



THE C2RT TECHNOLOGICAL SEMINARS

MicroOmiX : Enabling droplet microfluidics technologies

FROM SINGLE CELL PROTEOMICS TO SINGLE CELL SECRETOMICS

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Droplet-based microfluidics allow the reliable production of micrometer-sized incubators in which individual cells can be isolated and manipulated at high throughput rates. Such microfluidics-based technologies have been successfully interfaced with RNA-Seq enabling the analysis of cell heterogeneity at the transcriptome level. However, those technologies still suffer from serious limitations linked to the lack of efficient method for in-droplet biomarker capture and purification preventing the possibility to perform multi-omic investigations (transcriptomic/proteomic).

MicroOmiX addresses these limitations by combining two proprietary technologies:

- i) a highly efficient and robust capture system based on functional surfactant allowing the scavenging of a wide range of biomarkers;
- ii) a droplet washing technology based on an inversion process enabling the separation of captured biomarkers from contaminants and other cell remnants.

The detection of purified biomarkers can then be performed using current analyzer: a cytometer for a targeted approach (up to 30 RNA/protein biomarkers) or a sequencer for a non-targeted transcriptomic strategy combined with targeted proteomic.

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