

# CURRICULUM VITAE

## Arie-Lev Gruzman

**Born:** October, 3, 1970, Gorky (Nizhniy Novgorod), former USSR

### Education:

**1985 - 1988:** First Gorky nurse college (*Summa cum Laude*)

**1988 - 1991:** Medical school, Pediatric faculty, Gorky Academy for Medicine (study was not finished due to repatriation to Israel)

**1993 - 1995:** B.Sc., Chemistry, Bar-Ilan University, Ramat-Gan, Israel

**1997 - 2003:** Ph.D., Medicinal Chemistry and Pharmacology, School of Pharmacy, Faculty of Medicine, Hebrew University of Jerusalem, Israel Thesis title (*Summa cum Laude*): "Synthesis and study of mechanism of action of novel anti-hyperglycemic compounds for treatment of type 2 diabetes." Supervisors: Prof. Shlomo Sasson and Prof. Jehoshua Katzehendler.

**2004 - 2007:** Post-Doctoral Research Fellow, Biochemistry, Department of Physiology, Medical School, University of California, San Francisco and Research Institute of Pacific Medical Center at San Francisco, U.S.A. Supervisor: Prof. Vishvanath Lingappa

### Positions

**2007-2009:** Head of the project (Development of new antidiabetic drug), Yissum Technology transfer company of Hebrew University of Jerusalem, Jerusalem.

**2009 - 2016:** Senior Lecturer, Department of Chemistry, Bar-Ilan University, Ramat-Gan, Israel.

**2016-present:** Associate Professor, Department of Chemistry, Bar-Ilan University, Ramat-Gan, Israel.

### Awards and fellowships

**2023.** Rector Award "Outstanding Researcher". Bar-Ilan University, Ramat-Gan, Israel

**2016.** Rector Award "Outstanding Lecturer". Bar-Ilan University, Ramat-Gan, Israel.

**2013.** Fellowship for participation in "ALS Drug Discovery" workshop organized by American ALS association, Washington, DC, USA.

**2007.** Study fellowship, EURO Science Multidisciplinary Program: Prevention and early diagnosis of metabolic syndrome, Summer school for identification of proteins and post-translation modifications by mass spectrometry, de Duve Institute, Brussels, Belgium.

**2007.** "Faculty of 1000 Biology Award" for paper: "Common molecular signature in SOD1 for both Sporadic and Familial Amyotrophic Lateral Sclerosis. Proc Natl Acad Sci U S A, 2007, 104, 12524-12529 This paper has been selected for "Faculty of 1000 Biology" (<http://www.f1000biology.com>) "Faculty of 1000 Biology" is an award-winning online service that highlights and evaluates the most 1000 interesting papers in a year (Papers are highlighted on the basis of their scientific merit rather than the journal in which they appear) published in the biological sciences, based on the recommendations of over 2000 of the world's top researchers.

**2005.** The Best Presentation Award. Prostate Cancer Retreat, UCSF Comprehensive Cancer Centre. San Francisco, USA.

**2004.** Distinguish PhD dissertation, Faculty of Medicine, The Hebrew University of Jerusalem. Jerusalem, Israel.

**2003.** The Kaye Award for applied scientific projects. The Industrial Union of Great Britain and The Hebrew University of Jerusalem.

**2002.** Award for Excellent Tutor. Faculty of Medicine, Hebrew University of Jerusalem. Jerusalem, Israel.

**2002.** Bern-Schlender Research Award. The Diabetes Research Centre of The Hebrew University of Jerusalem, Jerusalem, Israel.

**2001.** Award for excellence in study achievements. School of Pharmacy, Faculty of Medicine, Hebrew University of Jerusalem, Jerusalem, Israel.

**1999.** Ianuka Award for excellent research, School of Pharmacy, Faculty of Medicine, Hebrew University of Jerusalem, Jerusalem, Israel.

**1999.** Second Award for excellent research in field of diabetes. The Diabetic Research Centre of The Hebrew University of Jerusalem, Jerusalem, Israel.

**1993.** Exodus award for outstanding new repatriant students. Bar-Ilan University, Ramat-Gan, Israel.

### **Supervised students: awards and fellowships**

1. Pinchas Zer Aviv, The Best Poster Award, 9<sup>th</sup> Congress of Israel Association of Medicinal Chemistry, Rehovot, Israel, **2011**.
2. Tamar Getter, "Lev Zion four years PhD fellowship for students from peripheries", **2013-2016**.
3. Shirin Kahremany, "Wolf Prize for outstanding PhD students", **2014**.
4. Sagiv Waintraub, The Best Poster Award in 6<sup>th</sup> National Student Congress of Organic Chemistry, **2014**.
5. Lena Trifonov, "Schechter Prize" for outstanding master degree students, **2015**.
6. Anna Munder, "D-cure travel grant", for participation (oral presentation) in the 23<sup>rd</sup> Annual Meeting of Italian Society of Medicinal Chemistry, Solerno, Italy, September, **2015**.
7. Efrat Shtriker, Best Poster Award. "Development of artificial islets", Bio-Organic Retreat of the Chemistry Department, Bar-Ilan University, Acco, January, **2016**.
8. Efrat Shtriker, "Schechter Prize" for outstanding master degree students, **2016**.
9. Ilana Babaev, "TEVA analytical chemistry fellowship" for outstanding ungraduated students, **2016**.
10. Salome Azulay-Ginzburg, "Best poster award", 2<sup>nd</sup> retreat of Department of Chemistry (bioorganic division), Mitzpe-Ramon, Israel, May, **2017**.
11. Ilana Babaev. "Best Poster Award", 14<sup>th</sup> Annual Meeting of the Medicinal Chemistry Section of the Israel Chemical Society (MCS-ICS), Rehovot, Israel, June, **2017**.
12. Laura Levy, "Schechter Prize" for outstanding master degree students, **2018**.
13. Eliav Blum, "Moris Banin Prize" for outstanding PhD students, **2018**.
14. Salome Azulay-Ginzburg, NAAMAT, Edelson Foundation prize for outstanding women researchers in field of chemistry and pharmacology. **2018**.
15. Salome Azulay-Ginzburg, Navon fellowship for PhD students, Israel Ministry of Science, Technology and Space. **2018**.
16. Eliav Blum. The best flash talk presentation. Fighting retinal degenerative diseases with RPE65-inhibitors. 16th Annual Meeting of The Medicinal Chemistry Section of the Israel Chemical Society (MCS-ICS). June, **2019**, Rehovot, Israel.
17. Lena Trifonov, Royall Society of Chemistry, UK. Travel fellowship to VI International Caparica Conference on Analytical Proteomics, Lisbon, Portugal, **2019**.
18. Shirin Kahremany, Post doctorate fellowship to work in peripheral Israel areas. Israel Ministry of Science, Technology and Space. **2019**.
19. Lena Trifonov, Israel Young Medicinal Chemist Award. **2020**.
20. Ayelet Rothstein, "Moris Banin Prize" for outstanding PhD students, **2023**.

