

- PERSONAL INFORMATION

Family name, First name: Helman, Aharon

Researcher unique identifier- ORCID ID: <https://orcid.org/0000-0002-3415-154X>

Date of birth: 05 December 1977

Nationality: Israeli

URL for web site: <https://www.helmanlab.com/>

- EDUCATION

- 2007-2013 Ph.D., Faculty of Medicine, The Hebrew University of Jerusalem, Israel.
Advisor: Prof. Ze'ev Paroush
Doctoral dissertation title: RTK-dependent gene expression in *Drosophila* is mediated by phosphorylation of the corepressor Groucho.
- 2005-2007 Master, Faculty of Medicine, The Hebrew University of Jerusalem, Israel.
Advisor: Prof. Ze'ev Paroush
- 2002-2005 B.Sc., Medical Sciences, The Hebrew University of Jerusalem, Israel. *magna cum laude*.

- CURRENT POSITION

2020-present Assistant Professor, Senior Lecturer, Institute of Biochemistry, Food Science and Nutrition
The Robert H. Smith Faculty of Agriculture, Food and Environment,
The Hebrew University of Jerusalem, Israel.

- PREVIOUS POSITIONS

- 2015-2020 Postdoctoral Fellow, Department of Stem Cell and Regenerative Biology, Harvard University, USA.
Advisor: Douglas A. Melton
- 2013-2015 Postdoctoral Fellow, Faculty of Medicine, The Hebrew University of Jerusalem, Israel.
Advisor: Prof. Yuval Dor
Advisor: Prof. Ittai Ben-Porath

- FELLOWSHIPS AND AWARDS

- 2015 The EMBO Long-Term Fellowships for postdoctoral researchers - *Support excellent postdoctoral researchers in laboratories throughout Europe and the world.*
- 2015 Fulbright post-doctoral scholar award, Israel-USA (not taken) - *Awarded to a dozen post-doctoral scholars by the American government.*
- 2013 The JDRF Fellowship for postdoctoral researchers - *Awarded to promising scientists entering their professional career in the T1D research field.*

- Research Grants

2021-2026 – Studying the role of nutrient-sensing in modulating the functional plasticity of pancreatic β cells, ISF, Personal Research Grant.

2021-2024 - The effects of maternal type 1 diabetes on the embryonic development and long-term metabolic health of the offspring: a basic and interventional study, ISF-JDRF, Joint Program.

- SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS

Having joined the Hebrew University in Oct. 2020, I currently have 2 Ph.D. and 3 M.Sc. students.

- INSTITUTIONAL RESPONSIBILITIES

2020-present Member, Diabetes Research Center, Hebrew University of Jerusalem.

- SELECTED INVITED LECTURES TO INTERNATIONAL CONFERENCES

2023 ILANIT/FISEB – Selected Abstract, Eilat, Israel

2022 European Islet Study Group – Selected Abstract, Strasburg, France

2022 Israeli Endocrinology Society – Invited speaker, Jerusalem, Israel

2020 ILANIT/FISEB – Selected Abstract, Eilat, Israel

2019 Gordon Research Conference – Pancreatic Diseases, Maine, USA

2017 JPB Foundation Meeting – Joint Consortia Meeting, New York, USA

2016 Keystone Meeting – Islet Biology, Colorado, USA

2015 Islet Study Group & Beta Cell Workshop, Jerusalem, Israel

2014 ILANIT/FISEB, Eilat, Israel

- MEMBERSHIPS OF SCIENTIFIC SOCIETIES

2020-present Member, The Israeli Endocrine Society.

- PUBLICATIONS

1: Sheinboim D, Parikh S, Manich P, Markus I, Dahan S, Parikh R, Stubbs E, Cohen G, Zemser-Werner V, Bell RE, Ruiz SA, Percik R, Brenner R, Leibou S, Vaknine H, Arad G, Gerber Y, Keinan-Boker L, Shimony T, Bikovski L, Goldstein N, Constantini K, Labes S, Mordechai S, Doron H, Lonescu A, Ziv T, Nizri E, Choshen G, Eldar-Finkelman H, Tabach Y, **Helman A**, Ben-Eliyahu S, Erez N, Perlson E, Geiger T, Ben-Zvi D, Khaled M, Gepner Y, Levy C. An Exercise-Induced Metabolic Shield in Distant Organs Blocks Cancer Progression and Metastatic Dissemination. *Cancer Res.* 2022 Nov 15;82(22):4164-4178.

