

Lab-on-chip for precision medicine

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Today lab-on-chips (LOCs) are considered very promising devices for the future “clinical trials on chip” as well as a step forward to design personalized medicine. LOCs make possible to exploit many different technologies, materials, and functionalizations for different purposes e.g.. purification, sensing and co-culture.

In this work we have optimized the biofunctional surfaces for capturing circulating microRNAs (miRNAs), potential non-invasive cancer biomarkers, starting from a few μL biological sample. Physical, and chemical features have been optimised for these LOCs increasing the miRNA capture in the buffer sample.

This methodology and device offer a new approach to study human pathophysiology of cancer detection and they may be a valid alternative to other miRNA nano capture systems requiring expensive equipment and specialized staff.