## Personal research grants

1. European Foundation of Study of Diabetes (EFSD) and D-Cure Young Investigator Awards for Collaborative Diabetes Research between Israel and Europe, **2010-2012** "Rational design, synthesis and mechanism of action of novel antidiabetic ethoxybenzo-thiazol derivatives". (\$80,000).
2. DIAB. LTD (France), **2012-2013** "Rational design, synthesis and mechanism of action of novel ethoxythibenzoyl based antidiabetic compounds". (\$500,000), with Prof. S. Sasson and Prof. E. Cherasi both from HUJ.
3. Bar-Ilan University Vice President for Research internal grant, **2012**, (\$2,000)
4. Israel Ministry of Trade, Labor and Industry (MOTLI), KAMIN program, **2012-2015**, "Novel synthetic chemical chaperones as a basis for Amyotrophic Lateral Sclerosis treatment". (\$516,000), with Prof. Daniel Offen, TAU.
5. Galaxy LTD, (Israel/Panama), **2012**, "Development of novel fluorination methods for peptide labeling". (\$10,000).
6. D-cure Young Investigation award of Israel Association of Diabetes, "Development of beta cells protecting drugs". **2013**, (\$20,000)
7. Bar Ilan University-Rabin Medical Center, **2014**, "Development of new compounds for treatment of Multiple System Atrophy using nasal olfactory stem cells culture". (\$20,000), with Prof. Daniel Offen, TAU.
8. ISF. **2014-2018** "Nanotechnology-based development of novel anti-diabetic treatment". (\$282,000) with Prof. Jean-Paul Lellouche (BIU).
9. NOFAR, Israel Ministry of Trade, Labor and Industry (MOTLI). **2014-2015**, "Development of novel reagents for generating islets  $\beta$ -cells and enhancing their function based on a clustered nanoformulation of neuroligin-2 mimetics." (\$136,000)
10. Bar-Ilan University Vice President for Research internal grant, **2015**, (\$13,000)
11. Israel ministry of Trade, Labor and Industry (MOTLI), KAMIN program, **2015-2016**. "Development of novel TLR 4 inhibitors as potential cardioprotective therapeutic agents". (\$347,000), with Prof. Edith Hochhauser (Belinson Hospital, TAU).
12. Israel Ministry of Science and Technology (MOST), Scientific and Technological Cooperation between Italy and Israel. **2016-2018**. ALS research. "Development of anti-ALS drugs", with Prof. Gianluca Cestra, (IBPM, Consiglio Nazionale delle Ricerche and University of Rome La Sapienza, Rome, Italy). (\$100,000 for two years, for Israeli PI).
13. Israel Scientific Foundation (ISF) grant for the organization of the international workshop "From insulin mimetics until the artificial pancreas- comprehensive approaches in antidiabetic therapy", with Prof. Jean-Paul Lelloushe (BIU). **2017-2018**. (\$18,000).
14. Bar-Ilan Rector grant for interdisciplinary research between Bar-Ilan researchers. "Computer-based design and development of novel beta cells pioneering treatment of both types of diabetes." **2017-2018**. (\$12,000) with Prof. Jean-Paul Lelloushe, Prof. Hanoch Senderowitz, Prof. Haim Cohen and Dr. Ron Piran.
15. German-Israeli Foundation (GIF), "Understanding of the proteostasis as a basis for novel ALS treatment", **2017-2021** (200,000 Euro) with Prof. Dr. Simon Ebbinghaus

Institute of Physical and Theoretical Chemistry, Department of Life Sciences,  
Technical University Carolo Wilhelmina at Brunswick, Braunschweig, Germany.

16. NOFAR, Israel Ministry of Trade, Labor and Industry (MOTLI). **2018-2019**. A novel phenylchromane derivative increases the rate of glucose uptake in skeletal muscles and augments insulin secretion from pancreatic beta-cells. (\$185,000) with Prof. Shlomo Sasson, Hebrew University of Jerusalem. Israel.
17. Israel Ministry of Science and Technology (MOST), Scientific and Technological Cooperation between Vietnam and Israel. **2021-2023**. Inhibiting the copper efflux system in Gram negative microbes by peptidomimetics as a novel approach for developing antibiotics. (\$180,000 for Israeli PI), with Dr. Nguyen Tri Nhan, the Faculty of Biology and Biotechnology, University of Science, Vietnam National University in Ho Chi Minh City, Vietnam.
18. "Hava Zingboim, LTD" cooperative supported research in ant-inflammatory effect of natural compounds. **2021**, (\$66,000).
19. Maruho, Osaka, Japan. Invested \$2,500,000 for two years (**2022-2024**) to "Silverskate Bio LTD"-the startup company that was established by BIRAD Bar-Ilan University academic knowledge transfer company. "Silverskate Bio LTD" was established solely based on the patent: Gruzman A., et al. "Novel barbituric acid based leukocyte transmigration inhibitors as drug candidates for treating inflammatory diseases, autoimmune diseases and cancer". WO2019043706A1t, that was licensed to the company by BIRAD.
20. IUPAC, Chemistry and Human Health Division (**2023-2024**) Evaluation of the recent dynamic of the medicinal chemistry projects funding in academy. (\$5,000).

