University of Zurich[UZH]

TEL AVIV UNIVERSITY אוניברסיטת תל אביב

Department of Chemistry **School of Chemistry**

Ph.D. position in Medicinal Chemistry

The Shoshan group is a young research group that is currently a part of the Department of Chemistry of the University of Zurich and will move to the School of Chemistry of Tel Aviv University in autumn 2021. We are currently looking for a highly motivated and talented Ph.D. student to conduct a new, exciting, and multidisciplinary research. We combine peptide, inorganic and medicinal chemistry, as well as molecular biology, to solve current healthcare challenges by applying a broad range of techniques and skill-sets.

The project will be conducted at the University of Zurich for 12 months and will be continued at Tel Aviv University.

The Project

The development of antidotes against various toxicants that currently have no remedy is an essential field of therapeutic research. Peptides are an emerging class of antidotes, showing high potency against toxic proteins. The peptides are optimized to sequester and thereby inactivate their protein targets by directed evolution approaches that screen exclusively for binding affinity.

Preliminary results by our group revealed that peptides could also act as efficient chelating agents of toxic metals such as mercury and lead. Our primary approach to discover these peptides is based on a novel survival selection strategy as a directed evolution tool. The experimental setup allows us to explore millions of peptide sequences based on their ability to detoxify the target metal ions. At the same time, we can indirectly determine their metal selectivity and verify that the peptides themselves show no toxicity.

Inspired by the previous achievements in the field of peptide antidote, and building on our expertise on selective metal detoxification by peptides, the main goal of this project is to expand our methods towards the development of peptide-based antidotes of small molecule and peptidic toxins, as classes of compounds that were not yet investigated in terms of peptidic antidotal development.

Your Profile

If you are diligent and you have a strong scientific curiosity, you belong with us. As this project is at the interface of chemistry and biology, applicants who hold a completed Master's degree with a background in organic chemistry, molecular biology, or biochemistry are encouraged to apply. Also, candidates must possess an excellent knowledge of the English language.

Applications

For more details and to apply (including a cover letter, a CV, and two references), please contact Dr. Michal Shoshan at michal.shoshan@chem.uzh.ch.