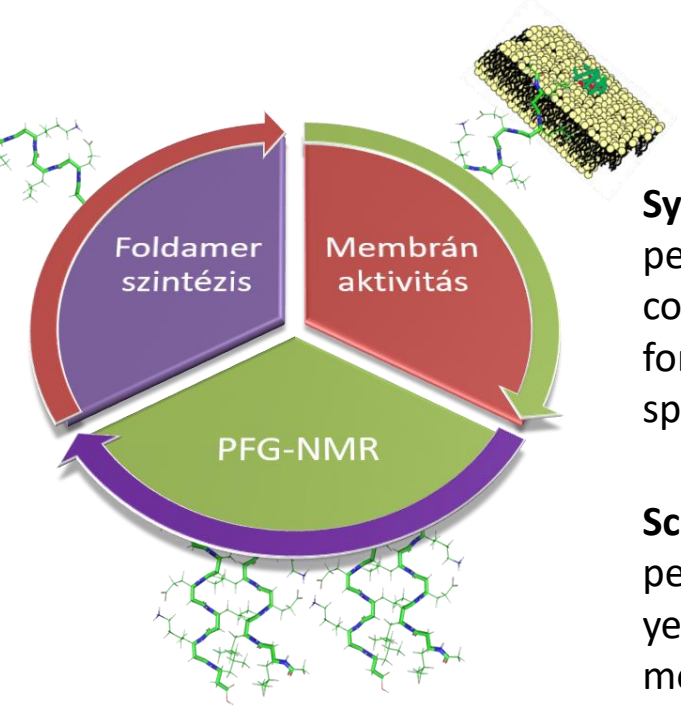
Low-nanosize foldamer oligomers for single molecule transport of hydrophobic drugs

Dr. Viktor Farkas, Research Fellow
MTA-ELTE Protein Modelling Research Group
Dr. Tamás Beke-Somfai, Senior Research Fellow
MTA TTK AKI Biomolecular Self-assembly Research Group
Dr. habil. Andrea Bodor, Associate Professor
ELTE Institute of Chemistry, Laboratory of Structural Chemistry and Biology



Synthesis / method / protocol: Initially molecular dynamic simulations will be performed. This is followed by synthesis of the compounds. Once purified, the compounds will be tested for their capacity to host the small molecules, as well as for properties in both water and in a membrane environment, using i.e NMR spectroscopy, as well as standard techniques in lipid biophysics.

Scientific Goal: On the basis of this experimental background in our present project we aim to perform a step-by-step modification of the initial foldamer sequence in order to form a small, yet dynamic inner core, which can be suitable for hosting a wider range of hydrophobic drug molecules.

Result: According to results of the MD simulations the most promising β-peptide sequence was synthetized with continuous flow peptide synthesis. Preliminary reference NMR measurements were performed on peptide oligomers with a similar size range.