

## **R E S U M E**

**November-2022**

### **1. PERSONAL DETAILS**

Full Name: Raz Platy  
Identity No: 033467358  
Date of birth: 15/10/1976  
Place of birth: Israel  
Marital status: married  
Phone numbers: 0547917112  
E-mail: razpalty@technion.ac.il  
Orcid Account: 0000-0001-6238-2399

### **2. ACADEMIC DEGREES**

2009 PhD (cum laude)(Summa Cum laude), Faculty of Medicine, Ben-Gurion  
University (of the Negev), Beer-Sheva, Israel Prof. Israel Sekler  
2002 BSc , Faculty of Biology, Ben-Gurion University (of the Negev), Beer-Sheva,  
Israel

### **3. ACADEMIC APPOINTMENTS**

2017 - Present Assistant Professor, Faculty of Medicine, Technion-Israel Institute of  
Technology, Haifa, Israel  
2012 - 2016 Postdoctoral fellow, Department of Molecular and Cell Biology,  
University of California Berkeley, USA  
2010 - 2011 Postdoctoral fellow, Department of Biomolecular Sciences, Weizmann  
Institute of Science, Rehovot, Israel

### **4. PROFESSIONAL EXPERIENCE (OUTSIDE ACADEMIA)**

## **5. RESEARCH INTERESTS (BRIEFLY)**

- My research focuses on defining the mechanisms that control changes in intracellular Ca<sup>2+</sup>, primarily in immune and cancer cells, and how alterations in these processes are involved in human disease.

## **6. TEACHING EXPERIENCE**

2017 - 2019	Seminar in Medical Sciences , Lecturer , Medical school pre-clinical , Technion-Israel Institute of Technology, Haifa
2017 - 2019	Technological applications in biomedical research , Lecturer , Medical school pre-clinical , Technion-Israel Institute of Technology, Haifa
2017 - Present	Histology , Lecturer , Medical school pre-clinical , Technion-Israel Institute of Technology, Haifa
2018 - Present	Introduction to Medical Research , Lecturer , Medical school pre-clinical , Technion-Israel Institute of Technology, Haifa
2020 - Present	Applied Microscopy , Lecturer , Graduate School , Technion-Israel Institute of Technology, Haifa
2022 - Present	Calcium Signalling , Lecturer , Graduate School , Technion-Israel Institute of Technology, Haifa

## **7. ACTIVITIES**

2019 - Present	Referee for PhD dissertations outside of the Technion
----------------	---

## **8. DEPARTMENTAL ACTIVITIES**

2019 - 2021	Academic advisor for pre-clinical medical students, Technion-Israel Institute of Technology, Haifa
2019 - Present	Departmental Seminar Organiser , Technion-Israel Institute of Technology, Haifa
2019 - Present	Faculty website supervisor , Technion-Israel Institute of Technology, Haifa
2020 - 2020	Technion Robenstein fellowship Committee , Technion-Israel Institute of Technology, Haifa

## **9. PUBLIC PROFESSIONAL ACTIVITIES**

2017 - Present	Reviewer for grants , ISF, BSF, Helmholtz Association of German Research Centers, Technion-Israel Institute of Technology, Linz Institute for Technology (LIT), Austrian Science Fund (FWF)
----------------	---

2017 - Present	Reviewer for journals , Plos Biology, Nature Communications, Nature Biotechnology, Science Signaling, Cell Calcium, Journal of Molecular Biology, Cellular and Molecular Life Sciences, etc.
2020 - Present	Editorial (topic) Board, Biomolecules

## **10. MEMBERSHIP IN PROFESSIONAL SOCIETIES**

- European Calcium Society
- American Society for Biophysics
- Israel society for pharmacology and physiology

## **11. FELLOWSHIPS, AWARDS AND HONORS**

2004	ADAMS fellowship , Israel Academy Adams Fellowships Program , he Israel Academy of Sciences and Humanities
2004	Israeli Academic Association Award for excellence , Israeli Academic Association , Israeli Academic Association
2004	Kreitman Foundation excellence fellowship for graduate students , Kreitman Foundation , Ben-Gurion University (of the Negev), Beer-Sheva
2004	Rector's Award for excellence , Faculty of Medical Health Sciences , Ben-Gurion University (of the Negev), Beer-Sheva
2004	Young Scientist Award , Zinc Signals Society , Zinc Signals Society
2005	Dean's Award for excellence , Faculty of Medical Health Sciences , Ben-Gurion University (of the Negev), Beer-Sheva
2010	Clore fellowship , Clore Foundation , Weizmann Institute of Science, Rehovot
2011	Annual Retreat Prize , Department of Biological Chemistry , Weizmann Institute of Science, Rehovot
2013	American Heart Association fellowship , American Heart Association , American Heart Association
2017	Career Advancement Chair , Women's division , Technion-Israel Institute of Technology, Haifa
2017	Malat Family Foundation Award , Malat Family Foundation , Technion-Israel Institute of Technology, Haifa

