

Mass. General enters collaboration to develop new approach to capturing circulating tumor cells

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Massachusetts General Hospital (MGH) has entered into a collaborative agreement with Veridex LLC to establish a center of excellence in research on circulating tumor cell (CTC) technologies. The overall goal of the agreement is to develop and commercialize novel technologies for capturing and characterizing CTCs, solid tumor cells found at extremely low levels in the bloodstream, which may offer a key to noninvasive characterization of cancer and potentially to early detection.

The collaboration will bring technology innovation experts from the MGH BioMicroElectroMechanical Systems (BioMEMS) Resource Center and molecular biologists and clinical researchers from the MGH Cancer Center together with [research and development](#) staff at Veridex, who have experience in clinical validation and regulatory clearance of novel technology, and at the Ortho Biotech [Oncology](#) R&D Unit of Johnson & Johnson Pharmaceutical Research, L.L.C., who have expertise in oncology therapeutics, biomarkers and companion diagnostics. The MGH team has already developed a microfluidic chip capable of capturing CTCs with a high rate of efficiency. However the technology now being developed with the companies is based on a new technological platform and will aim for even higher sensitivity, as well as suitability for broad applications and ready dissemination.

"This agreement is quite different from the usual academic-industrial agreement because we will be working together to bring new MGH-

invented technology from its current, very early stage, through prototype and scale-up, to our ultimate goals of FDA approval and clinical adoption," says Mehmet Toner, PhD, director of the MGH BioMEMS Resource Center. "Our innovation team will be dedicated to developing this technology from its basic scientific principles all the way to initial prototyping within the biological research and clinical environments. Veridex has the knowledge required to translate early-stage technology into a product that can be reliably manufactured and meet regulatory requirements.

"Applying data gathered from CTCs to the care of cancer patients is a complex problem, and our strategy is to diversify technological approaches to find the best solutions for specific applications," Toner adds. "We may find that different technologies work better for diagnosis, for prognosis and for the long-term goal of early detection; so we don't want to confine ourselves to a single option." His team is continuing to develop the microfluidic chip technology, with the support of Stand Up to Cancer.

Daniel Haber, MD, PhD, director of the MGH Cancer Center, says, "The ability to establish a dedicated MGH research center focused on the intersection of bioengineering, molecular biology and clinical oncology presents an opportunity to develop a next-generation platform that will help us detect, define and monitor cancer cells more effectively – which should make an enormous difference in the lives of so many patients and their families."

Provided by Massachusetts General Hospital

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