

CV - Yehoram (Yori) Leshem

Date: 24/07/2022

A. Personal Details

- Full name: Yehoram (Yori) Leshem
- Country of birth: Israel
- Citizenship: Israeli
- ID number: 02796868-4
- Family status: Married +2
- Full home address: Moshav Sde-Ilan
- Phone: 058-6334648
- Work: MIGAL, Kiryat-Shmona
- E-mails: yoril@migal.org.il , yori.leshem@mail.huji.ac.il

B. Higher Education

- | | |
|------------|--|
| 1995-1997 | B.Sc. The Faculty of Agriculture, the Hebrew University, Rehovot. Field of studies: Plant sciences. |
| 1999-2001 | M.Sc. Department of Life Sciences, Ben-Gurion University in the Negev, Beer-Sheva. Field of study: Plant physiology. |
| 2002- 2008 | Ph.D. Department of Plant Sciences, the Hebrew University, Jerusalem. Supervisor: Prof. Alex Levine. Field of study: Plant Molecular Stress Biology. |
| 2008- 2013 | Post-doctoral research fellow at the Department of Plant Biology, University of California - Davis. Host: Prof. Venkatesan Sundaresan. Field of study: Plant Reproductive Developmental Genetics. |

C. Appointments and Positions in Institutions of Higher Education

- 2013– Present. **Principle Investigator** – head of “Plant Development and Adaptation Laboratory”, MIGAL – Galilee Research Institute, Kiryat-Shmona.
 Webpage: <https://www.migal.org.il/en/Yori-Leshem>
- 2022- Present **Senior Lecturer** (Biotechnology-Agriculture and Nutrition Sciences).
 Tel-Hai Academic College

D. Teaching

- Teaching in academic institutions:
 - 1999-2001 **Teaching assistant:** Introduction to Plant Sciences (Lecturer: Prof. Nurit Bejerano). Ben-Gurion University in the Negev.
 - 2003/2004 **Teaching assistant:** Introduction to Plant Sciences (Lecturer: Prof. Alex Levine). The Hebrew University of Jerusalem.
 - 2005/2006 **Course coordinator** (Introduction to Plant Sciences - Students Lab). The Hebrew University of Jerusalem.
 - 2013- 2021 **Adjunct Lecturer** (Biotechnology-Agriculture and Nutrition Sciences). Tel-Hai Academic College.
- **Courses taught at Tel-Hai Academic College:**
 - * Plant Developmental Biology (1st semester) - M.Sc.
 - * Plant Biology for Nutritionists (2nd semester) - B.Sc.
 - * Plant Abiotic Stress Responses (5th semester) - B.Sc.
 - * Advanced Seminar in Biotechnology (6th semester) - B.Sc.
 - * Students research projects – Mentor (B.Sc. 3rd year Biotechnology)

E. Supervision of Graduate Students

- Dekel Avraham - MSc in Biotechnology, Tel Hai Academic College.
 Subject: **The involvement of Rab 11 proteins in plants responses to heat stress.** (2016/2017 - 2017/2018).
 Co-supervisor: Dr. Alon Margalit.
- Dafna Tidhar - MSc in Biotechnology, Tel Hai Academic College.
 Subject: **Understanding the mechanism of drought tolerance in plants 35S::Rab-A2b** (2018/2019 - 2019/2020).
 Co-supervisor: Prof. Raffi Stern.

- Rona Biber - MSc in Biotechnology, Tel Hai Academic College.
Subject: **The effect of RabA2b overexpression on Auxin accumulation patterns and meristematic activity in Arabidopsis thaliana roots.** (2019/2020 – 2020/2021).
Co-supervisor: Prof. Raffi Stern.
- Opal Bechar - MSc in Biotechnology, Tel Hai Academic College.
Subject: **RabA2b's role in cuticle synthesis and in drought resistance.** (2020/2021 – 2021/2022).
Co-supervisor: Prof. Raffi Stern.
- Vivek Ambastha – Postdoctoral training – MIGAL.
Subject: **The role of Rab small GTPases in plant abiotic stress responses.** (2016-2021).
- Ambar Gupta – Postdoctoral training – MIGAL.
Subject: **Development of a remote sensing index to determine the accumulation of Reactive Oxygen Species within the photosynthetic apparatus of plants.** (2022-2023).
Co-supervisor: Dr. Oded Liran.

