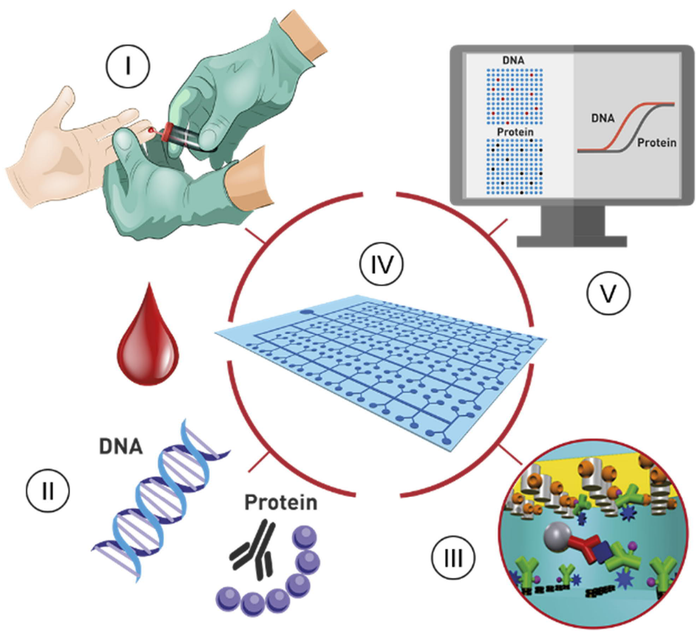
Versatile Amplification Method for Single-Molecule Detection in Liquid Biopsy – VerSiLiB

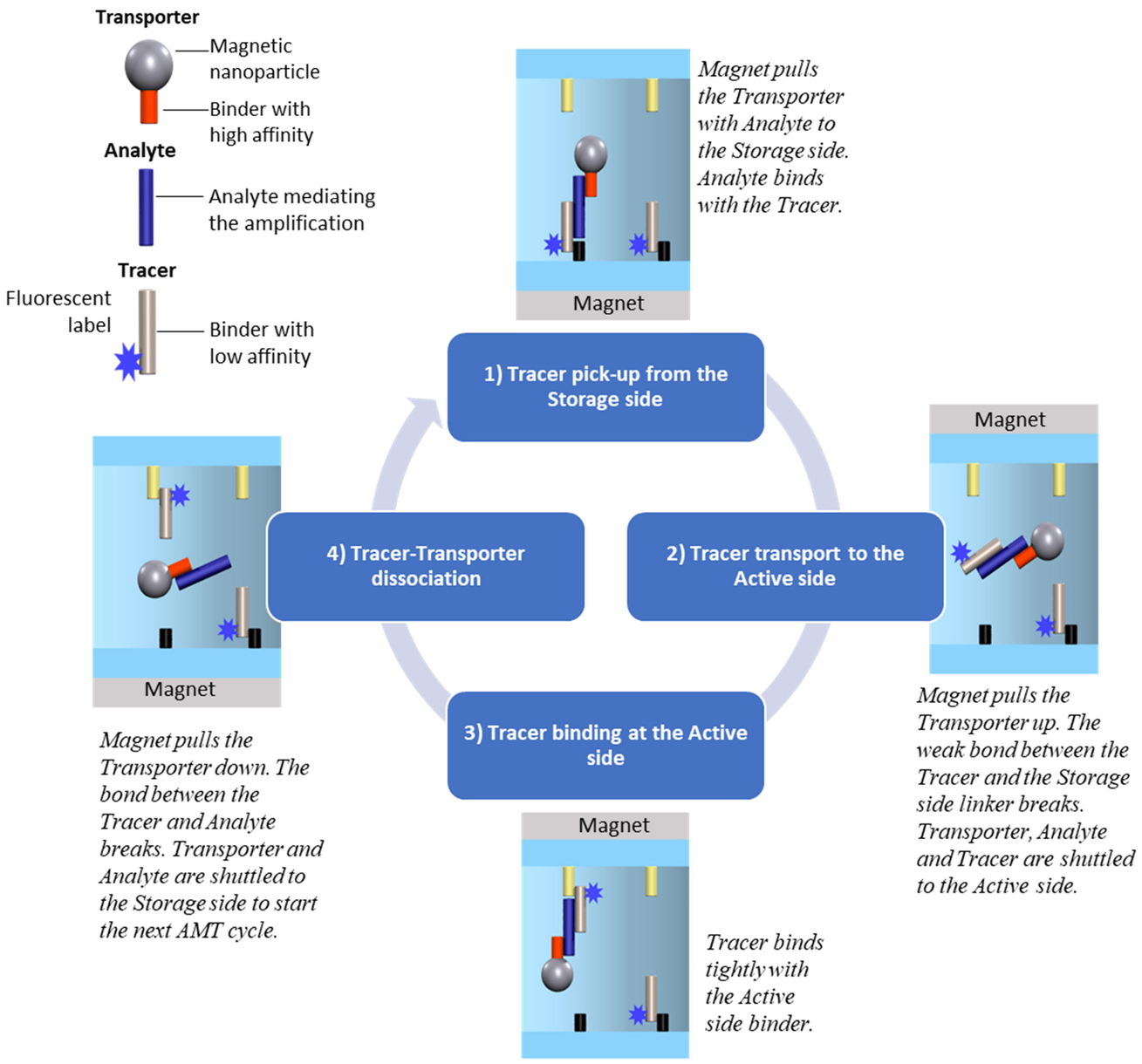
Project aims to develop a proof-of-concept of a novel in-vitro diagnostic system that combines the analysis of DNA and protein biomarkers into one proteogenomic test.

