June 2026

Curriculum Vitae

Personal Details

Name:	Leonid Livshits
Work Address:	Migal Galilee Research Institute, Tel-Hai University of Kiryat Shmona in the Galilee, Israel
Work Telephone:	+972-(0)4-6955028
Cellular:	+972-(0)54-4931425
Email:	Leonid.li@migal.org.il; livshileo@telhai.ac.il
Web page:	https://www.migal.org.il/en/dr-leonid-livshits

Current Positions

Dates	Description
2024-now	Head of Research group, Migal Galilee Research Institute, Tel-Hai University of Kiryat Shmona in the Galilee, Israel
2024-now	Senior Lecturer, Faculty of Sciences, Tel-Hai University of Kiryat Shmona in the Galilee, Israel

Teaching Experience / Guiding Students

A. Academic Contribution:

Dates	Description
2024- now	Senior Lecturer, Faculty of Sciences, Tel-Hai University of Kiryat Shmona in the Galilee, Israel

B. Guidance of M.Sc. Students (or B. Sci. internship)

Graduation date	Name	Title of thesis	Guidance with
2012	Mr. Ariel Srulevich	Role of PKC in healthy and T2 diabetic erythrocyte responses on acute hyperglycemic exposure	Prof I. Raz and Prof. E. Ziv
2024	Ms. Lama Tarabeih	The microwave dielectric response of calcium transport in blood cells	Prof Y. Feldman
2026	Ms. Or Schpitz	The Possible Role of Red Blood Cell (RBC) Membrane Components in the Regulation of Native RBC Aggregability (Rouleau Formation)	
2025 (current)	Ms. Nophar Yifrah	Protein Kinase C and Hemoglobin Interplay in the Red Blood Cell Membrane: Mechanisms and Relevance to Type 2 Diabetes Pathophysiology.	

C. Guidance of Ph.D. Students:

Graduation date	Name	Title of thesis	Guidance with

2020	Mr. Marcelo David	The dielectric spectroscopy of human red blood cells during bank blood storage	Prof Y. Feldman and Dr G. Barshtein
2024	Ms. Cindy Galinado Houri	The microwave dielectric response of glucose uptake by erythrocytes	Prof Y. Feldman and Dr S. Einav

D. Guidance of PostDoc Researchers:

Graduation date	**Name**	**Title of thesis**	**Guidance with**
2025 (now)	Dr. Cindy Galinado Houri	Tracking Hemoglobin Isoform Redistribution via the Dielectric Response of Cytosolic Water in Red Blood Cells	

Reviewed references (last 10 years)

1. Barshtein, G., **Livshits, L.,** Shvartsman, L.D., Shlomai, N.O., Yedgar, S., Arbell, D(2016) Polystyrene Nanoparticles Activate Erythrocyte Aggregation and Adhesion to Endothelial Cells. *Cell Biochem Biophys.* 74(1):19-27.
2. Levy, E., Barshtein, G., **Livshits, L.,** Ben Ishai, P., Feldman, Y (2016). Dielectric Response of Cytoplasmic Water and Its Connection to the Vitality of Human Red Blood Cells: I. Glucose Concentration Influence. *J Phys Chem B.* 120(39):10214-10220.
3. Abergel, R. [Eq], **Livshits, L. [Eq],** Shaked, M., Chatterjee, A., Gross, E. (2017). Synergism between soluble guanylate cyclase signaling and neuropeptides extends lifespan in the nematode C. elegans. *Aging Cell,* 16(2):401-413.
4. **Livshits, L. ,** Chatterjee, A.K., Karbian, N., Abergel, R., Abergel, Z., Gross, E (2017) Mechanisms of defense against products of cysteine catabolism in the nematode Caenorhabditis elegans. *Free Radic Biol Med.* 104:346-359.
5. Levy, E., David, M., Barshtein, G., Yedgar, S., **Livshits, L.,** Ben Ishai, P., Feldman, Y (2017). Dielectric Response of Cytoplasmic Water and Its Connection to the Vitality of Human Red Blood Cells: II. The influence of storage. *J Phys Chem B.* 121(20):5273-5278.
6. Zuckerman, B., Abergel, Z., Zelmanovich, V., Romero, L., Abergel, R., **Livshits, L.,** Smith, Y., Gross E. (2017). Characterization of gene expression associated with the adaptation of the nematode C. elegans to hypoxia and reoxygenation stress reveals an unexpected function of the neuroglobin GLB-5 in innate immunity. *Free Radic Biol Med.* 108:858-873.
7. **Livshits, L.,** Gross, E. (2017). A method for measuring sulfide toxicity in the nematode Caenorhabditis elegans. *MethodsX.* 4:250-255.
8. Barshtein, G., Arbell, D., **Livshits, L.,** Gural, A. (2018). Is It Possible to Reverse the Storage-Induced Lesion of Red Blood Cells? *Front Physiol.* 9:914. DOI: 10.3389/fphys.2018.00914
9. Gassmann, M., Mairbäurl, H., **Livshits, L.,** Seide, S., Hackbusch, M., Malczyk, M., Kraut, S., Gassmann, N.N., Weissmann, N., Muckenthaler, M.U. (2019). The increase in hemoglobin concentration with altitude varies among human populations. *Ann N Y Acad Sci.* 1450(1):204-220. *DOI: 10.1111/nyas.14136*
10. Romero-Afrima, L., Zelmanovich, V., Abergel, Z., Zuckerman, B., Shaked, M., Abergel, R., **Livshits, L.,** Smith, Y., Gross E. (2020). Ferritin is regulated by a neuro-intestinal axis in the nematode Caenorhabditis elegans. *Redox Biol.* 28:101359. DOI: 10.1016/j.redox.2019.101359
11. Koshkaryev, A., **Livshits, L.,** Pajic-Lijakovic, I., Gural, A., Barshtein, G., Yedgar, S. (2020). Non-oxidative band-3 clustering agents cause the externalization of phosphatidylserine on erythrocyte surfaces by a calcium-independent mechanism. *Biochim Biophys Acta Biomembr.* Feb 28:183231. DOI: 10.1016/j.bbamem.2020.183231