### Co-PI research grants

1. ISF. **2010-2014**, "Catecholamine dependent ventricular tachycardia -novel therapies" (\$64,000) with Dr. Michael Arad, (Sheba Hospital).
2. ISF. **2010-2014**, Rational design, synthesis and mechanism of action of novel antidiabetic 1,3-dithiane derivatives. (\$36,000) with Prof. Shlomo Sasson, (HUJ).
3. Israel Ministry of Trade and Industry (MOTLI), KAMIN program, **2011-2013**, "Development of memory enhancement pill" (\$20,000) with Prof. Y. Rosenblum (Haifa University).
4. American Association for Juvenile Diabetes Research Foundation. **2014**, "Preparation of NL-2 based beta-cells enhancers for diabetes treatment" (\$10,000) with Prof. Steven Chessler, (UCI, USA)
5. BSF. **2014-2016**, "Development of novel drugs against cystic fibrosis" (\$20,000) with Prof. Hanoch Senderowitz (Bar Ilan University).
6. NIH grant. **2016**. Synthesis of chiral  $\beta$ -aminoalcohols as a retinal mimetics (\$37,000) With Prof. Krzysztof Palczewski, School of Medicine, Case Western Reserve University, Cleveland, Ohio, USA.
7. Israel Ministry of Industry. **2017-2018**. "KAMIN program". "SAM9 as a molecular target for the development of the drug candidates for treatment of skin inflammatory diseases". Sub-contractor (\$20,000), with Dr. Sarig, Department of Dermatology, Tel Aviv Sourasky Medical Center.

8. Israel Ministry of Industry. **2019-2021**. “KAMIN program”. Novel GSK3 inhibitors for treating neurodegenerative disorders. Sub-contractor (\$20,000), with Prof. Senderowitz (BIU) and Prof. Hagit Eldar (TAU).
9. National Institute for Nanotechnology, Beer Sheva, Israel. **2022**, Development of cognitive enhancers, (\$12,000) with Prof. Shira Knafo, Ben Gurion University, Beer-Sheva, Israel.
10. TUBITAK, The Scientific and Technological Research Institution of Turkey, **2023-2026**. “Investigation of the mechanistic effects of SK-119 and SH-29 pharmacological agents on the Nrf-2 pathway in an in vitro and in vivo atopic dermatitis model” (\$38,000), with Prof. Cagatay Karaaslan, Hacettepe University, Ankara, Turkey.
11. ISF. **2023-2027**, “Inhibition of TLR-4 pathway as a promising therapeutic approach against obesity induced complications in heart and kidney” (\$54,000) with Dr. Michal Herman and Prof. Edith Hochhauser, (Rabin-Belenson Hospital).
12. National Institute for Nanotechnology, Beer Sheva, Israel. **2023-25**, Development of anticancer drug candidates based on the blocking of the glucose starvation response in cancer cells. (\$60,000), with Prof. Barak Rotblat, Ben Gurion University, Beer-Sheva, Israel.

#### **Scientific administrative activity**

1. Head of organization committee of 9<sup>th</sup> congress of Israel Association of Medicinal Chemistry, **2011**, Israel
2. Elected as a Vice-President of Israel Association of Medicinal Chemistry (**2011-2015**)
3. Member of the “Organic, Bioorganic and Medicinal Chemistry panel” in BSF (**2013**).
4. Reviewer of BSF, Ministry of Technology and Science, The National Institute for Biotechnology in the Negev and ISF grants from **2015**.
5. Member of the evaluation board of UK Diabetic Association annual grants. (**2014-current**)
6. Member of the evaluation board of Italian Ministry of Health annual grants (Diabetes). (**2015-current**).
7. Member of the organizing committee of the ASMC'15 (6<sup>th</sup> International Symposium on Advances in Synthetic and Medicinal Chemistry), Tel-Aviv, Israel, November, (**2015**).
8. Member of the International board of experts of Polish Academy of Science grants (panel of diabetes research) (**2014-current**).
9. Head of the organizing committee of 6<sup>th</sup> National Student Symposium in Organic Chemistry, Bar-Ilan University, (**2014**).
10. Member of the evaluation board of Czech Republic Health Research Council, annual grants (Diabetes), (**2015-2016**) and (**2021-2021**).
11. Israel representative member in European Federation of Medicinal Chemistry (EFMC) EC & Council Meeting, Manchester, UK. 26-29/8/**2016**.
12. Member of an organization committee of 82<sup>nd</sup> Annual Congress of Israel Chemical Society, **2017**.

13. Head of the organizing committee of international congress “From insulin mimetics until the artificial pancreas- comprehensive approaches in antidiabetic therapy”. Ramat-Gan, Israel, **2018**.
14. Member of the evaluation board of Biotechnology and Biological Sciences Research Council, UK, (**2018-2019**).
15. Member of the scientific board of International Centre of Translational Eye Research, Warsaw, Poland, **2018-current**.
16. Member of the expert panel “Therapeutic approaches” of Polish Academy of Science, Krakow, Poland, **2019-current**.
17. The Field Editor (Medicinal Chemistry) of “Pharmacological Reports”, **2020-current**.
18. National Representative of the Chemistry and Human Health Division of World Chemical Organization (IUPAC) for the term **2022-2025**.
19. Member of the COST Action CA20121 “NRF-2 functions and related applications”. **2021-2025**.
20. Member of expert committee, UK MND (Motor Neurons Diseases) Association, **2022**.
21. Member of the Expert Committee for the Canadian Foundation for Innovation, **2023**.