F. Grants

- 1) 2015-2016. Altered trafficking pathways as a novel tool for improving salt and heat tolerance in plants. **ICA- א"ק**. 50,000 NIS.
- 2) 2016-2017. RNA-Seq of Abiotic stress responses. In collaboration with **ILUMINA and the Technion** Genome Center. 40,000 NIS.
- 3) 2017. Traveling grant for establishing international scientific connections. In collaboration with Prof. David Honys from the Institute of Experimental Botany the Czech Republic (IEB). **The Czech Academy of Science**. 1,000 \$.
- 4) 2017-2021. Interconnection between thermal acquired tolerance and systemic acquired resistance in plants. **Israel Science Foundation** - Grant # 2713/16 (ISF-UGC program). 1,110,000 NIS.
- 5) 2017-2018. The Syrian Pear (*Pyrus syriaca*) flower exudates - A potential resource of anti-Fire-Blight factors. **MIGAL- GAVISH** grant. 100,000 NIS.
- 6) 2018-2019. Developing a new Healthy/Superfood crop by crossing Graviola (*Annona muricata*) with Sugar Apple (*Annona squamosa*). **ICA- א"ק**. 70,000 NIS.
- 7) 2021. **Tel Hai Academic College**, research grants for Segel-Amit – 6,000 NIS.

- 8) 2022-2023 Development of a remote sensing index to determine the accumulation of Reactive Oxygen Species within the photosynthetic apparatus of plants. **MIGAL** grants for **futuristic agriculture during climate change**. (Peer reviewed). 250,000 NIS. (In collaboration with Dr. Oded Liran from MIGAL. My share is 125,000 NIS).

G. Awards and Fellowships

- 1) 2004. The "Harel" award for excellence. The Department of Plant and Environmental Sciences, the Hebrew University of Jerusalem.
- 2) 2006. The "Katzir" students Traveling Scholarship, The Weizmann Institute of Science, Rehovot.
- 3) 2004-2007. The Rectors' enlarged fellowship for excellent PhD students in the Hebrew University of Jerusalem.
- 4) 2008-2010. Vaadia- BARD Postdoctoral Fellowship (Award # FI-392-07).
- 5) 2011. UC-Davis PSA (PostDocs Association) Travel Award.

H. Active Participation in Conferences (oral presentations)

- 1) 07.01.1999. Ministry of Agriculture – SHAHAM annual conference. “The effect of UV absorbing greenhouse plastic sheets on green Bell-Pepper Growth”. The Volcani Center (Agricultural Research Organization) Beit-Dagan.
- 2) 09.04.2006. **The Gordon conference** on Salt and Drought stresses in Plants. “The opposing roles of the vacuolar vesicle trafficking in salt and drought tolerance”. Oxford, UK. Invited lecture.
- 3) 02.15.2007. ISPB annual conference (Israeli Society of Plant Biologists), "Mediation of abiotic stress responses by vacuolar vesicle trafficking". Rehovot.
- 4) 02.16.2009. Reproductive Biology Workshop, UC MEXUS. “*glauca* - A tale of a lost nucleus ?” Irapuato, Mexico. Invited lecture.
- 5) 12.1.2013. ISOFRR (the Israeli Society for Oxygen and Free Radicals Research) 29th Annual meeting. “Sub-organelle ROS: possible role in chloroplasts during stomata closure”. Tel-Chai Academic College. (Heb.).
- 6) 09.11.2015. CEREIA workshop (Center of Excellence for Research on Environment, Health and Aging). “Improving salt tolerance by altering trafficking pathways”. Wageningen, the Netherlands.

- 7) 04.03.2019. 21st Galilee Research Conference. “A little bit on life, death and a lot of salt”. Tel-Hai Academic College. (Heb.).
- 8) 15.11.2021. 2nd Edition of Plant Science: Research & Tech. “The involvement of RabA2b in water stress tolerance in Arabidopsis”. International Virtual Conference.
https://www.globalepisteme.org/upload/brochurs/1638249018_Plant_and_environmental_science_Conference_Proceedings.pdf

Seminars in academic institutes (in Israel and abroad):

- 1) 5.09.2004. “Salinity induced Reactive Oxygen Species generation, inside or outside? Good or bad? ”. The Alexander Silberman Institute for Life Sciences – Givat Ram, the Hebrew University of Jerusalem.
- 2) 13.06.2006. “The role of vesicle- SNARE expression in Arabidopsis salt tolerance”. Bowley Plant Sciences Center, UC Davis. USA.
- 3) 2012. The lecture: “How Good is BAHD in Central-Cell Fertilization ?“ was present at the following institutions: Ben-Gurion University, Bar-Ilan University, Haifa University, The Hebrew University, Tel-Aviv University, Volcani Center and MIGAL.
- 4) 14.02.2017. Czech-Israeli Scientific ties exploration. “The role of GLUACE in central cell fertilization and pollen tube attraction”. The Institute of Experimental Botany, Prague, the Czech Republic.
- 5) 9.06.2021. “RabA2b trafficking is important for water stress tolerance in plants”. Institute for Agriculture and Biotechnology of Drylands – Sde Boker, Ben Gurion University of the Negev.