12. Siwach, P., Levy, E., **Livshits, L.,** Feldman, Y., Kaganovich, D. (2020). Water is a biomarker of changes in the cellular environment in live animals. *Sci Rep.* 10(1):9095. DOI: 10.1038/s41598-020-66022-9
13. David, M., Levy, E., Barshtein, G., **Livshits, L.,** Arbell, D., Ben Ishai, P., Feldman, Y . (2020). The dielectric spectroscopy of human red blood cells during 37-day storage: β-dispersion parameterization. *Biochim Biophys Acta Biomembr.* 1862(11):183410. DOI: 10.1016/j.bbamem.2020.183410
14. **Livshits L.,** Barshtein G., Arbell D., Gural A., Levin C., Guizouarn H. (2021). Do we store packed red blood cells under "quasi-diabetic" conditions? *Biomolecules,* 11:992. DOI: 10.3390/biom11070992
15. **Livshits, L.**, Bilu, T., Peretz, S., Bogdanova, A., Gassmann, M., Eitam, H., Koren, A., Levin, C. (2022). Back to the "Gold Standard": How Precise Is Hematocrit Detection Today? *Mediterr J Hematol Infect Dis.*, 14 (1):e2022049. DOI: 10.4084/MJHID.2022.049
16. Sadafi A, Sans LMM, Makhro A, **Livshits L**, Navab N, Bogdanova A, Albarqouni S, Marr C (2021) Fourier Transform of Percoll Gradients Boosts CNN Classification of Hereditary Hemolytic Anemias. IEEE 18th International Symposium on Biomedical Imaging (ISBI) 966-970.
17. Sadafi A, Makhro A, **Livshits L**, Navab N, Bogdanova A, Albarqouni S, Marr C (2021) Sickle Cell Disease Severity Prediction from Percoll Gradient Images using Graph Convolutional Networks. 3rd MICCAI Workshop on Domain Adaptation and Representation Transfer (DART) 2021 12968,216-225**.**
18. Galindo, C., Latypova, L., Barshtein, G., **Livshits, L.,** Arbell, D., Einav, S., Feldman, Y. (2022). The inhibition of glucose uptake to erythrocytes: microwave dielectric response. *Eur Biophys J.* 51(4-5):353-363. DOI: 10.1007/s00249-022-01602-3
19. Peretz, S. [Eq], **Livshits, L.**[Eq], Pretorius, E., Makhro, A., Bogdanova, A., Gassmann, M., Koren, A., Levin, C. (2022). The protective effect of the spleen in sickle cell patients. A comparative study between patients with asplenia/hyposplenism and hypersplenism. *Front. Physiol.,* 13:796837. DOI: 10.3389/fphys.2022.796837
20. Barshtein G, Gural A, Arbell D, Barkan R, **Livshits L,** Pajic-Lijakovic I, Yedgar S (2023). Red Blood Cell Deformability Is Expressed by a Set of Interrelated Membrane Proteins. *Int J Mol Sci*, 24, 12755. DOI: 10.3390/ijms241612755
21. **Livshits L,** Peretz S, Bogdanova A, Galindo C, Feldman Y, Eitam H, Barshtein G, Pajic Lijakovic I., Koren A, Gassmann M, Levin C (2023). The Impact of Ca^{2+} on Intracellular Distribution of Hemoglobin in Human Erythrocytes. *Cells, 12, 2280. DOI: 10.3390/cells12182280*
22. Galindo C, **Livshits L,** Tarabeih L, Barshtein G, Feldman Y (2024). The Effect of Ionic Redistributions on the Microwave Dielectric Response of Cytosol Water Upon Glucose Uptake. *Eur Biophys J.* (2024). https://doi.org/10.1007/s00249-024-01708-w
23. Barshtein G, **Livshits L**, Gural A, Arbell D, Barkan R, Pajic-Lijakovic I, Yedgar S. (2024) Hemoglobin binding to the red blood cell (RBC) membrane is associated with decreased cell deformability. *Int J Mol Sci*, 24, 12755. DOI: 10.3390/ijms25115814
24. Lachover-Roth I, Peretz S, Zoabi H, Eitam H, **Livshits L**, Filon D, Levin C, Koren A (2024). Support Vector Machine-Based Formula for Detecting Suspected α Thalassemia Carriers: A Path Toward Universal Screening. *Int J Mol Sci*, 25, 6446. DOI: 10.3390/ijms25126446
25. Barshtein G, Arbell D, Gural A, **Livshits L**. Distribution of red blood cells deformability: Study on density-separated cell subpopulations. *Colloids Interfaces 2024, 8, 47.* https://doi.org/10.3390/colloids8040047
26. Latypova L, Galindo C, **Livshits L,** Teope RV, Arbell D, Barshtein G, Bogdanova A, Feldman Y. Dielectric Responses of Cytosolic Water Change with Aging of Circulating Red Blood Cells. *Cells 2025, 14(7), 486; https://doi.org/10.3390/cells14070486*
27. Petukhova, G.;Wani, A.; Barshtein, G.; Bogdanova, A.; Koren,A.; Levin, C.; **Livshits, L.** (2025) Hemoglobin A1C: Intracellular Heterogeneity and Functional Implications in Prediabetic and T2 Diabetic Erythrocytes. *Int. J. Mol. Sci.*, 26, 9890. https://doi.org/10.3390/ijms26209890
28. Koren, A., Levin, C., **Livshits, L.,** Valeri, F., Peretz, S., Raz, S., Bogdanova, A. Y., & Gassmann, M. (2026). MeMAGEN: A Phase IIa/IIb open-label trial of memantine testing safety and tolerability in sickle cell patients. HemaSphere, 10(1), e70278. *https://doi.org/10.1002/hem3.70278*

