Supramolecular surfaces for cell studies

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Figure 1: *Synthesis of GRGDS bioconjugate* **3**

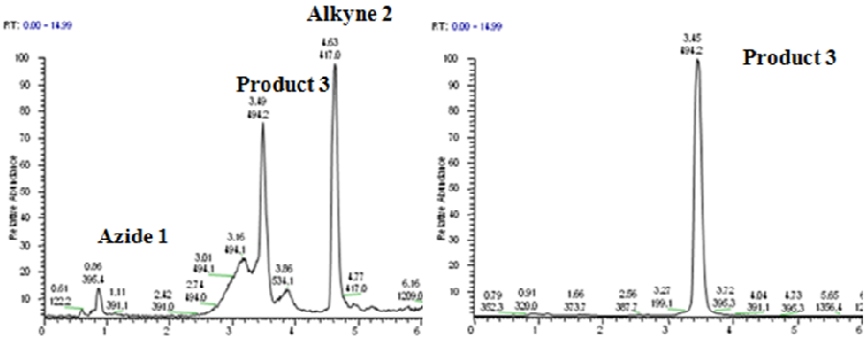

Figure 2: *LC-MS of the crude before (left) and after (right) purification by HPLC-UV.*

The need for specific, reversible and biocompatible materials for tissue engineering is growing. The development of new biomaterials using supramolecular chemistry is a promising approach: the potential reversibility of the host/guest complex (e.g. Ferrocene-Cucurbit[7]uril complex) as well as the possibility to target certain cellular receptors using specific biomolecules (e.g. the Arg-Gly-Asp peptide sequence to target $\alpha_V\beta_3$ integrins[1]) could allow the growth of cells on surfaces and application of an external stimuli for a specific cellular response.

The aims of the project are:

- to generate reversible patterned coatings via supramolecular immobilization of biomolecules[2] for controlled adhesion of endothelial cells,
- to stimulate and control cell growth and adhesion using
  - supramolecular systems
  - bioactive molecules
  - patterning
  - cell adhesion.

Below one example of reaction for the synthesis and purification of the bioconjugates that will be further tested for cell activity (results will be presented in the poster).