**Reviewer for journals:**

*“Journal of Medicinal Chemistry Letters”, “The Journal of Pharmacology and Pharmacy”, “Royal Pharmaceutical Society of UK”, “Medicinal Chemistry”, “Molecules”, “Future Medicinal Chemistry”, “Medicinal Chemistry Communications” “Journal of Basic and Clinical Physiology and Pharmacology”, “European Journal of Medicinal Chemistry”, “Bioorganic and Medicinal Chemistry Letters”, “Archives of Physiology and Biochemistry”, “International Journal of Molecular Sciences”, “Combinatorial Chemistry & High Throughput Screening”, “Mini-reviews in Medicinal Chemistry”, “Current Diabetes Review”, “Molecular Biosystems”, “Journal of Medicinal Chemistry”, “Food and Function”, “ChemMedChem”, “Engineering”, Biochemical. Pharmacology”, “Helvetica Chimica Acta”, “Zeitschrift für anorganische und allgemeine Chemie”, “Journal of Biomedical Optics”, “Current Organic Chemistry”, “Journal of Inorganic Biological Chemistry”, “Chemistry Select”, “Advances in Medical Sciences”, “Current Bioactive Compounds”, “ACS Chemical Neuroscience”, “Bioorganic and Medicinal Chemistry”, “Letters of Drug Design and Development”, “ACS Applied Materials and Interfaces”, “PLOS1”, “Current Medicinal Chemistry”, “Inorganic chemistry”, “Biomedical and Environmental Sciences”, “Mendeleev Communications”, “Antioxidants”, “Journal of Cancer Therapy”, “Polycyclic Aromatic Compounds”, “Journal of Photochemistry & Photobiology, B: Biology”, “Science Translational Medicine”, “Clinical Translational Medicine”, “Molecular Genetic and Metabolism”. “Bioconjugate Chemistry”, “Materials”, “Molecular Biology Reports”, “Frontiers in Neuroscience”, “Diabetes”, “Cell Communication and Signaling”, “Experimental Lung Research”, “Medicinal Research Reviews”, Turkish Journal of Medicine” ACS Central Science”, “New Journal of Chemistry”, “Neurotherapeutics”, “Pesticide Biochemistry and Physiology”.*

### **Bar-Ilan University Administrative activity**

1. **2017.** Member of the committee for the “outstanding lecturer award”
2. **2020-2022.** Member of the committee for the “outstanding lecturer award”
3. **2023-2024.** Member of the senate committee for the bachelor degree fellowships

### **Department of Chemistry Administrative activity**

4. **2011-2013.** Member of the "culture events" committee of the department.
5. **2013.** Member of the department committee for organization the chemistry study for ultraorthodox Jewish community.
6. **2016.** Bio-Organic Retreat of the Chemistry Department, Bar-Ilan University, Akko. Member of organizing committee.
7. **2016.** Member of the department committee for establishing a mechanism of rotation in master degree studies.
8. **2017.** Head of the committee for the establishing of the National Medicinal Chemistry Teaching Laboratory for high school students (biotechnology) on the budget of the Ministry of Education.
9. **2019.** Head of the committee for the establishing a combine degree in chemistry/pharmacy between Bar-Ilan University and Hebrew University of Jerusalem.
10. **2021.** Academic adviser for the master students (the pathway without the thesis)

### **Industry activity**

1. 2005-2007. Development of inhibitors of the virus capsid assembly. Prosetta corporation, San Francisco, USA.
2. 2010-2011. Development of new synthetic route for sialic acid derivatives. VaccGuard LTD, Nes-Ziona, Israel.
3. 2013-2015. Development anticancer drugs, Promining therapeutics LTD, Nes-Ziona, Israel.
4. 2014-2015. Development of “mutations stopper”. NOVITERO LTD, Petach-Tikva, Israel.
5. 2014-2018. All related to medicinal chemistry projects. The National Institute for Biotechnology in the Negev Ltd., Beer-Sheva, Israel.
6. 2015-2016. Drug development projects in Sourasky Medical Center, Tel-Aviv.
7. 2015-2018. Development non-toxic for humans pesticides. Evogene LTD, Rehovot, Israel.
8. 2018-2022. Co-founder of “AltA-ZuZ” drug development company.
9. 2022. The technology that was developed by AltA-ZuZ was licensed to Maruho, Osaka, Japan for \$2.500.000. Maruho established a start-up company: “Silverskate Bio LTD”.
10. 2019. Drug development projects in RAMBAM MedTech Ltd., Technology Transfer company.
11. 2022. Member of the scientific board of “CureDiab”, Dusseldorf, Germany.

### **Teaching duty in Bar-Ilan University**

1. "Spectroscopy and structural determination" for 2nd year B.Sc. students (84-237), **2010-2017**.
2. "Pharmacology and metabolism of drugs" for 3rd year B.Sc. students (84-366), **2010-2017**.
3. "Advanced organic chemistry laboratory practice" for 3rd year B.Sc. students (84-305), **2010-current**.
4. "Kashrut and chemistry", Department for study of science, halacha and education (77-992-21), **2015-current**.
5. "Medicinal chemistry" 3rd year B.Sc. (84-361), **2018-current**.
6. "Molecular pharmacology as a basis for drug development" (84-845-01) for M.Sc. and PhD students. **2015-current**.
7. "Biochemistry" 3<sup>rd</sup> year B.Sc. (84-319), **2018-current**.
8. "Advanced organic chemistry" for M.Sc. and PhD students. (84-311), **2019-current**.
9. "Organic chemistry", 2<sup>nd</sup> year B.Sc. (84-206), **2022-current**.
10. "General chemistry", Civil Engineering, Ariel University, (2-4410610), **2022-current**.
11. "General Pharmacology", School of Optometry, (82-420-01), Bar-Ilan University, **2023**.