## **12. GRADUATE STUDENTS**

### **Completed PhD theses**

### **Completed MSc Theses**

2020 Hadas Achildiev , The role of SARAF in regulation of calcium signals and organization of phospholipids in mammalian cells ,(**Raz Palty**)

### **PhD Theses in Progress**

2023 Ruslana Kotsofruk , The role of store operated calcium entry (SOCE) in cancer metastasis ,(**Raz Palty**)

2025 Hadas Cohen Achildiev , In-vivo regulation of store operated calcium entry by SARAF ,(**Raz Palty**)

### **MSc Theses in Progress**

2024 Rana Hasson , Mechanism of activation coupling between STIM1 and Orai1 in the cell membrane ,(**Raz Palty**)

## **13. SPONSORED LONG-TERM VISITORS AND POST-DOCTORAL ASSOCIATES**

Dr. Ronald Udasin, 2021-2022  
 Dr. Sunny Singh, 2019  
 Dr. Shai Naperstak, 2018-2019

## **14. RESEARCH GRANTS**

### **Competitive**

2018 - 2021 Israel Science Foundation (ISF), Integrated setup for electrophysiological recording and FRET/TIRF fluorescence imaging, 1,060,000 NIS , Raz Platy (PI)

2018 - 2021 The Rappaport Family Institute for Research in the Medical Sciences, Physiological aspects of cellular heterogeneity: from in vitro to in vivo and back, 540,000 USD , Raz Platy (PI), Yuval Shaked and Haguy Wolfenson (PI)

2018 - 2022 Israel Science Foundation (ISF), Regulatory Mechanisms of store operated Calcium Release-Activated Calcium Channels (CRAC), 1,340,000 NIS , Raz Platy (PI)

2020 - 2024 U.S.-Israel Binational Science Foundation (BSF)-U.S. National Science Foundation (NSF), Development of novel CRAC channel photoswitches, 1,102,549 NIS , Raz Platy (PI)

2022 - 2023 Israel Science Foundation (ISF), Calcium signaling at ER-PM contact sites - Research Workshop, 70,000 NIS , Raz Platy (PI)

## Industrial and other sources

## 15. PUBLICATIONS

### 15.1 Theses

**Raz Palty** (2010) "Molecular Cloning and Characterization of NCLX, a Novel Mitochondrial  $\text{Na}^+/\text{Ca}^{2+}$  and  $\text{Li}^+/\text{Ca}^{2+}$  Exchanger", Advisor-Israel Sekler, Ben Gurion University of the Negev.

