

Biography:

Dr. Amir Reza Aref is a Leader/Scientist at the Belfer Center of Applied Cancer Science, within the Dana-Farber Cancer Institute at Harvard Medical School. He made the important discovery in that it is possible to culture primary tumors in a novel 3D microfluidic system, by digesting them with collagenase and capturing spheroids that are composed of a mixture of tumor and immune cells. In addition, he has demonstrated the ability to treat these tumor spheroids with small molecule inhibitors and measure cytokine responses by collecting conditioned media from the device. This innovative technology is a major advance upon traditional 2D cell line culture and even organoid systems, which require time to establish and lack the immune microenvironment. Furthermore, it enables tumor cytokine profiling in a way not previously possible.

Prior to joining the Belfer, he was an Instructor and a research fellow in the Medical Oncology Division at Harvard Medical School, where he characterized Inhibition of KRAS-driven tumorigenicity by interruption of an autocrine cytokine circuit in lung tumorigenesis which was resulted to start a new clinical trial at DFCI under supervision of Dr. David Barbie in 2015. He has also completed his post-doctoral in the Biological Engineering Department at MIT between 2009-11.

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