Vision is to enable robust usage of proteogenomics readout in in-vitro diagnostics to address unmet medical needs.

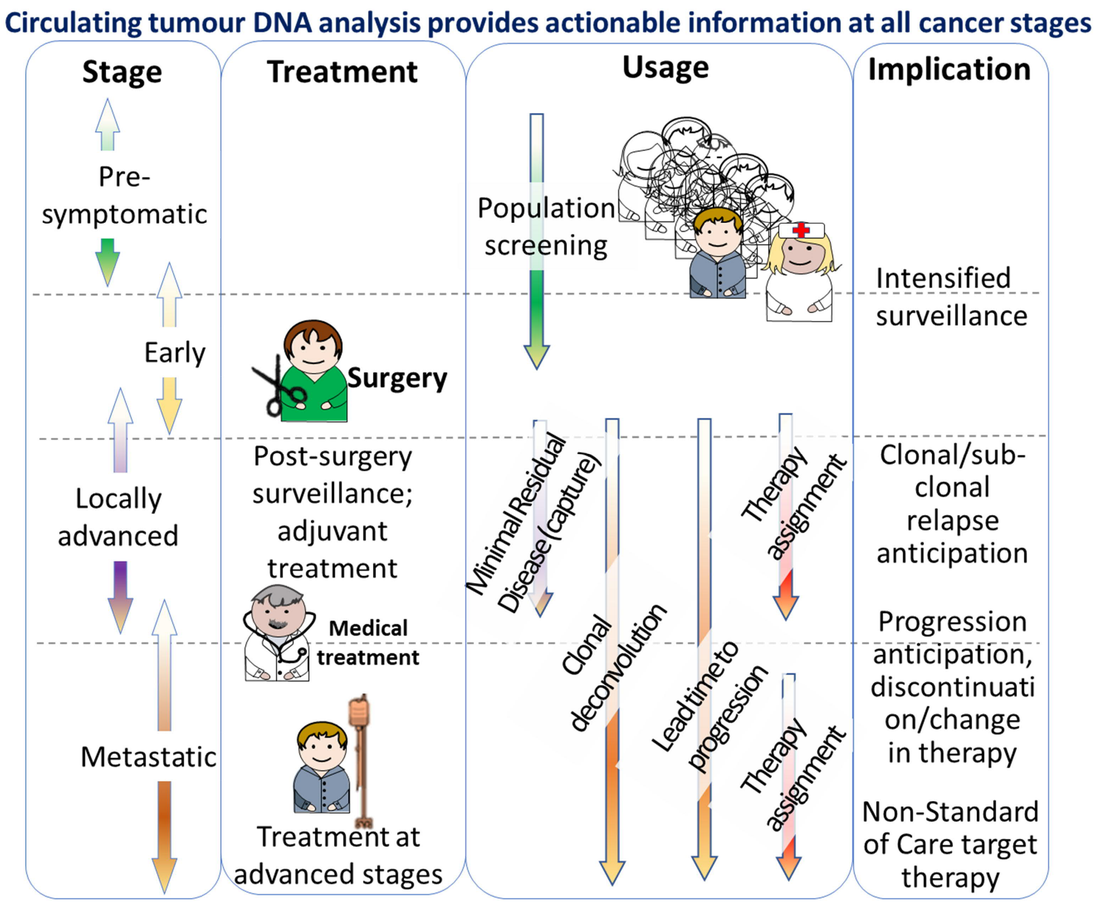


(i) Analysis of rare biomarkers in liquid biopsy, (ii) simultaneous analysis of DNA/RNA and protein content (iii) using the novel enzyme-free Affinity Mediated Transport (AMT) amplification method in (iv) low-cost opto-fluidic chips with nL-fL compartments for digital (v) readout.

Core idea is a novel enzyme-free Affinity Mediated Transport (AMT) amplification method (Patent No. FI20186055) that unifies the analysis of trace amounts of protein and DNA/RNA analytes.



Aim is to build a proof-of-concept prototype. The benefits of the technology will be validated in the clinical melanoma management using liquid biopsy samples. In oncology, liquid biopsy holds a promise to become a predictive tool that will personalize follow-up and clinical decisions.



Partners

- VTT Technical Research Centre of Finland
- Finnadvance Oy
- Procomcure GmbH
- Austrian Institute of Technology
- University of Catania
- National Cancer Institute Regina Elena
- Institute of Physics of the Czech Academy of Sciences.

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