### 15.2 Refereed papers in professional journals

1. Ehud Ohana, Dror Segal, **Raz Palty**, Dien Ton-That, Arie Moran, Stefano L. Sensi, John H. Weiss, Michal Hershfinkel and Israel Sekler. "A sodium zinc exchange mechanism is mediating extrusion of zinc in mammalian cells." JBC ,2004, 279:4278-84. (IF=5.1, Biochemistry, Cell Biology & Molecular Biology - Q1)
  2. **Raz Palty**, Ehud Ohana, Michal Hershfinkel, Micha Volokita, Vered Elgazar, Ofer Beharier, William F. Silverman, Miriam Argaman and Israel Sekler. "Lithium-calcium exchange is mediated by a distinct potassium-independent sodium-calcium exchanger." JBC ,2004, 279:25234-40. (IF=5.1, Biochemistry, Cell Biology & Molecular Biology - Q1)
  3. **Raz Palty**, Michal Hershfinkel, Oren Yagev, Drorit Saar, Ronit Barkalifa, Daniel Khananshvoli, Asher Peretz, Yoram Grossman and Israel Sekler. "Single alpha-domain constructs of the  $\text{Na}^+/\text{Ca}^{2+}$  exchanger, NCLX, oligomerize to form a functional exchanger." Biochemistry ,2006, 45:11856-66. (IF=3.1, Biochemistry - Q1)
  4. **Raz Palty**, William F. Silverman, Michal Hershfinkel, Teresa Caporale, Stefano L. Sensi, Julia Parnis, Christiane Nolte, Daniel Fishman, Varda Shoshan-Barmatz, Sharon Herrmann, Daniel Khananshvoli, and Israel Sekler. "NCLX is an essential component of mitochondrial  $\text{Na}^+/\text{Ca}^{2+}$  exchange." PNAS, 2010, 107(1):436-41. (IF=11.2, Multidisciplinary - Q1)
  5. **Raz Palty**, Adi Raveh, Ido Kaminsky, Ruth Meller and Eitan Reuveny. "SARAF Inactivates the Store Operated Calcium Entry Machinery to Prevent Excess Calcium Refilling." Cell, 2012, 149(2):425-38. (IF=41.5, Biochemistry, Genetics & Molecular Biology - Q1)
- Research Highlight: Stop refilling  $\text{Ca}^{2+}$  stores. Nat Rev Mol Cell Biol.**
6. Shashank Bharill, Zhu Fu, **Raz Palty**, and Ehud Y. Isacoff. "Stoichiometry and specific assembly of Best ion channels." PNAS, 2014, 111(17):6491-6. (IF=11.2, Multidisciplinary - Q1)
  7. **Raz Palty** and Varda Shoshan-Barmatz. "Mitochondrial  $\text{Na}^+/\text{Ca}^{2+}$  exchange assays" Cold Spring Harbor Protocols , 2014, 2014(2):202-6. (IF=1.3, Biochemistry, Cell Biology & Molecular Biology - Q2)
  8. **Raz Palty**, Cherise Stanley and Ehud Y Isacoff. "Critical role for Orai1 C-terminal and TM4 in gating of CRAC channels." Cell Research, 2015, 25 (8):963-80. 2015 (IF=25.6, Cell Biology & Molecular Biology - Q1)

9. **Raz Palty** and Ehud Y Isacoff. "Cooperative STIM1 binding to the N' and C' termini of Orai1 gates and modulates CRAC channels." JBC, 2016, 291(1):334-41. (IF=5.1, Biochemistry, Cell Biology & Molecular Biology - Q1)
10. **Raz Palty**, Zhu Fu and Ehud Y Isacoff. "Sequential steps of CRAC channel activation" Cell Reports, 2017, 19 (9), 1929-1939. (IF=9.4, Biochemistry, Cell Biology & Molecular Biology - Q1)
11. Eli J. Rogers, Reem Jada, Kinneret Schragenheim-Rozales, Megha Sah, Marisol Cortes, Matthew Florence<sup>4</sup>, Nina S. Levy, Rachel Moss, Randall S. Walikonis, **Raz Palty**, Reut Shalgi, Daniela Lichtman, Alexandra Kavushansky<sup>1</sup>, Nashaat Z. Gerges, Itamar Kahn, George K. E. Umanah and Andrew P. Levy. "An IQSEC2 mutation associated with intellectual disability and autism results in decreased surface AMPA receptors" Front. Mol. Neuroscience, 2019, doi: 10.3389. (IF=5.6, Cellular and Molecular Neuroscience & Molecular Biology - Q1)
12. Christopher R. Kimberlin, Anna Meshcheriakova, **Raz Palty**, Adi Raveh, Izhar Karbat, Eitan Reuveny and Daniel L. Minor Jr. "SARAF Luminal Domain Structure Reveals a Novel Domain-Swapped  $\beta$ -Sandwich Fold Important for SOCE Modulation" JMB. 2019, S0022-2836(19)30263-3 (IF=4.7, Molecular Biology Structural Biology - Q1)
13. Lucy N. Mekies, Danielle Regev, Binyamin Eisen, Jonatan Fernandez-Gracia, Ronen Ben Jehuda, Yuval Shemer, Polina Baskin, Rita Shulman, Irina Reiter, **Raz Palty**, Michael Arad, Eyal Gottlieb and Ofer Binah. "Depressed beta-adrenergic inotropic responsiveness and intracellular calcium handling abnormalities in Duchenne Muscular Dystrophy patients' iPSC-CMs" J Cell Mol Med. 2021 Apr;25(8):3922-3934. doi: 10.1111/jcmm.16341. Epub 2021 Feb 22. (IF=5.3, Molecular Medicine - Q1)
14. Elia Zomot, Hadas Achildiev, Inbal Dagan, Ruslana Militsin and **Raz Palty**. "Bidirectional regulation of Calcium-Release Activated Calcium (CRAC) channel by SARAF". Journal of Cell Biology, 2021 Dec 6;220(12):e202104007. doi: 10.1083/jcb.202104007. (IF=10.5, Cell Biology & Medicine - Q1)
15. Ronald Udasin, Anwasha Sil, Elia Zomot, Hadas Achildiev Cohen, Jozafina Haj, Nurit Engelmayer, Shaya Lev, Alexander M Binshtok, Yuval Shaked, Michael A Kienzler and **Raz Palty**. "Photopharmacological modulation of native CRAC channels using azoboronate photoswitches." Proc Natl Acad Sci U S A. 2022 Mar 29;119(13):e2118160119. doi: 10.1073/pnas.2118160119. Epub 2022 Mar 21.(IF=11.2, Multidisciplinary - Q1)

