Platforms for the generation and high-throughput screening of cyclic peptide libraries

Ali Tavassoli

School of Chemistry, University of Southampton, Southampton, SO17 1BJ, UK ali1@soton.ac.uk

Cyclic peptide libraries hold significant potential when deployed against challenging targets, such as protein-protein interactions. SICLOPPS is a genetically encoded platform for the rapid intracellular generation of cyclic peptide libraries of over a hundred million members. SICLOIPPS libraries can be generated in a variety of organisms (in E. coli, yeast or mammalian cells) and interfaced with a number of high-throughput assays. We have also developed a microfluidics based platform for the generation and screening of SICLOPPS libraries in fL droplets.

The use of the above approach for the identification of inhibitors of a variety of challenging targets will be discussed, including several first in class compounds. We will also discuss examples of taking the cyclic peptides hits form the above screen forward, beyond hits towards the clinic.