\*The average mark (according to survey) for 5 years of teaching of two frontal courses is **4.75**.

\*The maximal mark was **4.97** (out of maximal 5.0) for teaching the course number 84-237 in 2014.

#### **Teaching duty out of Bar-Ilan University**

1. "General Chemistry", Pre-Med program in English, Tel-Aviv College, **2022**.
2. "General chemistry", Civil Engineering, Ariel University, (2-4410610), **2022-current**.
3. "Analytical chemistry", Pre-Pharmacy school, Lev Technological Institute, Jerusalem. (67843), **2023-current**

Dozens of lectures were given on volunteering basis for "GIL ZAHAV" education program, upgrading qualification studies for biology and chemistry teachers, students of high schools, students from peripheral areal of Israel, "Science in the Bar".

#### **Graduated students under my supervision (M.Sc.)**

1. Omer Green, 2012
2. Naomi Rosentul, 2012
3. Bareket Daniel, 2013
4. Tamar Getter, 2013 (with Prof. Hanoch Senderowitz)
5. Shirin Kahremani, 2013 (with Prof. Hanoch Senderowitz)
6. Anna Munder, 2013
7. Ilana Zaks, 2014
8. Lena Trifonov, 2015
9. Efrtat Shriker, 2016

10. Ilana Babaev, 2018
11. Laura Levy, 2018
12. Nimrod Yosef Keshet-Levy, 2020
13. Ayelet Rothstein, 2020

#### **Graduated students under my supervision (Ph.D)**

1. Ella Meltzer-Matz, 2015
2. Pinchas Zer Aviv (with Prof. Michael Shokhen), 2016
3. Sagiv Weintraub, 2017
4. Shirin Kahremany, 2017, (with Prof. Hanoch Senderowitz)
5. Tamar Getter, 2017, (with Prof. Hanoch Senderowitz)
6. Moran Shubely, 2018
7. Anna Munder , 2018
8. Naomi Rosentul, 2018
9. Lena Trifonov, 2019
10. Efrat Shtriker, 2020
11. Salome Azulay- Ginsburg, 2021
12. Eliav Blum, 2021
13. Mikhail Tsukerman with Prof. S. Kalugin (Faculty of Chemistry and Chemical Technology, Al-Farabi Kazakh National University, Almaty, Republic of Kazakhstan), 2022.
14. Veronika Lapeshkin, 2022
15. Laura Levy-Nissim, 2023
16. Raanan Gvirtz, 2023

#### **Former post docs**

1. Dr. Ricardo-Alfredo Luna-Mora
2. Dr. Neta Uritzky
3. Dr. Miriam Naqqash
4. Dr. Veronika Lapeshkin
5. Dr. Shirin Kahremany

#### **Current members of my research group.**

1. Dr. Edward Korshin (KAMEA scientist)
2. Dr. Laura Levy-Nissim, the Lab Manager.
3. Ayelet Rothstein (PhD candidate)
4. Aviv Malka (Ms. candidate)
5. Niv Kedar (Ms. candidate)
6. Noa Hahamov (Ms. candidate)

7. Ortal Smadja (Ms. candidate)
8. Alex Korzhevsky (volunteer)
9. Dr. Yulia Shitrit (volunteer)
10. Daria Lifshitz (MASA fellowship)

## LIST OF PUBLICATIONS

### Articles

1. Dransdeld, O.; Rakatci, I.; Sasson, S.; **Gruzman, A.**; Smidtt, M.; Haussinger, D.; Eckel, J. Eicosanoids participate in the regulation of cardiac glucose transport by contribution to a rearrangement of actin cytoskeletal elements. *Biochem. J.* **2001**, 359, 4-12.
2. **Gruzman, A.**; Alpert, E.; Totary, H.; Reich, R.; Kaiser, N.; Sasson, S. A natural protective mechanism against hyperglycemia in vascular endothelial and smooth muscle cells: Role of glucose and hydroxyeicosatetraenoic acids. *Biochem. J.* **2002**, 362, 413-422.
3. Bloch-Shilderman, E.; Abu-Raya, S.; Trembovler, V.; Boshwitz, H.; **Gruzman, A.**; Linial, M.; Lazarovici, P. Pardaxin-stimulation of Phospholipases A2 and their involvement in exocytosis in PC12 cells. *J. Pharm. Exp Ther.* **2002**, 301, 953-962.
4. Krinsky, M.; Ligumsky, M.; Aptekar, L.; Shwob, U.; Goshen, G.; **Gruzman, A.**; Sasson, S.; Yedgar, S. Amelioration of TNBS-induced colon inflammation in rats by phospholipase A2 inhibitors. *Am. J. Physiol. Gastroint. Liver Physiology* **2003**, 285, G586-592.
5. **Gruzman, A.**; Hidmy, A.; Katzhendler, J.; Haj-Ihie, A.; Sasson, S. Synthesis and characterization of new and potent  $\alpha$ -Lipoic acid derivatives. *Bioorg. & Med. Chem.* **2004**, 12, 1183-1190.
6. Alpert, E.; Altman, H.; Totary, H.; **Gruzman, A.**; Barnea, D.; Barash, V.; Sasson, S. 4-hydroxy tempol-induced impairment of mitochondrial function and augmentation of glucose transport in vascular endothelial and smooth muscle. *Biochem. Pharmacol.* **2004**, 67, 1985-1995.
7. Ben Yakir, M.; **Gruzman, A.**; Alpert, E.; Sasson, S. Glucose transport regulators. *Current Medicinal Chemistry-Immunology, Endocrine & Metabolic Agents*, **2005**, 5, 519-527.
8. Alpert, E.; **Gruzman, A.**; Blejter, R.; Aharoni, P.; Weisinger, G.; Eckel, J.; King, L.; Kaiser, N.; Sasson, S. Delayed development of substrate regulation of glucose transport in vascular endothelial cells. *Diabetologia* **2005**, 48, 752-755.
9. Alpert, E.; **Gruzman, A.**; Lardi-Studler, B.; Cohen, G.; Reich, R.; Sasson, S. Cyclooxygenase-2 (PTGS2) inhibitors augment the rate of hexose transport in L6 myotubes in an insulin- and AMP alpha-independent manner. *Diabetologia* **2006**, 49, 562-70.
10. Alpert, E.; **Gruzman, A.**; Cohen, G.; Tennenbaum, T.; Sasson, S. Selective cyclooxygenase-2 (PTGS2) inhibitors stimulate hexose transport in L6 myotubes in a protein kinase delta dependent manner. *Biochem. Pharmacol.* **2007**, 73, 368-377.

