BIOGRAPHICAL SKETCH

NAME: Einat Zalckvar

POSITION TITLE: Senior Lecturer (Assistant Professor), Faculty of Life Sciences, Bar-Ilan University

EDUCATION/TRAINING

INSTITUTION AND LOCATION	DEGREE	START DATE	COMPLETION DATE	FIELD OF STUDY
Tel Aviv University, Israel	B.Sc.	10/1999	07/2002	Life Sciences
Weizmann Institute of Science, Israel	Ph.D. (Direct Track)	10/2002	09/2009	Programmed Cell Death
Weizmann Institute of Science, Israel	Postdoctoral Training	10/2009	08/2013	Transcription Regulation
Weizmann Institute of Science, Israel	Senior intern and Staff Scientist Training	09/2013	09/2023	Peroxisome Biology

A. Personal Statement

I am a cell biologist with long-standing expertise in peroxisome biology, organelle crosstalk, and systems approaches to understanding human disease. My research combines large-scale screening, cell biology, imaging, and translational collaborations to uncover how peroxisomes contribute to cellular metabolism and rare genetic disorders.

Over the past decade, I have played a leading role in establishing systematic methodologies to study peroxisomes, including mapping organelle contact sites, defining peroxisomal protein targeting rules, and expanding the known peroxisomal proteome from yeast to human cells. My work has contributed to reshaping current understanding of peroxisomes as dynamic hubs interacting with mitochondria, lipid droplets, and other organelles.

Since establishing my independent laboratory at Bar-Ilan University, my research focuses on human peroxisomal biology, rare metabolic disorders, and developing experimental platforms that bridge basic cell biology with patient-derived models. In parallel, I am actively engaged in mentoring graduate students, organizing international scientific communities in the peroxisome field, and promoting interdisciplinary research in rare diseases.

B. Positions, Scientific Appointments and Honors

Senior Lecturer, Faculty of Life Sciences, Bar-Ilan University (10/2023-present)

Institute Member, BINA - Institute of Nanotechnology and Advanced Materials, Bar-Ilan University (2026-present)

Associate Staff Scientist, Weizmann Institute of Science (2020-2023)

Assistant Staff Scientist, Weizmann Institute of Science (2016-2020)

Senior Intern, Weizmann Institute of Science (2013-2016)

Visiting Scientist, Rockefeller University, New York (2022)

Selected Honors

Maxine Singer Prize for Outstanding Staff Scientists, Weizmann Institute of Science (2020)

Weizmann Systems Biology Award (2015)

Clore Postdoctoral Fellowship (2009)

C. Contributions to Science

1. Defining organelle contact sites and peroxisome-mitochondria interactions
My work helped establish that peroxisomes form functional contact sites with mitochondria and other organelles, identifying molecular tethers and regulatory mechanisms that shape metabolic cooperation.

Selected publications:
Shai N et al., *Nat Commun*, 2018
Castro IG et al., *Trends Biochem Sci*, 2018
Cohen Y et al., *Mol BioSyst*, 2014

2. Systematic mapping of peroxisomal proteins and targeting mechanisms
I contributed to the development of systematic, proteome-wide approaches that uncovered novel peroxisomal proteins and decoding rules governing peroxisomal targeting and prioritization.

Selected publications:
Yifrach E et al., *Mol Syst Biol*, 2022
Rosenthal M et al., *PNAS*, 2020
Gabay-Maskit S et al., *J Cell Sci*, 2020

3. Translating peroxisome and lipid droplet biology to human diseases
More recently, my research has focused on applying cell biological insights to patient-derived models of rare metabolic disorders, identifying disease mechanisms and potential therapeutic avenues.

Selected publications:
Angel M et al., *Orphanet J Rare Dis*, 2025
Peer L and Dym O et al. *J Cell Sci*, 2025
Zalckvar E & Schuldiner M, *Mol Cell*, 2022

Complete list of publications:
https://pubmed.ncbi.nlm.nih.gov/?term=zalckvar&sort=jour