I. Non-Academic Activity

Community contribution - Science and Community Outreach activities:

- 1) 2014 - **Zemach Hasade** - Popular sciences contributor:
<http://www.wildflowers.co.il/english/>
- 2) 2015 - **Bashaar** (Academic Community for Israeli Society) correspondent:
<http://www.bashaar.org.il/>
- 3) 2016-2017 **GALILIUME**: High school students project mentor:
<https://www.facebook.com/Galilium/>

Samara Da'abus, Masa'ada High School.

Subject: The role of small HSP in Arabidopsis responses to heat shock.

- 4) 2019-2020 **Leil Hamada'ananim activities**
https://www.gov.il/he/departments/news/most_news202001126
- 5) 2022 **Yom-Hamada activities**
<https://www.migal.org.il/en/science-day2022>

J. Publications

1. M.Sc. thesis:

Pattern of fruit development in the columnar cactus *Cereus Peruvianus*: a background to understanding fruit cracking during ripening. Ben-Gurion University in the Negev. Supervised by Prof. Yosef Mizrachi. Approved: 09/15/2001

2. Ph.D. thesis

The involvement of vesicle trafficking in plant responses to abiotic stresses. The Hebrew University of Jerusalem. Supervised by Prof. Alex Levine. Approved: 05/12/2008

3. Books

4. Edited books

5. **Articles in refereed journals:**

[Impact Factor : journal ranking* : number of citations].

[* **Q1** occupies the top 25% of journals in the list, based on SJR citation index; **Q2** occupies the 25-50% group; **Q3** the 50-75% group, **Q4** occupies the low 75-100%]

- 1) 1997. Leshem Ya'acov, Haramaty E, Iluz D, Malik Z, Soffer Y, Roirman L and **Leshem Yehoram**. Effect of stress nitric oxide (NO) Interaction between chlorophyll fluorescence, galactolipid fluidity and lipoxygenase activity. *Plant Physiol. Biochem.* 35:573-579. [4.270 : Q1 : citations- 80].
<https://agris.fao.org/agris-search/search.do?recordID=FR1997004355>
- 2) 2003. **Leshem Y**, Nerd A and Mizrahi Y. Fruit cracking in *Cereus peruvianus* a new Cactus fruit. *J. Hort. Sci. and BioTech* 78:426-431. [1.291 : Q2 : citations- 6].
<https://doi.org/10.1080/14620316.2003.11511643>

- 3) 2004. Mazel A, **Leshem Y**, Tiwari BS and Levine A. Induction of salt and osmotic stress tolerance by over expression of an intracellular vesicle trafficking protein AtRab7. *Plant Physiology* 134:118-128. [8.340 : Q1 : citations- 323].
<https://doi.org/10.1104/pp.103.025379>
- 4) 2006. **Leshem Y**, Melamed-Book N, Cagnac O, Ronen G, Nishri Y, Solomon M, Cohen G and Levine A. Suppression of *Arabidopsis* vesicle- SNARE expression inhibited fusion of H₂O₂-containing vesicles with tonoplast and increased salt tolerance. *PNAS* 103:18008-18013. [11.205 : Q1 : citations- 224].
<https://doi.org/10.1073/pnas.0604421103>
- 5) 2007. **Leshem Y** and Levine A. Intracellular ROS – what does it do there ? *Plant Signaling and Behavior*, 2:155-156. [2.247 : 1.218 : Q1 : citations- 6].
<https://doi.org/10.4161/psb.2.3.3685>
- 6) 2007. **Leshem Y**, Seri L and Levine A. Induction of phosphatidylinositol 3-kinase- mediated endocytosis by salt stress leads to intracellular production of reactive oxygen species and salt tolerance. *The Plant Journal*, 51:185-197. [7.091 : Q1 : citations- 310]. <https://doi.org/10.1111/j.1365-313X.2007.03134.x>
- 7) 2010. **Leshem Y**, Golani Y, Kaye Y and Levine A. Reduced expression of the v-SNAREs AtVAMP71/AtVAMP7C gene family in *Arabidopsis* reduces drought tolerance by suppression of abscisic acid-dependent stomatal closure. *Journal of Experimental Botany*, 61:2615-2622. [6.992 : Q1 : citations- 74]. <https://doi.org/10.1093/jxb/erq099>
- 8) 2011. **Leshem Y**, Kesar T and Shmida A. Female- biased nectar production in the protandrous, hermaphroditic shrub *Salvia hierosolymitana* (Lamiaceae). *Australian Journal of Botany*, 59:18–25. [1.585 : Q2 : citations- 4].
<https://www.publish.csiro.au/bt/BT10176>
- 9) 2011. Kaye Y, Golani Y, Singer Y, **Leshem Y**, Cohen G, Ercetin M, Gillaspay G and Levine A. Polyphosphate 5-phosphatase7 regulates production of reactive oxygen species and salt tolerance in *Arabidopsis*. *Plant Physiology*, 157:229-241. [8.340 : Q1 : citations-83]. <https://doi.org/10.1104/pp.111.176883>
- 10) 2012. **Leshem Y**, Johnson C, Wuest S, Song X, Ngo Q, Grossniklaus U and Sundaresan V. Molecular Characterization of the *glauce* Mutant: a Central Cell-Specific Function Is Required for Double Fertilization in *Arabidopsis*.

