Eyal Fridman- CV June-2024

ID 024170177; Tel: +972-54-6554719; eMail; fridmane@agri.gov.il

(a) Education and Training

The Hebrew University of Jerusalem	Animal Sciences	B.S. 1996
The Hebrew University of Jerusalem	Genetics	Ph.D.(High-Excellence) 2002
The University of Michigan	Genomics and Biochemistry	postdoc 2002-2005

(b) Research and Professional Experience

Researcher (A; equivalent to Associate Prof), Institute of Plant Sciences, ARO Volcani (2019- present)
Researcher (B; equivalent to Assistant Prof), Institute of Plant Sciences, ARO Volcani (2014- 2018)
Senior Lecturer, RH Smith Institute for Plant Sciences and Genetics, Faculty of Agriculture, The Hebrew University of Jerusalem, Rehovot (2005- 2014)

(c) Teaching experience

Introduction to Evolutionary Biology	Faculty of Agriculture, HUJI	2006-2013
Biology of the Plant Cell	Faculty of Agriculture, HUJI	2011-2013
Plant Biotechnology	Plant Sciences, TAU	2017

(d) Publications

Past 5 years:

43. Tiwari, L.D., Bdolach, E., Prusty, M.R., A., Bodenheimer, Beery, S., Doron-Faigenboim, A., Yamamoto, E., Panzarová, K., Kashkush, K., Shental, N., **Fridman, E.** (2024) Cytonuclear interactions modulate photosynthetic rhythmicity and growth in wild barley. Physiol Plant 176(1):e14192.

42. Tiwari, L.D., Sohn-Kurtz, A., Bodenheimer, S., Bdolach, E., **Fridman, E.** (2023) Circadian clock under domestication and climate change: More than selection on nuclear genes for flowering J Exp Bot., erad283, https://doi.org/10.1093/jxb/erad283

41. Chang, W., **Fridman, E.**, Mascher, M., Himmelbach, A., Schmid, K.J. (2022) Physical geography, isolation by distance and environmental variables shape genomic variation of wild barley (*Hordeum vulgare L. ssp. spontaneum*) in the Southern Levant. 128:107-119

40. Prusty, MR*, Bdolach, E.*, Yamamoto, E. Tiwari, LD, Silberman, R. Doron-Feigenbaum, A., Neyhart, JL, Bonfil, D., Kashkush, K., Pillen, K., Smith, KP, and **Fridman, E.** (2021) Genetic loci mediating circadian clock output plasticity and crop productivity under barley domestication. New Phytologist 230(5):1787-1801.

39. Alegria Terrazas R, Balbirnie-Cumming K, Morris J, Hedley PE, Russell J, Paterson E, Baggs EM, **Fridman E,** Bulgarelli D (2020) A footprint of plant eco-geographic adaptation on the composition of the barley rhizosphere bacterial microbiota. Sci Rep. 2020 Jul 31;10(1):12916.

38. Lazar S, Prusty MR, Bishara K, Sherman A, Fridman E (2020) RECAS9: Recombining wild species introgression via mitotic gene editing in barley. bioRxiv. doi: https://doi.org/10.1101/2020.01.07.897280

37. Ronen, M., Sela, H., **Fridman, E.**, Perl-Treves, R., Kopahnke, D., Moreau, A., Ben-David, R., Harel, A. (2019) Characterization of the barley Net Blotch pathosystem at the center of origin of host and pathogen. Pathogens 8: 275.

36. Bdolach, E., M. Prusty, Faigenboim-Doron, A, Filichkin, T., Helgerson, L., Schmid, K.J., Greiner , S. **Fridman, E.** (2019) Thermal plasticity of the circadian clock is under nuclear and cytoplasmic control in wild barley. Plant Cell & Environment 2(11):3105-3120.

34. Galkin, E., Dalal, A., Evenko, A., **Fridman, E**., Kan, I. Wallach, R., Moshelion, M. (2018) Risk-management strategies and transpiration rates of wild barley in uncertain environments. Physiologia Plantarum 164:412-428.

33. Merchuk-Ovnat*. L., Silberman*, R., Laiba, E., Maurer, A., Pillen, K. Faigenboim, A., **Fridman, E.** (2018) Genome scan identifies flowering-independent effects of barley *HsDry2.2* locus on yield traits under water deficit. J Exp Bot. 69:1765-1779.

Selected publications before:

Nida, H., Blum, S., Eposito, D., Srivastava, D., Elbaum, R., Xin, Z., Erlich, Y., **Fridman, E.***, Shental, N.* (2016) Highly efficient de novo mutant identification in a Sorghum bicolor TILLING population using the ComSeq approach. Plant J 86(4):349-59. (* Corresponding authors).

Li, X., Li, X., **Fridman, E.**, Tesso, T.T. , and J. Yu* (2015) Dissecting repulsion linkage in the Dw3 gene region for sorghum plant height provides insights into heterosis. *Proceedings of National Academy of Sciences USA 112(38):* 11823-11828.

Hübner, 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.

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)

Fridman, E. *(2015) Consequences of hybridization and heterozygosity on plant vigor and phenotypic stability Plant Sci 232: 35-40..

Hübner, 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.

Cover: Ben-Israel, I., 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.

Cover: Koeduka, T. *, **Fridman, E. *,** Gang, D.R. *, Vassão, D.G., Jackson, B.L.S, Kish, C.M., 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.

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.

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.

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

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.

(d) Patents

Zamir, D., Pleban, T., and **Fridman, E.** (2000) Cultivated tomato plant having increased brix value and methods of producing the same. Patent application in the US No.09/477,380.

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).

(e) Selected awarded grants

Year	Agency	Years	Role*	Title (short)	Total(USD$)
2006	ISF	3	PI	Phenypropene in plants	330,000
2006	BARD	3	PI	Tomato methylketones	300,000
2008	GIF	1	PI	Natural biodiversity of barley	35,000
2011	BARD	1	CI	ComSeq allele mining	100,000
2012	BARD	3	PI	Heterosis mapping in sorghum	300,000
2014	ERA CAP	3	LPI	BARLEY HEB-NAM	244,000
2017	ISF	3	PI	Circadian clock canalization	225,000
2018	Chief Sci.	3	PI	RECAS9: Mapping by CRISPR	150,000
2020	Horizon2020	4	LPI	CAPITALISE: Natural diversity for photosynthesis	300,000
2021	BSF-NSF	4	PI	Nano RECAS9 mapping	275,000
2021	BARD	3	PI	Cytonuclear barley breeding	310,000
2021	ISF	3	PI	Plasticity of barley circadian clock	195,000
2022	MOST/IIA	2	PI	iBREATHE: Resilient barley for Mediterranean	125,000
2024	BARD	3	PI	Cytonuclear genetics for grain quality in barley	310,000

Principal Investigator; LPI= Local Principal Investigator; CI = Cooperating Investigator

(f) Student and staff supervision

Current (direct supervision): 4 PhD, 1 technician

Past, direct supervision (graduated, postdoc more than 2 years): 11 MSc, 3 PhD, 6 Postdocs