**Eyal Fridman Jan 2015**

1. **Personal**

Dr. Eyal Fridman

Plant Sciences Institute

Room 103

E-mail: fridmane@agri.gov.il

Tel: +972-3-9683901; Mobile: +972-54-6554719

URL: under construction

1. **University Education and Additional Training**

|  |  |
| --- | --- |
| **Dates** | **Description** |
| 1993 – 1996 | B.Sc. in Animal Sciences, Faculty of Agriculture, The Hebrew University of Jerusalem |
| 1996 – 2002 | Ph.D. in Genetics, Department of Genetics and Field Crops, Faculty of Agriculture, The Hebrew University of JerusalemTitle of thesis: Mapping, cloning and investigation of a quantitative trait locus underlying sugar yield content in tomatoSupervision by: Prof. Dani Zamir |
| 2002 – 2005 | Postdoctoral position at University of Michigan With Prof. Eran Pichersky; Secondary metabolism |

1. **Positions Held and Academic Status**

|  |  |
| --- | --- |
| **Dates** | **Description** |
| 2005 to 2014 | Senior lecturer at the RH Smith Institute for Plant Sciences and Genetics, Faculty of Agriculture, The Hebrew University of Jerusalem, Rehovot |
| 2014 to date | Senior researcher at Field Crops and Vegetable Science, Plant Sciences Institute, Agricultural Research Organization (ARO), The Volcani Center, Bet-Dagan |

1. **Articles in Reviewed Journals**

**1.**  Fulton, T.M., Grandillo, S., Beck-Bunn, T., Fridman, E., Frampton, A., Lopez, J., Petiard, V., Uhlig, J. , Zamir, D. and Tanksley, S.D. (2000) Advanced backcross analysis of *Lycopersicon esculentum* x *L. parviflorum* cross. Theor. Appl. Genet. 100: 1025-1042.

2. Fridman, E., Pleban, T. and Zamir, D. (2000) A recombination hotspot delimits a wild species QTL for tomato sugar content to 484-bp within an invertase gene. Proc Natl Acad Sci USA 97: 4718-4723.

3. Monforte, A.J., Fridman, E., Zamir, D. and Tanksley, S.D. (2001) Comparison of a set of allelic QTL-NILs for chromosome 4 of tomato: Deductions about natural variation and implications for germplasm utilization. Theor. Appl. Genet. 102: 572-590.

4. Tadmor,Y., Fridman, E., Gur, A., Larkov, O., Lastochkin, E., Ravid, U., Zamir, D.and Lewinsohn, E. (2002) Identification of *malodorous*, a wild species allele affecting tomato aroma that was selected against during domestication. J. Agric. Food Chem. 50: 2005-2009.

5. Fridman, E., Liu, Y.S., Carmel-Goren, L., Gur, A., Shoresh, M., Pleban, T., Eshed, Y. and Zamir, D.(2002) Two tightly linked QTLs modify tomato sugar content via distinct physiological pathways. Mol. Genet. Genomics 266: 821-826.

6. Fridman, E. and Zamir, D. (2003) Functional divergence of a syntenic invertase gene family in tomato, potato and *Arabidopsis*. Plant Phys. 131: 603-609.

7. Fridman, E.\*, Carrari, F.\*, Liu, Y.S., Fernie, A. and Zamir, D. (2004) Zooming-in on a quantitative trait for tomato yield using wild species introgression lines. Science 305: 1786-1789.

8. Iijima, Y., Gang, D.R., Fridman, E., Lewinsohn, E. and Pichersky, E. (2004) Characterization of geraniol synthase from the peltate glands of sweet basil. Plant Phys. 134: 370-379.

9. Iijima,Y., Davidovich-Rikanati, R., Fridman, E., Gang, D.R., Bar, E., Lewinsohn, E. and Pichersky, E. (2004) The biochemical and molecular basis for the divergent patterns in the biosynthesis of terpenes and phenylpropenes in the peltate glands of three cultivars of basil (*Ocimum basilicum*) . Plant Phys. 136: 3724-3736.

10. Forouhar, F., Yang, Y., Kumar, D. , Chen, Y. ,Fridman, E., Wook, P.S.,Chiang, Y., Acton, T.B., Montelione, G.T., Pichersky, E., Klessig, D.F. and Liang, T.L. (2005) Structural and biochemical studies identify tobacco SABP2 as a methyl salicylate esterase and implicate it in plant innate immunity. Proc Natl Acad Sci USA 102: 1773-1778.

11. Iijima, Y., Wang, G., Fridman, E. and Pichersky, E. (2005) Analysis of the enzymatic formation of citral in the glands of sweet basil. Arch. Biochem. Biophys. 448: 141-149.

12. Fridman, E., Wang, J., Iijima, Y., Froehlich, J.E., Gang, D.R., Ohlrogge, J. and Pichersky, E. (2005) Metabolic, genomic and biochemical analyses of glandular trichome from the wild tomato species *Lycopersicon hirsutum* identify a key enzyme in the methylketone biosynthetic pathway. Plant Cell 17: 1252-1267.

13. From the cover: Koeduka, T. \*, Fridman, E. \*, Gang, D.R. \*, Vassão, D.G., Jackson, B.L.S, Kish, C.M.S, Orlova, I., , Spassova, S.M., Lewis, N.G. , Noel, J.P. , Baiga, T.J. C , Dudareva, N. , Pichersky, E. (2006) Eugenol and isoeugenol, characteristic aromatic constituents of spices, are biosynthesized via reduction of a coniferyl alcohol ester. Proc Natl Acad Sci USA 103: 10128-10133.