11. **Gruzman, A.**; Wood, W.; Alpert, E.; Prasad, D.; Miller, R.; Rothstein, J.; Cleveland, D.; Bowser, R.; Hamilton, R.; Wood, T.; Lingappa, V., Liu, J. A common molecular signature in SOD1 for both Sporadic and Familial Amyotrophic Lateral Sclerosis. *Proc Natl Acad Sci U S A* **2007**, 104, 12524-12529
12. Cohen, G.; Riahi, Y.; Alpert, E.; **Gruzman, A.**; Sasson, S. The roles of hyperglycemia and oxidative stress in the rise and collapse of natural protective mechanism against vascular endothelial cell dysfunction in diabetes. *Arch. Physiol. Biochem.* **2007**, 113, 259-67.
13. **Gruzman, A.**; Shamni, O.; Ben Yakir, M.; Sandovski, D.; Elgart, A.; Alpert, E.; Cohen, G.; Hoffman, A.; Cerasi, E.; Katzhendler, J.; Sasson, S. Novel D-xylose derivatives stimulate muscle glucose uptake by activating AMP-activated protein kinase. *J. Med. Chem.* **2008**, 51, 8096–8108.
14. **Gruzman, A.**; Babai, G.; Sasson, S. Adenosine monophosphate-activated protein kinase (AMPK) as a target for antidiabetic drugs. *The Review of Diabetic Studies* **2009**, 6, 13-36.

**As a Principal Investigator at Bar-Ilan (Senior lecturer):**

15. Riahi, Y.; Sin-Malia, Y.; Cohen, G.; Alpert, E.; **Gruzman, A.**; Eckel, J.; Staels, B.; Guichardant, M.; Sasson, S. 4-HDN (4-hydroxydodecadienal) induces downregulation of the glucose transport system in vascular endothelial cells under hyperglycemic conditions by activating PPAR $\delta$ . *Diabetes* **2010**, 59, 808–818.
16. Liu L., Akhavan A., Lu M., **Gruzman A.**, Lingappa V., An J. and Bowser R. Carbonic anhydrase I is recognized by an SOD1 antibody upon biotinylation of human spinal cord extracts. *International Journal of Molecular Science* **2010**, 11, 4051-62.
17. **Gruzman A.**; Elgart A.; Viskind O.; Billauer H.; Dotan S.; Cohen G.; Mishani E.; Hoffman A.; Cerasi E. and Sasson S. Antihyperglycaemic activity of 2,4:3,5-dibenzylidene-D-xylose-dithioacetal in mouse models of type 1 and type 2 diabetes. *J. Cell. Mol. Med.*, **2012**, 16(3), 594-604.
18. Klein M.; Pulidindi I.; Perkas N.; Meltzer Mats E.; **Gruzman A.**; Gedanken A. Direct Production of Glucose from Glycogen under Microwave Irradiation. *Royall Society of Chemistry Advances*, **2012**, 2, 7262-7267.
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  30. **Shubely M.**, Dhanoop M., Shokhen M., Blank M., **Gruzman A.** "Development of novel drug candidate against prostate cancer." 10<sup>th</sup> Joint Meeting of Medicinal Chemistry Associations of Austria, Croatia, Czech Republic, Greece, Hungary, Italy, Poland, Slovakia and Slovenia. Dubrovnik, Croatia, July, **2017**.
  31. **Gruzman A** and Shoshan-Barmatz V. "Novel phenylpiperazine derivatives targeting mitochondria as a new treatment of neurodegenerative diseases." 11<sup>th</sup> Asian Federation of Medicinal Chemistry Symposium, Melbourne, Australia, July, **2017**.
  32. **Gruzman A** and Getter T. "The novel pyrimidine-based total inhibitors of the monocyte rolling" 42<sup>nd</sup> Congress of The Federation of the European Biochemical Societies (FEBS). Jerusalem, Israel. September, **2017**.
  33. **\*Gruzman A.** "Mimicking Neuroligin-2 (NL-2) Functions in  $\beta$ -Cells as a Novel Approach for Antidiabetic Therapy". Excellence RESOLV series, the cluster of seminars about novel approaches in comprehensive science. October, **2017**, Bochum, Germany.

#### **As an Associate Professor**

34. **\*Gruzman A.** "The chemistry of peptidomimetics". Four lectures (master class) International Summer School for PhD students. "Medicinal Chemistry and Structural Biology: Drug-Target interactions" June, **2018**, Lublin, Poland.
35. Getter T, Margalit R, Alpert G, Zilber S, Bradfield P, Kumar A, Kahremany S, Senderowitz H, Lahav R, Matthes T, Imhof B, **Gruzman A.** "Development of the novel barbituric acid-based total inhibitors of leukocyte transmigration." XXV<sup>th</sup> European Federation of Medicinal Chemistry congress, September, **2018**, Ljubljana, Slovenia. Flash oral presentation.
36. **Korshin E.**, Rozentul N, Avrahami Y, Shubely M, Levy L, Munder A, Cohen G, Cerasi E, Sasson S, **Gruzman A.** A potent antihyperglycemic cyclic dithioacetals of 2-aryl-6-formylchromanes: synthesis, in vitro and in vivo evaluation. The 28<sup>th</sup> European Colloquium on Heterocyclic Chemistry, September, **2018**, Lecce, Italy.