29. Aliyeva, G., Levin, C., Shirinova, A., Peretz, S., **Livshits, L.,** Koren, A., & on behalf of the International Hemoglobinopathy Research Network (INHERENT). (2026). Iron metabolism and genetic modifiers in thalassemia and sickle cell anemia. Academia Medicine and Health, 3(2). *https://doi.org/10.20935/AcadMedHealth8247*
30. **Livshits L**, Levin C, Petukhova G, Ayalon S, Sharif S, Koren A. Comparison of Red Blood Cell Features in Israeli Circassians: The Possible Effect of Residential Altitude. Rambam Maimonides Med J 2026;17 (2):e0014. doi:10.5041/RMMJ.10574

Book Chapter

Livshits L., Gural A. Receptor Expression and Function in Human Red Blood Cells. In *Handbook of Red Blood Cells* (eds. A.Y.Bogdanova, L. Kaestner). *Springer Nature Meteor* (2025, Under review).

Invited lectures

1. "Glucose-mediated changes of PKC activity in human erythrocytes" *9th Regional Medical Conference on the Treatment of Type 2 Diabetes Mellitus* (Berlin, Germany, 2009)
2. "Hemoglobin variants in health and disease- from basic science to clinical application". *The Forum of the Quality Pharmacists in Industry, The Pharmaceutical Society of Israel* (2021).
3. "Blood Cell Features as Early Prognostic Markers: From Basic Science to Possible Applications in Ruminant Husbandry" *ARO-Volcani Institute* (2023)
4. "Glucose uptake and metabolism in human red blood cells" *Russian-Armenian University, Erevan, Armenia* (2023)
5. "Glucose transport into human RBCs: From basics to the general concept of multi-level biomarker for detecting early pathological events" *Institute for Medical Research, University of Belgrade, Belgrade, Serbia* (2024)

Awards

Research award, 9th Regional Medical Conference on the Treatment of Type 2 Diabetes Mellitus, Berlin, Germany.6th-7th November 2009