- The Plant Cell*, 24:3264-3277. [11.227 : Q1 : citations- 34].
<https://doi.org/10.1105/tpc.112.096420>
- 11) 2013. **Leshem Y**, Johnson C and Sundaresan V. Pollen tube entry into the synergid cell of Arabidopsis is observed at a site-distinct from the filiform apparatus. *Plant Reproduction*, 26:93–99. [4.217: Q1 : citations- 46].
<https://doi.org/10.1007/s00497-013-0211-1>
- 12) 2013. **Leshem Y** and Levine A. Zooming into sub-organellar localization of reactive oxygen species in guard cell chloroplasts during abscisic acid and methyl-jasmonate treatments. *Plant Signaling and Behavior*, 8:10. e25689-1-e25689-4 (Cover page). [2.247: Q1 : citations- 13].
<https://doi.org/10.4161/psb.25689>
- 13) 2020. Ambastha V, Friedman Y and **Leshem Y**. Laterals take it better – Emerging and young lateral roots survive lethal salinity longer than the primary root in Arabidopsis. *Scientific Reports*, 10:3291. [4.996 : Q1 : citations- 9].
<https://doi.org/10.1038/s41598-020-60163-7>
- 14) 2020. Ambastha V and **Leshem Y**. Differential cell persistence is observed in the Arabidopsis female gametophyte during heat stress. *Plant Reproduction*, 33:111–116. [4.217 : Q1 : citations- 2]. <https://doi.org/10.1007/s00497-020-00390-0>
- 15) 2020. Ambastha V and **Leshem Y**. Cyclin B1;1 activity is observed in lateral roots but not in the primary root during lethal salinity. *Plant Signaling & Behavior*, 15:8 e1776026 (cover page). [2.247 : Q1 : citations- 2].
<https://doi.org/10.1080/15592324.2020.1776026>
- 16) 2021. Vanti GL, **Leshem Y** and Masaphy S. Resistance response enhancement and reduction of Botrytis cinerea infection in strawberry fruit by *Morchella conica* mycelial extract. *Postharvest Biology and Technology*, 175:111470. [5.537: Q1 : citations- 7]. <https://doi.org/10.1016/j.postharvbio.2021.111470>
- 17) 2021. Li G, Li Z, Yang Z, **Leshem Y**, Shen Y, and Men S. Mitochondrial Heat Shock Cognate Protein 70 Contributes to Auxin-mediated Embryo Development. *Plant Physiology*. 186(2):1101-1121. [8.340 : Q1 : citations- 1].
<https://doi.org/10.1093/plphys/kiab138>
- 18) 2021. Ambastha V, Matityahu I, Dafna Tidhar and **Leshem Y**. RabA2b Overexpression Alters the Plasma-Membrane Proteome and Improves

Drought Tolerance in Arabidopsis. *Frontiers in Plant Science* 12:738694

[6.627 : Q1 : citations- 0]. <https://doi.org/10.3389/fpls.2021.738694>

- 19) Tadmor Y, Raz A, Reikin-Barak S, Ambastha V, Shemesh E, **Leshem Y**, Crane O, Stern R, Goldway M, Tchernov D and Liran O. (2021). “Metamitron, a Photosynthetic Electron Transport Chain Inhibitor, Modulates the Photoprotective Mechanism of Apple Trees”. (2021). *Plants* 10:2803. [4.827 : Q1 : citations- 3]. <https://doi.org/10.3390/plants10122803>

* Articles in preparation:

2022. Vivek Ambastha, Yuval Nevo, Ifat Matityahu, Inbar Plaschkes, Annat Zisovich, David Honys and **Yehoram Leshem***. Profiling of stigma exudate small RNAs in several *Pyrus* species reveals novel functions in cross kingdom interactions.