## Accepted (or in press) papers

## Submitted papers

## Review papers

1. **Raz Palty** and Israel Sekler. "The mitochondrial Na<sup>(+)</sup>/Ca<sup>(2+)</sup> exchanger." Cell Calcium, 2012, 52(1):9-15. (IF=6.8, Cell Biology, Molecular Biology & Physiology - Q1)
2. **Raz Palty**, Michal Hershfinkel and Israel Sekler. "Molecular identity and functional properties of the mitochondrial Na<sup>+</sup>/Ca<sup>2+</sup> exchanger." JBC, 2012, 287(38):31650-7. (IF=5.1, Biochemistry, Cell Biology & Molecular Biology - Q1)
3. Danya Ben-Hail, **Raz Palty** and Varda Shoshan-Barmatz. "Measurement of mitochondrial Ca<sup>2+</sup>

transport as mediated by VDAC1, by the Na<sup>+</sup>/Ca<sup>2+</sup> exchanger and by the Ca<sup>2+</sup> uniporter.” Cold Spring Harbor Protocols, 2014, 2014(2):161-6. (IF=1.3, Biochemistry, Cell Biology & Molecular Biology - Q2)

4. Inbal Dagan and **Raz Palty**. "Regulation of Store-Operated Ca<sup>2+</sup> Entry by SARAF" Cells, 2021 Jul 26;10(8):1887. doi: 10.3390/cells10081887. (IF=6.6, Medicine - Q1)

5. **Raz Palty**, CRACR2A associated immunodeficiency – the supporting factor takes center stage, Cell Calcium, 2022 Feb 7;103:102552. doi: 10.1016/j.ceca.2022.102552. (IF=6.8, Cell Biology, Molecular Biology & Physiology - Q1)

## 15.3 Books

### Monographs and textbooks

### Edited Books

## 15.4 Book chapters

## 15.5 Refereed papers in conference proceedings

## 15.6 Patents (granted)

Ion exchangers and methods of use thereof

Patent number: WO2011048589

Filed: 2009-10-23

Date of Patent: 2011-12-01

Inventors: Israel Sekler, Michal Hershfinkel, Yoram Yagil and **Raz Palty**

## 15.7 Research reports and other publications

## 16. CONFERENCES

### 16.1 Plenary, keynote or invited talks

#### International

1. **Raz Palty**, A molecular mechanism for Orai1 channel activation by STIM1, Cell Physics 2017, Germany, 2017. (Invited Talk)

2. **Raz Palty**, A molecular mechanism for Orai1 channel activation by STIM1, The Future of Health - From Molecules to Machines, Israel, 2017. (Invited Talk)

3. **Raz Palty**, Molecular regulation of CRAC channel activity, The 16th Chinese Biophysics Congress, China, 2018. (Invited Talk)

4. **Raz Palty**, Regulation of CRAC channel activity by SARAF, Calcium Signalling Conference, Morocco, 2019. (Invited Talk)
5. **Raz Palty**, The SOAR of STIM1 interacts with plasma membrane lipids to form ER-PM contact sites, Gordon Research Conference - Calcium Signaling, USA, 2022. (Invited Talk)

## **National**

1. **Raz Palty**, Regulation of Ca<sup>2+</sup> release-activated Ca<sup>2+</sup> channels, Annual ISPP Meeting 2019, Israel, 2019. (Invited Talk)
2. **Raz Palty**, A Dual role for SARAF in regulation of Calcium-Release Activated Calcium (CRAC) channel activity, 9th ILANIT/FISEB Conference, Israel, 2020. (Invited Talk)
3. **Raz Palty**, Molecular and optopharmacological regulation of CRAC channels, 54th Annual Meeting of the Israel Society for Microscopy, Israel, 2021. (Invited Talk)

