



KEMIJSKI INŠTITUT

Vabilo na Forum40 / Invitation to the Forum40

dr. Tina Fink

D12, Department of Synthetic Biology and Immunology

Četrtek / Thursday, 10.9. 2020 ob / at 13:00

Velika predavalnica Kemijskega inštituta / Great Lecture Hall,
National Institute of Chemistry, Hajdrihova 19, Ljubljana

Design of synthetic signaling pathway in mammalian cells

Cellular signal transduction is predominantly based on protein interactions and their posttranslational modifications, which enable a fast response to input signals. Due to difficulties in designing new unique protein–protein interactions, designed cellular logic has focused on transcriptional regulation; however, this has a substantially slower response. We present a de novo design of modular, scalable signaling pathways based on proteolysis and designed coiled-coils implemented in mammalian cells. A set of split proteases with highly specific orthogonal cleavage motifs were combined with strategically positioned cleavage sites and designed orthogonal coiled-coil dimerizing domains, enabling implementation of logic functions and signaling cascades in mammalian cells.



Vljudno vabljeni / Kindly invited