37. Getter T, Margalit R, Alpert G, Zilber S, Bradfield P, Kumar A, Kahremany S, Senderowitz H, Lahav R, Matthes T, Imhof B, **\*Gruzman A**. "The total inhibition of the leukocyte transmigration". IX<sup>th</sup> annual congress of Polish Medicinal Chemistry Society, September, **2018**, Lublin, Poland. Plenary lecture.
38. Getter T, Margalit R, Alpert G, Zilber S, Bradfield P, Kumar A, Kahremany S, Senderowitz H, Lahav R, Matthes T, Imhof B, **Gruzman A**. Novel barbituric acid-based total inhibitor of leukocyte transmigration" the 6<sup>th</sup> International Bio-Medical Congress (IMBMC), November, **2018**, Nicosia, Cyprus.
39. **Azulay- Ginsburg S., Gruzman A**. Development of novel chemical chaperones for the treatment of misfolded proteins related diseases. 26<sup>th</sup> Young Research Fellows Meeting of the French Medicinal Chemistry Society (SCT). February, **2019**, Paris, France.
40. **Trifonov L., Korshin E., Zhenin M., Senderowitz H., Hochhauser E., Gruzman A**. "Structurally simple, readily available peptidomimetic 1-Benzyl-5-methyl-4-(n-octylamino)pyrimidin-2(1H)-one exhibited efficient cardioprotection in a myocardial ischemia (MI) mouse model" 2<sup>nd</sup> Molecules Medicinal Chemistry Symposium (MMCS): Facing Novel Challenges in Drug Discovery. May, **2019**, Barcelona, Spain.
41. Munder A., Kahremany S., **Gruzman A**. Mimicking Neuroigin-2 (NL-2) Function in Pancreatic  $\beta$ -cells by Nanocomposites as a Novel Approach for Antidiabetic Therapy. XXXVII Biennial Meeting of the Spanish Royal Society of Chemistry, May, **2019**, Donostia-San Sebastián, Spain.
42. **Korshin E., Trifonov L., Zhenin M., Senderowitz H., Hochhauser E., Gruzman A**. "Structurally simple, readily available peptidomimetic 1-Benzyl-5-methyl-4-(n-octylamino)pyrimidin-2(1H)-one exhibited efficient cardioprotection in a myocardial ischemia (MI) mouse model" Bioheterocycles: XVIII International Conference on Heterocycles in Bioorganic Chemistry, June, **2019**, Ghent, Belgium.
43. Blum E., Jianye Z., Palczewski K., **\*Gruzman A**. Fighting retinal degenerative diseases with RPE65-inhibitors. 2<sup>nd</sup> CREATE Symposium: Physical Chemistry in Biological Systems – towards comprehensive research on eye and vision, June, **2019**, Warsaw, Poland.
44. **Blum E., Jianye Z., Palczewski K., Gruzman A**. Fighting retinal degenerative diseases with RPE65-inhibitors. 16<sup>th</sup> Annual Meeting of The Medicinal Chemistry Section of the Israel Chemical Society (MCS-ICS). June, 2019, Rehovot, Israel, Flash oral presentation.
45. **Trifonov L., Korshin E., Zhenin M., Senderowitz H., Hochhauser E., Gruzman A**. "Structurally simple, readily available peptidomimetic 1-Benzyl-5-methyl-4-(n-octylamino)pyrimidin-2(1H)-one exhibited efficient cardioprotection in a myocardial ischemia (MI) mouse model" 16<sup>th</sup> Annual Meeting of The Medicinal Chemistry Section of the Israel Chemical Society (MCS-ICS). June, **2019**, Rehovot, Israel, Flash oral presentation.
46. **Trifonov L.** and **\*Gruzman A**. "Determination of TLR-4 inhibitor mode of action by MS". The VI—International Caparica Congress on Analytical Proteomics—ICAP, July, **2019**, Lisbon, Portugal.
47. Munder A. and **Gruzman A**. Mimicking Neuroigin-2 (NL-2) Function in Pancreatic  $\beta$ -cells by Nanocomposites as a Novel Approach for Antidiabetic Therapy. 11<sup>th</sup> International Dendrimer Symposium, July, **2019**, Funchal, Madeira Island, Portugal.
48. **\*Gruzman A**. Chemistry of peptidomimetics. 6<sup>th</sup> Prague-Weizmann Summer School on Drug Discovery, September, **2019**, Prague, Czech Republic.
49. **\*Gruzman A.,** Getter T., Margalit R., Kahremany S., Lahav R., Zilber S., Bradfield P., Imhof B., Alpert E. Novel in vivo active inhibitors of leukocyte transendothelial

