



UCLA and Caltech Study Uses Technology Being Commercialized by IsoPlexis To Characterize Cancer Cells Resistant to Targeted Treatments

Research using novel single-cell detection technology being commercialized by IsoPlexis, called the Iso-Omix Chip, was highlighted in the Proceedings of the National Academy of Sciences.

Branford, Conn. (December 14, 2017)— Researchers from Caltech and UCLA used novel single-cell phosphoproteomic detection technologies, currently being commercialized by IsoPlexis Corporation (IsoPlexis), to capture and analyze cellular-level data from melanoma cells resistant to vemurafenib, a targeted therapy that inhibits oncogene BRAF, which is linked to the development and proliferation of melanoma. The data helped researchers pinpoint the cellular characteristics and pathways that allow cancer cells to develop resistance to targeted therapies, and identify improved therapy combinations.

These findings, the result of a UCLA Jonsson Comprehensive Cancer Center study, were published online in this week's *Proceedings of the National Academy of Sciences*.

IsoPlexis' newest single-cell detection technology, the Iso-Omix Chip, uses innovations developed at Caltech to detect a yet unseen number of key phosphoproteins at the single-cell level. The leap in proteins per cell allows the technology to uncover protein-signalling pathways key to the development of adaptive resistance of cancers to targeted therapies.

"IsoPlexis is excited to play a role in groundbreaking research that can improve future cancer therapeutics for patients," said Sean Mackay, IsoPlexis CEO and Co-Founder. "Like our other core technologies, the Iso-Omix Chip can capture complex cellular data at the single-cell level, helping researchers better understand the critical pathways in cancerous cells to advance more personalized treatments."

"Our single-cell proteomics technology allowed us to profile signaling pathways in melanoma cells that were both suppressed and activated via drugging. This, in turn, revealed how the cancer cells adapted and developed resistance to targeted treatments," said Dr. James Heath, a co-author of the UCLA paper and the Elizabeth W. Gilloon Professor of Chemistry at Caltech. Dr. Heath, who is also an IsoPlexis Board and Scientific Advisory Board member, added, "This new layer of information allowed us to identify improved therapy combinations, and we're optimistic that this can translate into the clinic and yield improved options for patient treatments."

The Iso-Omix Chip, used to detect many intracellular signaling proteins at the single-cell level, is currently in testing and being used in early access collaborations. The IsoCode Chip and IsoLight, IsoPlexis' existing core technologies designed to detect cellular functional responses at the single-cell level, are already being used by leading biopharmaceutical companies and academic research centers to advance the development of personalized immunotherapies.

Dr. Antoni Ribas, a co-author of the UCLA paper and the Director of the Tumor Immunology Program at the UCLA Jonsson Comprehensive Cancer Center, said, "This novel single-cell proteomics system can

capture large quantities of precise, high-quality data from individual cells.” Dr. Ribas, who is also an IsoPlexis Scientific Advisory Board member, added, “The data have real value to clinical researchers trying to develop more effective therapies that can target the pathways implicated in resistance.”

The full study is available here: <http://www.pnas.org/content/early/2017/12/05/1712064115.abstract>.

ABOUT ISOPLEXIS:

IsoPlexis, a privately held life sciences company, is developing novel technologies at the forefront of the revolution in immunity-based treatments of cancer. Using a next-generation diagnostic and therapeutic platform to identify patient responses at the single-cell level, IsoPlexis’ original scientific leaders from Yale, Caltech, UCLA, and Memorial Sloan Kettering Cancer Center have advanced understandings of personalized therapies against various cancers. IsoPlexis is venture funded by Spring Mountain Capital, North Sound Ventures, and Connecticut Innovations, as well as supported through grant funding from the National Cancer Institute and the National Institutes of Health. For additional information on IsoPlexis, visit <http://www.isoplexis.com> or email info@isoplexis.com.

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