- 2: Cangelosi AL, Puszynska AM, Roberts JM, Armani A, Nguyen TP, Spinelli JB, Kunchok T, Wang B, Chan SH, Lewis CA, Comb WC, Bell GW, **Helman A**, Sabatini DM. Zonated leucine sensing by Sestrin-mTORC1 in the liver controls the response to dietary leucine. *Science*. 2022 Jul;377(6601):47-56.
- 3: Davis JC, Alves TC, **Helman A**, Chen JC, Kenty JH, Cardone RL, Liu DR, Kibbey RG, Melton DA. Glucose Response by Stem Cell-Derived β Cells In Vitro Is Inhibited by a Bottleneck in Glycolysis. *Cell Rep*. 2020 May 12;31(6):107623.
- 4: **Helman A**, Cangelosi AL, Davis JC, Pham Q, Rothman A, Faust AL, Straubhaar JR, Sabatini DM, Melton DA. A Nutrient-Sensing Transition at Birth Triggers Glucose-Responsive Insulin Secretion. *Cell Metabolism*. 2020 May 5;31(5):1004-1016.e5.
- 5: **Helman A**, Melton DA. A Stem Cell Approach to Cure Type 1 Diabetes. *Cold Spring Harb Perspect Biol*. 2021 Jan 4;13(1):a035741.
- 6: Alvarez-Dominguez JR, Donaghey J, Rasouli N, Kenty JHR, **Helman A**, Charlton J, Straubhaar JR, Meissner A, Melton DA. Circadian Entrainment Triggers Maturation of Human In Vitro Islets. *Cell Stem Cell*. 2020 Jan 2;26(1):108-122.e10.
- 7: Davis JC, **Helman A**, Rivera-Feliciano J, Langston CM, Engquist EN, Melton DA. Live Cell Monitoring and Enrichment of Stem Cell-Derived β Cells Using Intracellular Zinc Content as a Population Marker. *Curr Protoc Stem Cell Biol*. 2019 Dec;51(1):e99.
- 8: Garbern JC, **Helman A**, Sereda R, Sarikhani M, Ahmed A, Escalante GO, Ogurlu R, Kim SL, Zimmerman JF, Cho A, MacQueen L, Bezzerides VJ, Parker KK, Melton DA, Lee RT. Inhibition of mTOR Signaling Enhances Maturation of Cardiomyocytes Derived From Human-Induced Pluripotent Stem Cells via p53-Induced Quiescence. *Circulation*. 2020 Jan 28;141(4):285-300.
- 9: Anzi S, Stolovich-Rain M, Klochendler A, Fridlich O, **Helman A**, Paz-Sonnenfeld A, Avni-Magen N, Kaufman E, Ginzberg MB, Snider D, Ray S, Brecht M, Holmes MM, Meir K, Avivi A, Shams I, Berkowitz A, Shapiro AMJ, Glaser B, Ben-Sasson S, Kafri R, Dor Y. Postnatal Exocrine Pancreas Growth by Cellular Hypertrophy Correlates with a Shorter Lifespan in Mammals. *Dev Cell*. 2018 Jun 18;45(6):726-737.e3.
- 10: Kushnir T, Mezuman S, Bar-Cohen S, Lange R, Paroush Z, **Helman A**. Novel interplay between JNK and Egfr signaling in Drosophila dorsal closure. *PLoS Genet*. 2017 Jun 19;13(6):e1006860.
- 11: Klochendler A, Caspi I, Corem N, Moran M, Friedlich O, Elgavish S, Nevo Y, **Helman A**, Glaser B, Eden A, Itzkovitz S, Dor Y. The Genetic Program of Pancreatic β -Cell Replication In Vivo. *Diabetes*. 2016 Jul;65(7):2081-93.
- 12: **Helman A**, Klochendler A, Azazmeh N, Gabai Y, Horwitz E, Anzi S, Swisa A, Condiotti R, Granit RZ, Nevo Y, Fixler Y, Shreibman D, Zamir A, Tornovsky-Babeay S, Dai C, Glaser B, Powers AC, Shapiro AM, Magnuson MA, Dor Y, Ben-Porath I. p16(Ink4a)-induced senescence of pancreatic beta cells enhances insulin secretion. *Nature Medicine*. 2016 Apr;22(4):412-20.
- 13: Tokarsky-Amiel R, Azazmeh N, **Helman A**, Stein Y, Hassan A, Maly A, Ben-Porath I. Dynamics of senescent cell formation and retention revealed by p14ARF induction in the epidermis. *Cancer Res*. 2013 May 1;73(9):2829-39.
- 14: **Helman A**, Lim B, Andreu MJ, Kim Y, Shestkin T, Lu H, Jiménez G, Shvartsman SY, Paroush Z.

RTK signaling modulates the Dorsal gradient. *Development*. 2012 Aug;139(16):3032-9.

15: Moses C, **Helman A**, Paroush Z, Von Ohlen T. Phosphorylation of Ind by MAP kinase enhances Ind-dependent transcriptional repression. *Dev Biol*. 2011 Dec 1;360(1):208-15.

16: **Helman A**, Cinnamon E, Mezuman S, Hayouka Z, Von Ohlen T, Orian A, Jiménez G, Paroush Z. Phosphorylation of Groucho mediates RTK feedback inhibition and prolonged pathway target gene expression. *Current Biology*. 2011 Jul 12;21(13):1102-10.

17: Ajuria L, Nieva C, Winkler C, Kuo D, Samper N, Andreu MJ, **Helman A**, González-Crespo S, Paroush Z, Courey AJ, Jiménez G. Capicua DNA-binding sites are general response elements for RTK signaling in Drosophila. *Development*. 2011 Mar;138(5):915-24.

18: **Helman A**, Paroush Z. Detection of RTK pathway activation in Drosophila using anti-dpERK immunofluorescence staining. *Methods Mol Biol*. 2010;661:401-8.

19: Cinnamon E, **Helman A**, Ben-Haroush Schyr R, Orian A, Jiménez G, Paroush Z. Multiple RTK pathways downregulate Groucho-mediated repression in Drosophila embryogenesis. *Development*. 2008 Mar;135(5):829-37.

20: Revel A, **Helman A**, Koler M, Shushan A, Goldshmidt O, Zcharia E, Aingorn H, Vlodavsky I. Heparanase improves mouse embryo implantation. *Fertil Steril*. 2005 Mar;83(3):580-6.

21: Cinnamon E, Gur-Wahnon D, **Helman A**, St Johnston D, Jiménez G, Paroush Z. Capicua integrates input from two maternal systems in Drosophila terminal patterning. *EMBO J*. 2004 Nov 24;23(23):4571-82.

22: Revel A, Moshe N, **Helman A**, Safran A, Simon A, Koler M. Mouse embryos generated from frozen-thawed oocytes can successfully survive a second cryopreservation. *Hum Reprod*. 2004 Mar;19(3):666-9.