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European Collaboration Launches Effort to Develop Lab-on-Chip for Cancer Dx

September 02, 2010

By a [GenomeWeb staff reporter](#)

NEW YORK (GenomeWeb News) – A European research team launched a new project this week that's aimed at developing lab-on-chip technology for detecting cancer cells in blood.

The project, known as the "Magnetic Isolation and Molecular Analysis of Single Circulating and Disseminated Tumor Cells on Chips," or MIRACLE, is being coordinated at Europe's Interuniversity Microelectronics Centre. Together, it includes participants from 14 European research institutions and companies. MIRACLE is largely funded through the European Commission's Seventh Framework program.

Those involved in the effort intend to develop lab-on-chip technology that can be used to track down circulating tumor cells and disseminated tumor cells in blood samples and other clinical samples — a strategy they say would offer a quick and inexpensive approach for diagnosing cancer, gauging metastasis risk, and following individuals during and after cancer treatment.

The group announced the project at the Engineering in Medicine and Biology Conference in Buenos Aires this week.

In addition to [Interuniversity Microelectronics Centre](#), participants include Universitat Rovira I Virgili (Spain); the Institut für Mikrotechnik Mainz, AdnaGen, ThinXXs, and Consultech (Germany); MRC Holland (The Netherlands); the Oslo University Hospital (Norway); the KTH Royal Institute of Technology, Multi-D, and Fujirebio Diagnostics (Sweden); ECCO - the European CanCer Organisation and ICsense (Belgium); and Labman (UK).

Some members of the collaboration participated in previous projects focused on coming up with microfluidic modules for use in related processes, ranging from cell isolation and cell counting to DNA amplification and detection.

For the MIRACLE project, the team intends to build on such past work, bringing together researchers specialized in microfluidics, miniaturization, and other fields to create a lab-on-chip platform that is not only automated but also has integrated circulating tumor cell isolating, counting, and genotyping capabilities.

For instance, the researchers reportedly hope to create a system that can be used to test messenger RNA extracted from cells in the blood for specific cancer markers using multiplex ligation dependent probe amplification combined with electrochemical sensors.

The MIRACLE project is the latest in a [series of efforts](#) focused on developing lab-on-chip technology for research and clinical purposes.

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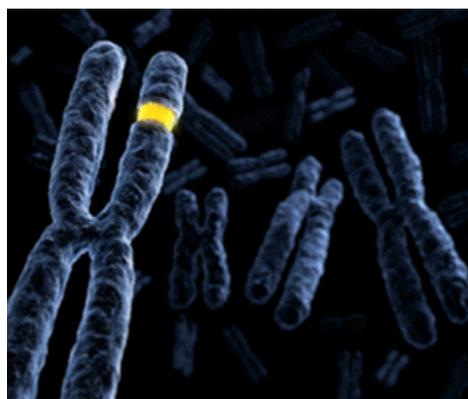
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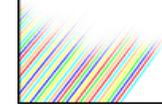
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Earlier this week, *GenomeWeb Daily News* reported that the San Diego-based microfluidics company Biocept is [pursuing its own lab-on-chip technology](#) for use in diagnostic testing based on circulating tumor cell detection.

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Polls

Should the impact scientists' work has had on the field mitigate any misconduct they might engage in?

No, misconduct is misconduct.

No, but they should be allowed to work their way back into the community's good graces.

Maybe. It depends on the type of misconduct.

Yes, if they make a full accounting of their errors and apologize.

Yes, the benefit they have has for science should outweigh their mistakes.

[View Results](#)

Science →

An international research team used a combination of Sanger and Roche 454 GS FLX Titanium sequencing to sequence a [draft of the domesticated apple genome](#) — a feat that's expected to lead to a better understanding of the biology of apples and related plants as well as improved apple varieties.

Business →

GenomeWeb Daily News talked with industry analysts about the recent IPO filings for Complete genomics and Pacific Biosciences. While the recent activity suggests that the [IPO market may be opening up](#) to the sequencing space, whether or not it will extend to the broader 'omics market is debatable.

Funding →

The University of Michigan has reeled in a [\\$7.5 million grant](#) from the National Institutes of Health to study the genetic factors involved in Clostridium difficile infections in humans. The university is one of four Cooperative Research Centers nationwide that will form the NIH-sponsored Enterics Research Investigational Network.

Genome Technology Magazine →

Many researchers are [switching over to RNA-seq from microarrays](#) for their transcriptomic studies. But RNA-seq is still a young technique and researchers are struggling to handle all the data it generates.

