Abstract

This work deals with the preparation of combinatorial libraries of peptides serving as platforms for proteolytic phenotyping. The primary objective was to prepare a solid phase fluorogenic peptide library and screen proteases by fluorescence. Further, the possibility of preparing solid phase DNA-encoded libraries was studied. Due to the non-reactivity of the specific proteases with the solid phase peptides, the solid phase was completely abandoned and DNA-encoded peptide library was prepared in the solution. Using this model of DNA-encoded dipeptide with terminal biotin, the new principle of testing proteolytic activities of proteases was verified. A combinatorial library of DNA-encoded hexapeptides was also prepared. Despite the low yield of the library, the possibility of DNA encoding, the amplifiability of the prepared molecules and the possibility of biotin-based separation were verified. The integrity of the hexapeptide sequence and the protease testing is the subject of further study.