

Curriculum Vitae – Michal Shoshan, PhD

Education

Sept. 2008 – Jan. 2015	PhD studies (direct-track) under the supervision of Prof. Edit Y. Tshuva at the Hebrew University of Jerusalem, Israel PhD thesis title: "Mimetic Peptides of Copper Metallochaperones: Structural Characterization and Potential Treatment for Copper Homeostasis Disorders"
Oct. 2005 – July 2008	B.Sc. in Biology and Chemistry at Tel Aviv University, Israel

Employment History

Feb. 2019 - present	Group leader (<i>Ambizione</i> SNSF fellow) in Bioinorganic Chemistry at the University of Zurich, Switzerland Main focus: Development of Peptide-Based Chelating Agents for Selective Heavy Metal Detoxification
Feb. 2016 – Jan. 2019	Postdoctoral fellowship (Marie Curie IEF) with Prof. Dr. Helma Wennemers at the ETH Zurich, Switzerland Research topic: Development of Peptide-Coated Platinum Nanoparticles as Antitumor Agents
May 2015 – Jan. 2016	Postdoctoral fellowship with Prof. Edit Y. Tshuva at the Hebrew University of Jerusalem, Israel
July 2007 – July 2008	Research Assistant at the Analytic R&D, Generic division, TEVA Pharmaceuticals LTD, Israel

Mentoring and Supervision Experience

Supervised and mentored 16 students, as follows: HUJI – 1 student (1 M.Sc.), ETH – 6 students (2 B.Sc., 3 M.Sc. and 1 PhD), UZH – 9 students (5 B.Sc., 2 M.Sc. and 2 PhD).

Courses Taught

2019 (ETH)	Guest lecturer in "Chemical biology - peptides" for chemistry master students
2019 (UZH)	Guest lecturer in "Metal Ions in Life Sciences" for chemistry undergraduate and graduate students
2018 (ETH)	Teaching assistant and substitute lecturer in "Chemical biology - peptides" for chemistry master students
2010-2015 (HUJI)	Teaching assistant in "General chemistry" for medicine students (last two years as senior TA)
2010-2015 (HUJI)	Teaching assistant in "Molecular structure determination by spectra" for chemistry undergraduate students
2010-2011 (HUJI)	Lab instructor in "Organic chemistry" for biology & chemistry undergraduate students.

List of Publications

1. **Shoshan M. S.**, Li M., Vonderach T., Wennemers H., "*Functionalization of Peptide-coated Platinum Nanoparticles for Various Biological Applications*", ChemRxiv, **2019**, Preprint.
2. Ritler A., **Shoshan M. S.**, Deupi X., Wilhelm P., Schibli R., Wennemers H. and Behe M., "*Elucidating the Structure-activity Relationship of the Pentaglutamic Acid Sequence of Minigastrin with the Cholecystokinin Receptor Subtype 2*", Bioconjugate Chem., **2019**, 30, 657-666.
3. **Shoshan M. S.**, Vonderach T., Hattendorf B., and Wennemers H., "*Peptide-coated Platinum Nanoparticles with Selective Toxicity against Liver Cancer Cells*", Angew. Chem. Int. Ed., **2019**, 58, 4901-4905.

Selected as VIP, Selected as a front cover.

Highlighted at ETH

Highlighted at ÄrzteZeitung

4. Lewandowska U.,* Corra S.,* Zajackowski W.,* Ochs N. A. K.,* **Shoshan M. S.**, Tanabe J., Stappert S., Li C., Yashima E., Pisula W., Müllen K., and Wennemers H., "*Positional Isomers of Chromophore-Peptide Conjugates Self-Assemble Into Different Morphologies*", Chem. Eur. J., **2018**, 24, 1-8.
5. Corra S., **Shoshan M. S.**, Wennemers H., "*Peptide Mediated Formation of Noble Metal Nanoparticles – Controlling Size and Spatial Arrangement*", Curr. Opin. Chem. Biol., **2017**, 40, 138-144.
6. **Shoshan M. S.**,* Lehman Y.,* Goch W., Bal W., Tshuva E. Y., Metanis N., "*Selenocysteine Containing Analogues of Atx1-based Peptides Protect Cells from Copper Ions Toxicity*", Org. & Biomol. Chem., **2016**, 14, 6979-6984.
7. **Shoshan M. S.**, Tshuva E. Y., "*Effective Inhibition of ROS Cellular Production by MXCXXC-Type Peptides: Potential Therapeutic Applications in Copper Homeostasis Disorders*", Chem. Eur. J., **2016**, 22, 9077-9081.
8. **Shoshan M. S.**, Dekel N., Goch W., Danieli D., Lebendiker M., Bal W., Tshuva E. Y., "*Unbound Position II in MXCXXC Metallochaperone Model Peptides Impacts Metal Binding Mode and Reactivity: Distinct Similarities to Whole Proteins*", J. Inorg. Biochem., **2016**, 159, 29-36.
9. **Shoshan M. S.**, Shalev D. E., Tshuva E. Y., "*Structure and Coordination Determination of Peptide-metal Complexes Using 1D and 2D ¹H NMR*", J. Vis. Exp., **2013**, 82, e50747.
10. **Shoshan M. S.**, Shalev D. E., Tshuva E. Y., "*Peptide Models of Cu(I) and Zn(II) Metallochaperones: The Effect of pH on Coordination and Mechanistic Implications*", Inorg. Chem., **2013**, 52, 2993-3000.
11. **Shoshan M. S.**, Tshuva E. Y., "*The MXCXXC Class of Metallochaperone Proteins: Model Studies*", Chem. Soc. Rev., **2011**, 40, 5282-5292.
12. **Shoshan M. S.**, Shalev D. E., Adriaens W., Merckx M., Hackeng T. M., Tshuva E. Y., "*NMR Characterization of Cu(I)-Bound Peptide Model of Copper Metallochaperones: Insights on the Role of Methionine*", Chem. Commun., **2011**, 47, 6407-6409.