The manuscript is currently being examined by MIGAL’s legal team for the need of Intellectual Properties (IP) protection.

To be submitted during summer 2022 to: *Horticulture Research*, after receiving MIGAL’s approval for publication.

2022. Vivek Ambastha, Dafna Tidhar, Dekel Avraham, Ifat Matityahu and **Yehoram Leshem***. The involvement of RabA2b in heat stress responses and acquired thermal tolerance in Arabidopsis. To be submitted during summer 2022 to: *Journal of Plant Interactions*.

2022. Vivek Ambastha, Yuval Nevo, Ifat Matityahu and **Yehoram Leshem***. Hormonal involvement in mediation of Acquired Thermal Tolerance in Arabidopsis – A Transcriptomic perspective. To be submitted during summer 2022 to: *International Journal of Molecular Sciences*.

6. Refereed conference proceedings.

- 1) 2001. **Leshem Y**. “Fruit development and cracking in *Cereus peruvianus* (L.) Miller – A new cactus crop.” The American Society of Horticultural Sciences (ASHS) 98th Annual Conference (July 22-25). Sacramento, California, USA.

- 2) 2006. **Leshem Y.** “Intracellular Production of Reactive Oxygen Species During Salt Stress Is Mediated By PtdIns-3-Kinase Regulated Endocytosis”. The 17th Annual Arabidopsis Conference (June 27-July 2). Madison, Wisconsin, USA.
- 3) 2011. **Leshem Y.** “Gating of sperm entry to the Central Cell during double fertilization is mediated by *GLAUCE*.” Plant Biology 2011 (ASPB annual meeting, August 6-10). Minneapolis, USA.
- 4) 2019. **Leshem Y.** “Laterals take it better – Higher resistance is observed in emerging and young lateral roots during lethal salt treatments in Arabidopsis” The 30th International Conference on Arabidopsis Research (ICAR). Wuhan, China.

7. Other articles (in non-refereed journals)

- 1) 2007. Hebrew University researchers succeed in improving plants’ abilities to cope with saline conditions. Hebrew University press release (June 13th). http://www.huji.ac.il/cgi-bin/dovrut/dovrut_search_eng.pl?mesge118172298832688760
- 2) 2007. **Leshem Y.** interviewed by Tzafrir Rinat about the significance of his PhD findings. (2007). Ha’aretz, June 3rd, p.10. (Heb.).
- 3) 2008. **Leshem Y,** Kesar T and Shmida A. “Female-biased nectar production in the protandrous, hermaphroditic shrub *Salvia hierosolymitana*: possible reasons and consequences.” Discussion Paper Series (# 494). Center for the Study of Rationality, the Hebrew University of Jerusalem.
- 4) 2009. **Leshem Y.** Cover page image. *Antioxidants & Redox Signaling*, April issue (11):4. <https://www.liebertpub.com/toc/ars/11/4>
- 5) 2014. **Leshem Y.** *Salvia hierosolymitana*. <http://www.wildflowers.co.il/english/>
- 6) 2020. **Leshem Y.** “Coping with saline water in agriculture - New horizons”. October issue (Heb.).
- 7) 2021. Ambastha V and **Leshem Y***. Low Chilling Requirement apple cultivars as a potential genomic resource for improving heat stress tolerance during global warming. *Agricultural Research & Technology* 26:3 <https://juniperpublishers.com/artoaj/pdf/ARTOAJ.MS.ID.556339.pdf>

K. Miscellaneous

Peer reviewer.

* Research proposals reviewer for the Israel Science Foundation, the Ministry of Sciences and Technology proposals, the Ministry of Agriculture.

* Research manuscripts reviewer for following scientific journals:

Development, Genes, HortScience, Plants, Protoplasma

Academic Service:

* Conference steering committee member – 24th Galilee Research Conference. Tel Hai Academic College (23-24.03.2022).

* Member of the College committee for students' academic requests (since March 2022).