

Post-doc and PhD Positions in Chemical Biology

A project of our laboratory, enabled by an ERC Advanced Grant, aims at developing macrocycle-based therapeutics for currently "untargetable" protein targets (<https://actu.epfl.ch/news/christian-heinis-wins-erc-advanced-grant>). We intend to achieve this goal by tapping into a new chemical space to be generated by "merging" biological and chemical compound libraries. The biological library components are ribosomally translated peptides encoded by DNA, and the chemical library components are structurally diverse chemicals, as illustrated in the figure below.

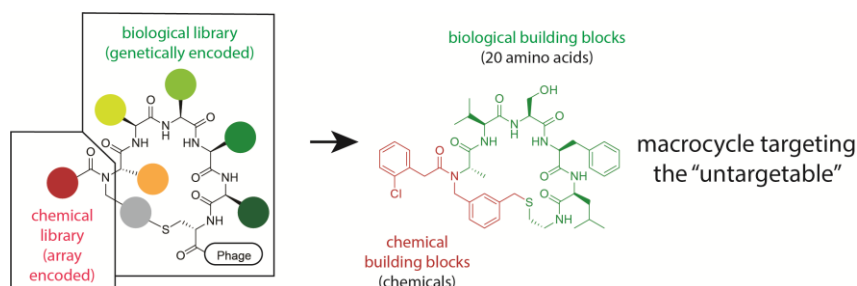
The goal of the post-doc and PhD projects is to establish the above described approach by cloning and expressing the peptide libraries, establishing chemical modification reactions to diversify the peptides with chemical fragments, automating the combinatorial working steps by robotics, and screening the libraries for ligands to challenging protein targets. The experimental work involves molecular biology techniques, synthetic chemistry, peptide synthesis, analytical techniques, lab automation and ligand characterization.

Applicants need to be highly motivated, capable to lead a project independently, and able to interact and communicate well. They should have an education in chemistry, biochemistry or a related subject. Applicants of the post-doc position should have a publication record documenting research achievements as first author. Entrance date: November 2021 - April 2022

To apply for the positions, please send a short letter of motivation, a CV and a list of references to Christian Heinis (christian.heinis@epfl.ch) and submit the application also to the EPFL doctoral program in Chemistry and Chemical Engineering (<https://www.epfl.ch/education/phd/edch-chemistry-and-chemical-engineering>).

Laboratory website: <https://www.epfl.ch/labs/lppt>

Merging biological and chemical libraries to address currently "untargetable" targets.



Literature:

1. Kale, S., et al., Science Advances, 5(8), 2019
2. Mothukuri, G. et al., Chemical Science, 2020
3. Kong, X.D., et al., Nature Biomedical Engineering, 4, 569-71, 2020

