-delta*. ***Mol. Gen. Gent.*** 216: 138-143.
- Lers, A., Biener, Y. and Zamir, A. (1990) Photoinduction of massive  $\beta$ -carotene accumulation by the alga *Dunaliella bardawil*: kinetics and dependence on gene activation. ***Plant Physiol.*** 93: 389-395.
- Lers, A., Levy, H. and Zamir, A. (1991) Co-regulation of gene homologous to early light -induced genes in higher plants and  $\beta$ -carotene biosynthesis in the alga *Dunaliella bardawil*. ***J. Biol. Chem.*** 266: 13698-13705.
- Lers, A., Heifetz, P. B., Boynton, J. E., Gillham, N. W. and Osmond, C. B. (1992) The carboxyl-terminal extension of the D1 protein of photosystem II is not required for optimal photosynthetic performance under CO<sub>2</sub>- and Light-saturated growth conditions. ***J. Biol. Chem.*** 267: 17494-17497.
- Shapira, M., Lers, A. Osmond, C.B., Gillham, N. W. and Boynton, J. E. (1996) Regulation of chloroplast gene expression in *Chlamydomonas reinhardtii*: transfer of low light grown cells to high light suppresses synthesis of the Rubisco LSU protein and enhances synthesis of the photosystem II D1 reaction center protein. ***Plant Mol. Biol.*** 33: 1001-1011.
- Heifetz, P. B., Lers, A., Turpin, D. H., Gillham, N. W., Boynton, J. E. and Osmond, C. B. (1997) *dr* and *spr/sr* mutations of *Chlamydomonas reinhardtii* affecting D1 protein function and synthesis define two independent steps leading to chronic photoinhibition and confer differential fitness. ***Plant Cell and Environ.*** 20: 1145-1157.
- Lers, A., Jiang, W., Lomaniec, E. and Aharoni, N. (1998) Gibberellic acid and CO<sub>2</sub> additive effect in retarding postharvest senescence of parsley. ***J. Food Sci.*** 63: 66-68.
- Lers, A., Khalchitski, A., Lomaniec, E., Burd, S. and Green, P. J. (1998) Senescence-induced RNases in tomato. ***Plant Mol. Biol.*** 36: 439-449.
- Lers, A., Burd, S., Lomaniec, E., Droby, S. and Chalutz, E. (1998) The expression of grapefruit gene encoding an isoflavone reductase-like protein is induced in response to UV irradiation. ***Plant Mol. Biol.*** 36: 847-856.
- Lers, A., Burd, S., Sonogo, L., Khalchitski, A. and Lomaniec, E. (1998) Nucleotide sequence of a full-length C14 cDNA clone (accession No. AJ003137) encoding for cysteine protease CYP1 from tomato. ***Plant Physiol.*** 116: 1193.
- Lers, A., Jiang, W., Lomaniec, E. and Aharoni, N. (1998) Proteins functionally and immunogenically related to pathogenesis-related proteins are induced during parsley leaf senescence. ***Physiol. Plant.*** 103: 497-502.
- Jiang, W., Lers, A., Lomaniec, E. and Aharoni, N. (1999) Senescence-related serine protease in parsley. ***Phytochemistry*** 50: 377-382.
- Porat, R., Lers, A., Dori, S., Cohen, L., Weiss, B., Daus, A., Wilson, C. L. and Droby, S. (1999) Induction of chitinase and  $\beta$ -1,3-endoglucanase proteins by UV irradiation and wounding in grapefruit peel tissue. ***Phytoparasitica*** 27: 233-238.
- Pérez-Amador, M. A., Abler, M. L., De Rocher, E. J, Thompson, D. M., van Hoof, A., LeBrasseur, N., Lers, A. and Green, P. J. (1999) Identification of *BFN1*, a bifunctional nuclease induced during leaf and stem senescence in *Arabidopsis thaliana*. ***Plant Physiol.*** 122: 169-179.
- Zhou, H., Lurie, S., Lers, A., Khalchitski, A., Sonogo, L. and Ben Arie, R. (2000) Delayed storage and controlled atmosphere storage of nectarines: two strategies to prevent woolliness. ***Postharvest Biol. Technol.*** 18: 133-141.

- Zhou, H., Sonogo, L., Khalchitski, A., Ben Arie, R., Lers, A. and Lurie, S. (2000) Cell wall enzymes and cell wall changes in 'Flavortop' nectarines: mRNA abundance, enzyme activity, and changes in pectic neutral polymers during ripening and in woolly fruit. *J. Amer. Soc. Hort. Sci.* 125: 630-637.