In preparation

1. Ochs N. A. K., **Shoshan M. S.**, Schnitzer T., Schmid S., Bäuerle B., Wennemers H., "*Amide-triazole Isosteric Substitution Induces Global Chirality Flip in Quaterthiophene Containing Self-assembled Materials*".

Awards, Prizes, Fellowships and Grants

2019	Swiss National Science Foundation <i>Spark</i> Research Grant (CHF 100,000)
2019	Best presentation award at the 6 th EFMC-YMCS meeting
2018	Nominated by the Swiss Chemical Society to represent Switzerland at the 6 th EFMC-YMCS meeting
2018	Swiss National Science Foundation <i>Ambizione</i> Research Fellowship (CHF 952,000)
2017	Larry and Barbara Field and Family Women in Science Fellowship Fund (10,000 US\$)
2016	Marie Curie Intra European Fellowship (IEF; 187,400 €)
2016	The Hebrew University fellowship for excellent women postdoctoral fellows (25,000 US\$)
2014	Travel grant from the authority for research students at The Hebrew University of Jerusalem
2014	The Hebrew University Faculty of Science Excellence in Teaching Award
2014	Best poster award at The Hebrew University of Jerusalem Science Faculty Day
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2012	Best poster award at The Hebrew University of Jerusalem Science Faculty Day
2011	The Hebrew University Faculty of Science Excellence in Teaching Award
2010	Best poster award at The Hebrew University of Jerusalem Science Faculty Day
2009	Cazali Institute scholarship

Oral Presentations

June 2020	Wroclaw, Poland	XV International Symposium on Inorganic Biochemistry Invited talk
Apr. 2020	Liverpool, UK	Liverpool – Romark Medicinal Chemistry Symposium Invited talk
Feb. 2020	Jerusalem, Israel	Institute of Chemistry, Hebrew University, departmental seminar Invited talk
Feb. 2020	Rehovot, Israel	Faculty of Chemistry, Weizmann Institute, departmental seminar Invited talk
Dec. 2019	Jerusalem, Israel	School of Pharmacy, Hebrew University of Jerusalem, departmental seminar Invited talk
Nov. 2019	Tel Aviv, Israel	School of Chemistry, Tel Aviv University, departmental seminar Invited talk
Sept. 2019	Athens, Greece	6 th Young Medicinal Chemist Symposium, European Federation for Medicinal Chemistry (EFMC-YMCS 6) Invited talk, best presentation award
July 2019	Zurich, Switzerland	16 th Annual Doktorandentag of the Department of Chemistry at UZH. Keynote talk
Dec. 2018	Singapore	9 th Asian Biological Inorganic Chemistry Conference (AsBIC 9)
Sept. 2018	Lausanne, Switzerland	The 2018 Fall Meeting of the Swiss Chemical Society
Aug. 2018	Birmingham, UK	14 th European Biological Inorganic Chemistry Conference (EuroBIC 14)
July 2013	Jerusalem, Israel	2 nd Inorganic Chemistry Conference (EuCheMS)
Jan. 2013	Haifa, Israel	6 th Schulich Graduate Student Symposium at the Technion

Selected Poster Presentations

Nov. 2018	Berlin, Germany	<i>"Peptide-Stabilized Platinum Nanoparticles Selectively Attack Liver Cancer Cells"</i> , the 8 th Peptide Engineering Meeting
June 2014	New Hampshire, USA	<i>"Mimetic Peptide-Based Compounds as a Potential Treatment for Copper Homeostasis Disorders"</i> , Gordon Research Conferences – Metals in Medicine, selected for slam presentation
May 2014	Jerusalem, Israel	<i>"Mimetic Peptide-Based Compounds as a Potential Treatment for Copper Homeostasis Disorders"</i> , The Hebrew University of Jerusalem Science Faculty Day, best poster award
July 2013	Grenoble, France	<i>"Copper-Travel in The Cell: A Modeling Approach to Understand a Metallochaperone Transport Mechanism"</i> , The 16 th International Conference of Bioinorganic Chemistry
Feb. 2013	Tel Aviv, Israel	<i>"Cu(I) Homeostasis by Metallochaperones – Modeling Approach to Understand Binding Mechanism"</i> , The 78 rd Annual Meeting of the Israel Chemical Society
May 2012	Jerusalem, Israel	<i>"Using Peptide-based Models for Understanding Copper(I) Metallochaperone Proteins Activity and Mechanism"</i> , The Hebrew University of Jerusalem Science Faculty Day, best poster award
Dec. 2011	Barcelona, Spain	<i>"Using Peptide-based Models for Understanding Copper(I) Metallochaperone Proteins Activity and Mechanism"</i> , The 11 th International Symposium on Applied Bioinorganic Chemistry
May 2010	Jerusalem, Israel	<i>"Using small Peptides as Models for Copper(I) Metallochaperone Proteins – A tool for Metal Regulation"</i> , The Hebrew University of Jerusalem Science Faculty Day, best poster award

Outreach Activities

April 2017	Instructing High-school students during Open Lab Day (ETH Zurich)
2012-2018	Scientific magician for preschool children
2012-2014	Oral presentations for the public during Researchers' Nights (Jerusalem)
2007-2012	Preparing High-school students to the chemistry matriculation exams