## **16.2 Contributed Talks and Posters**

### **International Oral**

1. **Raz Palty**, Sodium dependent Ca<sup>2+</sup> or Zn<sup>2+</sup> transport is mediated by Single  $\alpha$ -domain constructs of the Na<sup>+</sup>/Ca<sup>2+</sup> exchanger, NCLX, Zinc Signals, Italy. 09-2006 .
2. **Raz Palty**, SARAF, A Novel Regulator of Store Operated Calcium Entry, Biophysical Society 56th Annual Meeting, USA. 02-2012 .
3. **Raz Palty**, Critical Role for Orai1 C-Terminal and TM4 in Gating of CRAC Channels, Gordon Research Conference - Organellar Channels & Transporters, USA. 06-2015 .

### **International Poster**

1. **Raz Palty**, Adi Raveh, Ruth Meller, Ido Kaminsky, Eitan Reuveny, SERAF, a Novel Regulator of Store Operated Calcium Entry, Biophysical Society 56th Annual Meeting, USA. 02-2012 .
2. **Raz Palty**, Cherise Stanley, Ehud Isacoff, STIM1 Binding to Both the N' and C' Termini of Orai1 is Critical for Gating of CRAC Channels, Biophysical Society 59th Annual Meeting, USA. 02-2015 .
3. **Raz Palty**, Cherise Stanley, Ehud Isacoff, Critical Role for Orai1 C-Terminal and TM4 in Gating of CRAC Channels, Gordon Research Conference - Organellar Channels & Transporters, USA. 06-2015 .
4. **Raz Palty**, Zhu Fu and Ehud Isacoff, Sequential steps of STIM1 binding and activation of the Orai, 16th FASEB Science Research Conference on Calcium and Cell Function, Portugal. 06-2016 .
5. **Raz Palty**, Zhu Fu and Ehud Isacoff, Sequential steps of STIM1 binding and activation of the Orai, Gordon Research Conference - Calcium Signaling, Italy. 06-2017 .



6. **Raz Palty**, Heterogeneity of mitochondrial  $\text{Ca}^{2+}$  signaling, FASEB Science Research Conference on Mitochondrial Biogenesis and Dynamics in Health and Disease, USA. 05-2019 .
7. Elia Zumot, Hadas Achildiev and **Raz Palty**, A dual role for SARAF in regulation of calcium-release activated calcium (CRAC) channel activity., Biophysical Society 64th Annual Meeting, USA. 02-2020 .
8. Anna Meshcheriakova, Christopher Kimberlin, **Raz Palty**, Izhar Karbat, Dan Minor and Eitan Reuveny, The Molecular Basis for SOCE Regulation by SARAF, Biophysical Society 64th Annual Meeting, USA. 02-2020 .

## National Oral

1. **Raz Palty**, Michal Hershfinkel, Oren Yagev, Drorit Saar, Ronit Barkalifa, Daniel Khananshvoli, Asher Peretz, Yoram Grossman, Israel Sekler, Single alpha-domain constructs of the  $\text{Na}^{+}/\text{Ca}^{2+}$  exchanger, NCLX, oligomerize to form a functional exchanger, Zlotowski Center for Neuroscience Annual Meeting, Israel. 01-2005 .
2. **Raz Palty**, The identification of a novel regulator for cell calcium homeostasis, Weizmann Institute - Biological Chemistry Retreat, Israel. 05-2011 .

## National Poster

1. Ruslana Militsin and **Raz Palty**, Role of STIM2 in Human Breast Cancer, Precision Medicine in the Prism of Immunology and Cancer, Israel. 09-2019 .
2. Ruslana Militsin, Hadas Achildiev, Elia Zumot, Ronald Udasin and **Raz Palty**, STIM proteins regulate a shift from mesenchymal to amoeboid cell migration in breast cancer cells , From Basic Cancer Research to Innovative Therapies, Israel. 03-2022 .

## 16.3 Participation in organizing conferences

1. Israel Society for Physiology and Pharmacology Annual Meeting 2018, Israel, 02-2018, Session Organizer and Chair .
2. Cellular and Organellar  $\text{Ca}^{2+}$  Signaling Conference, Israel, 05-2023, Organizer and Chair .

## 17. NOTES