- migration. 2<sup>nd</sup> Conference “Chemistry of Bioactive Compounds, ChemBioActive”, October, **2019**, Saratov, Russia. (Plenary lecture)
50. **\*Gruzman A.** Novel in vivo active inhibitors of leukocyte transendothelial migration. 1<sup>st</sup> Israel Open-Screen workshop. November, Rehovot, **2019**, Israel.
  51. Getter T, Margalit R, Zilber S, Kahremany S, Hazanov N, Levy L, Blum E, Lahav R, Senderowitz H, Bradfield P, Imhof B, Alpert E and **Gruzman A.** Development of Novel Drug Candidate for Treatment of Autoimmune Diseases based on the Inhibition of Leukocyte Transendothelial Migration. The 18<sup>th</sup> Asian Chemical Congress and The 20<sup>th</sup> General Assembly of the Federation of Asian Chemical Societies, December, **2019**, Taipei, Taiwan.
  52. Munder A, Shtriker E, **Gruzman A.** Mimicking Neuroligin-2 (NL-2) Function in Pancreatic  $\beta$ -cells by Nanocomposites as a Novel Approach for Antidiabetic Therapy. 9<sup>th</sup> International Conference on Chemical and Process Engineering (ICCPE 2020), May, **2020**, Moscow, Russia. (The congress was transferred to the on-line mode due to COVID-19 pandemic).
  53. **\*Trifonov L.**, Korshin E., Zhenin M., Senderowitz H., Hochhauser E., **Gruzman A.** “Structurally simple, readily available peptidomimetic 1-Benzyl-5-methyl-4-(n-octylamino)pyrimidin-2(1H)-one exhibited efficient cardioprotection in a myocardial ischemia (MI) mouse model”, 7<sup>th</sup> EFMC (European Federation of Medicinal Chemistry) Young Medicinal Chemist Symposium, September, **2020**, Basel, Switzerland. The congress was transferred to the on-line mode due to COVID-19 pandemic).
  54. Levy L, Getter T, Margalit R, Zilber S, Kahremany S, Hazanov N, Blum E, Lahav R, Senderowitz H, Bradfield P, Imhof B, Alpert E and **Gruzman A.** Development of the novel inhibitor of the leukocyte transmigration as a drug candidate for the universal treatment of auto-immune diseases. 12<sup>th</sup> Autoimmunity Congress, December, **2020**, Athens, Greece. The congress was transferred to the on-line mode due to COVID-19 pandemic).
  55. **Gruzman A\***, Kahremany S, Cohen G. Peptidomimetics as Activators of NRF-2 COST. Zoom meeting, January, **2022**. COST Action CA20121.
  56. Levy-Nissim L, Kahremany S, Eretz-Kdosha N, Ogen-Stern N, Senderowitz H, Korshin E, Cohen G and **Gruzman A.** Computer-aided design and synthesis of novel Keap1-Nrf2 inhibitors. 18<sup>th</sup> Annual Meeting of the Medicinal Chemistry Section of the Israel Chemical Society (MCS-ICS). July, **2022**, Rehovot, Israel.
  57. **Gruzman A.** Development of the drug candidate for the treatment of auto-immune diseases. The 8<sup>th</sup> EuChemS congress, August, **2022**, Lisbon, Portugal.
  58. Getter T, Margalit R, Zilber S, Levy L, Kahremany S, Blum E, Lahav R, Bradfield P, Imhof B, Alpert E and **Gruzman A.** Development of the drug candidate for the treatment of auto-immune diseases. The 86<sup>th</sup> meeting of Israeli Chemical Society, September, **2022**, Tel-Aviv, Israel.
  59. Getter T, Margalit R, Zilber S, Levy L, Kahremany S, Blum E, Lahav R, Bradfield P, Imhof B, Alpert E and **Gruzman A.** Leukocyte transmigration blocker: a novel drug candidate for the treatment of autoimmune diseases, 27<sup>th</sup> European Federation of Medicinal Chemistry, EFMC-ISMC, September, **2022**, Nice, France.
  60. **Gruzman A.\*** Development of the drug candidate for the treatment of auto-immune diseases. Annual meeting of the Israeli Society for Physiology and Pharmacology (ISPP2022) September, **2022**, Haifa, Israel.
  61. Blum E, Zhang J, Korshin E, Palczewski K and **Gruzman A\***. Development of chiral fluorinated alkyl derivatives of retinal analog: emixustat as drug candidates for the treatment of retinal degenerative diseases. The International Scientific-Practical

conference "Georgian Scientific Pharmacy: Past and Present" dedicated to 90<sup>th</sup> anniversary of the Tbilisi State Medical University Institute of Pharmacochimistry and 135<sup>th</sup> anniversary of Academician Lovel Kutateladze (ISPC-2022). September, **2022**, Tbilisi, Georgia.

62. Levy-Nissim L., Kahremany S., Cohen G., Gruzman A.\* "NRF-2 activators in dermatology". COST Action CA20121, October, **2022**, Bucharest, Romania.
63. Getter T, Margalit R, Zilber S, Levy L, Kahremany S, Blum E, Lahav R, Bradfield P, Imhof B, Alpert E and Gruzman A.\* Inhibition of the leukocyte transmigration as a universal basis for anti-autoimmune diseases drug development. "Receptor Dynamics-Emerging Paradigms for Novel Drugs". Winter School, Israel-Bavaria, Agriculture Faculty, HUJI, November, **2022**, Rehovot, Israel.
64. Getter T, Margalit R, Zilber S, Levy L, Kahremany S, Blum E, Lahav R, Bradfield P, Imhof B, Alpert E. and Gruzman, A. Blocking of the leukocyte transmigration as a therapeutic target for the development of novel anti autoimmune diseases drug candidates. 7<sup>th</sup> International Congress in Controversies in Rheumatology and Autoimmunity, March, **2023**, Turin, Italy.
65. Gruzman A. Fischer's barbiturates and novel anti-autoimmune diseases drug candidate. The 49<sup>th</sup> IUPAC World Chemistry Congress combined with the 11<sup>th</sup> edition of CHAINS, the largest chemistry congress from the Netherlands. August, **2023**, Hague, The Netherlands.
66. Blum E, Zhang J, Korshin E, Palczewski K, Gruzman A.\*. Novel retinal based drugs. Recent Advances in Translational Eye Research (CRATER), Copernicus Science Centre, Centre for Translational Eye Research, Institute of Physical Chemistry, Polish Academy of Sciences, September, **2023**, Warsaw, Poland.

Underlined the person's name who actually delivered the lecture.

*\*Invited lecture. Without star: the presentation was selected for a lecture from the submitted abstracts.*