14. Orlova, I., Marshall-Colón, A., Schnepp, J., Wood, B., Varbanova, M., Fridman, E., Blakeslee, J.J., Ann Peer, W., Murphy, A.S., Rhodes, D. ,Pichersky, E., Dudareva, N. (2007) **Reduction of benzenoid synthesis in petunia flowers reveals multiple pathways to benzoic acid and enhancement in auxin transport .** Plant Cell 18:3458-3475.

15. Kapteyn, J., Qualley, A.V., Xie, Z., Fridman, E., D.Dudareva, N., Gang, D.(2007) Evolution of cinnamate/p-coumarate carboxyl methyltransferases and their role in the biosynthesis of methylcinnamate. Plant Cell 18:3458-3475.

16 . Hübner, S.S., Höffken, M., Oren, E., Haseneyer, G., Stein, N., Graner, A., Schmid, K., and Fridman, E. \*\* (2009) Strong correlation of wild barley (*Hordeum spontaneum*) population structure with temperature and precipitation variation. Mol Ecol 18:1523-1536.

17. Ben-Israel, I. S, Geng, Y., Adato, A., Auldrige, M., Nguyen, T., Yu, G., Nguyen, T, Schauvinhold, I., Aharoni, A., Noel, J., Pichersky, E., and Fridman, E. (2009) Multiple biochemical and morphological factors underlie the production of methylketones in tomato trichomes. Plant Phys 151(4): 1952-1964.

18. Yu, G., Nguyen, T.H., Guo, Y., Schauvinhold, I., Auldridge, M., Bhuiyan, N., Ben-Israel, I., Iijima, Y., Fridman, E., Noel, J.P., Pichersky, E. (2010) Enzymatic functions of wild tomato *Solanum habrochaites glabratum* methylketone synthases 1 and 2. Plant Phys 154(1):67-77.

**19.** Gur, A., Osorio, S., **Fridman, E**., Fernie, A.R., Zamir, D. (2010) *hi2*-*1*, A QTL which improves harvest index, earliness and alters metabolite accumulation of processing tomatoes. Theor Appl Genet 121(8):1587-99.

**20.** Hoffmann, T.,Kurtzer, R., Skowranek, K., Kießling, P., **Fridman, E.**, Pichersky, E., and Schwab, W. (2011) Metabolic engineering in strawberry fruit uncovers a dormant biosynthetic pathway. Metab Eng 13(5):527-531.

**21.** Hübner, S., Günther, T., Flavell, A., Graner, A., **Fridman, E.**, Korol, A., and Schmid, K. (2012) Islands and streams: Clusters and gene flow in wild barley populations from the Levant. Mol Ecol 21:1115-1129.

**22.** Auldridge, M., Yu, G., Austin, M.B., Ramsey, J., **Fridman, E.**, Pichersky, E.**,** Noel, J.P.(2012) Emergent decarboxylase activity and attenuation of α/β-Hydrolase activity during the evolution of methylketone biosynthesis in tomato. Plant Cell 24: 1596-1607.

**23.** Ben-Israel, I. **S**, Nida, H., Kilian, B., and Fridman, E. \*\* (2012) Heterotic trait locus (HTL) mapping identifies intra-locus interactions that underlie reproductive hybrid vigor in *Sorghum bicolor*. PLoS One (DOI 10.1371/journal.pone.0038993).

**24.** Hübner, S.**S**, Bdolach, E. \*, Ein-Gedi, S., Korol, A., Schmid, K. and **Fridman, E.**(2013) Phenotypic landscapes: phenological patterns in wild and cultivated barley. J Evol Biol 26(1):163-174.

**25.** Shapira, R., Levy, T., Shaked, S. , **Fridman, E.**, David, L. (2014) Extensive heterosis in growth of yeast hybrids is explained by a combination of genetic models. Heredity 113(4):316-26.

1. **Books and Invited Reviews**
2. **Fridman, E.** \*\* and Pichersky, E. (2005) Metabolomics, proteomics, genomics and identification of enzymes substrates. Curr Opin Plant Bio 8: 242-248. IF 9.39; Category: Plant Sciences; Rank 5/196.

**2. Fridman, E.**, Koezuka, T., Auldridge, M., Austin, M.B., Noel, J.P., and Pichersky, E. (2006) Tomato glandular trichomes as a model system for exploring evolution of specialized metabolism in a single cell. In: Recent Advances in Phytochemistry, vol. 40 :115-130. John Romeo (Eds.) Oxford: Elsevier Science Ltd, (I).

**3.** Young , Y.,Varbanova, M.,Ross, J., Wang, G., Cortes, D., **Fridman, E.**, Shulaev, V., Noel, J.P., and Pichersky, E. (2006) Methylation and demethylation of plant signaling molecules. In: Recent Advances in Phytochemistry, vol. 40: 253-270. John Romeo (Eds.) Oxford: Elsevier Science Ltd, (I).

**4**. Shemesh, K., Iijima, Y., and **Fridman, E.**  (2008) Targeted and non-targeted mutagenesis of metabolic pathways in medicinal plants and herbs. Israel J Plant Sci 55: 115-123.

**5. Fridman, E.**, and Zamir, D. (2012) Next generation education in crop genetics and breeding. Curr Opin Plant Biol 152:218-223.

**6.** **Fridman, E.** (2015) Consequences of hybridization and heterozygosity on plant vigor and phenotypic stability. Plant Science (DOI: 10.1016/j.plantsci.2014.11.014).

1. **Patents**

6.1 Zamir, D., Pleban, T., and **Fridman, E.** (200) Cultivated tomato plant having increased brix value and methods of producing the same. Patent application in the US No.09/477,380.

6.2 Pichersky, E., **Fridman, E.**, Yu, G., Nguyen, T.T.H., Noel, J.P., Ben-Israel, I., (2010) Methylketone Synthase , Production of Methylketones in Plants and Bacteria. Patent application in the US (US 20110289632 A1).