- Lers, A., Lomaniec, E., Burd, S. and Khalchitski, A. (2001) The characterization of LeNUC1, a nuclease associated with leaf senescence of tomato. *Physiol. Plant.* 112: 176-182.
- Zhou, H., Lurie, S., Ben-Arie, R., Dong, L., Burd, S., Weksler, A. and Lers, A. (2001) Intermittent warming of peaches reduces chilling injury by enhancing ethylene production and enzymes mediated by ethylene. *J. Hort. Sci. Biotechnol.* 76: 620-628.
- Dong, L., Zhou, H., Sonogo, L., Lers, A. and Lurie, S. (2001) Ethylene involvement in the cold storage disorder of Flavortop nectarine. *Postharvest Biol. Technol.* 23: 105-115.
- Dong, L., Zhou, H., Sonogo, L., Lers, A. and Lurie, S. (2001) Ripening of Red Rosa plums: effect of ethylene and 1-methylcyclopropene. *Aust. J. Plant Physiol.* 28: 1039-1045.
- Canetti, L., Lomaniec, E., Elkind, Y. and Lers, A. (2002) Nuclease activities associated with dark-induced and natural leaf senescence in parsley. *Plant Science* 163: 873 - 880
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- Lurie, S., Zhou, H., Lers, A., Sonogo, L., Alexandrov, S. and Shomer, I. (2003) Study of pectin esterase and changes in pectin methylation during normal and abnormal peach ripening. *Physiol. Plant.* 119: 287-294.
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- Lurie, S., Lers, A., Shacham, Z., Sonogo, L., Burd, S. and Whitaker B. (2005) Expression of  $\alpha$ -Farnesene Synthase AFS1 and 3-Hydroxy-3-methylglutaryl-coenzyme A Reductase HMG2 and HMG3 in Relation to  $\alpha$ -Farnesene and Conjugated Trienols in Granny Smith Apples Heat or 1-MCP Treated to Prevent Superficial Scald. *J. Amer. Soc. Hort. Sci.* 130: 232-236.
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- Lers, A., (2007) Physiological and molecular aspects of postharvest leaf senescence. Invited review for the electronic on-line review journal (Raghavan E. ed): **Stewart Postharvest Review.** 3: 1-6.
- Lers, A., (2007) Environmental regulation of leaf senescence. In the Annual Plant Reviews series, volume on: **Senescence Processes in Plants** (Gan S. ed), Blackwell Publishing, Oxford. pp 108-144.
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- Sharabi-Schwager, M., **Lers, A.**, Samach, A. and Porat, R. (2009) Relationship between plant stress tolerance, senescence and life span. Invited review for the electronic on-line review journal (Raghavan E. ed): **Stewart Postharvest Review**. 5: 2.
- Sharabi-Schwager, M., **Lers, A.**, Samach, A., Guy, C.L. and Porat R. (2010) Overexpression of the *CBF2* transcriptional activator in Arabidopsis delays leaf senescence and extends plant longevity. *J. Exp. Bot.* 61: 261 - 273.
- Aharoni, N., Kenigsbuch, D., Chalupowicz, D., Faura-Mlinski, M., Aharon, Z., Maurer, D., Ovadia A. and **Lers, A.** (2010) Reducing chilling injury and decay in stored sweet basil. *Israel J. Plant Sci.* 58: 167–18.
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- Meir, S., Philosoph-Hadas, S., Sundaresan K.S, S., Selvaraj, V., Burd, S., Ophir, R., Kochanek, B., Reid, M. S., Jiang, C.-Z. and **Lers, A.** (2011) Identification of defense-related genes newly-associated with tomato flower abscission. *Plant Signaling & Behavior* 6: 590-593.
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- Lers, A.** (2011) Potential application of biotechnology to maintain fresh produce postharvest quality and reduce losses during storage. Invited review chapter for the book *Plant Biotechnology and Agriculture: Prospects for the 21 st Century* (Altman, A. and Hasegawa, P. M., eds.), Elsevier
- Bar-Dror, T., Dermastia, M., Kladnik, A., Tusek Znidaric, M., Pompe Novak, M., Meir, S., Burd, S., Philosoph-Hadas, S., Ori, N., Sonogo, L., Dickman, M. B. and **Lers, A.** (2011) Programmed Cell Death Occurs Asymmetrically during Abscission in Tomato. *The Plant Cell* in press