NantHealth Announces Research Results that Advances Understanding of Tumor Treatment Resistance

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Study Published in JCI Insight *sheds light on the importance of using both transcriptomics and genomics for patient tumor interrogation to gain actionable insight*

CULVER CITY, Calif.--(BUSINESS WIRE)-- NantHealth, Inc. (NASDAQ: NH), a next-generation, evidence-based, personalized healthcare company, today announced the publication of a study in *JCI Insight*, a peer-reviewed journal dedicated to biomedical research from preclinical to clinical studies. This research looked into the discordance between genomic sequencing and transcriptome analysis, and how this may reflect a mechanism of resistance to therapy in tumors that has previously been under-recognized and should be subject to further investigation.

Next-generation sequencing (NGS) of DNA has not revealed all the mechanisms underlying resistance to genomically matched drugs. This study was designed to discover another potential mechanism. Researchers evaluated data from 1,417 tumors whole-exome tumor (somatic)/normal (germline) NGS and whole-transcriptome sequencing in order to examine transcriptomic silencing of putative driver alterations. Drivers are significant in this context, compared to passenger mutations, which are not linked to targeted drug therapies. Thus the data is particularly clinically relevant because it pertains to mutations that are commonly used to prescribe drug therapies. In this large-scale study, they also determined the frequency of tumor mutations being germline, rather than somatic, in these and an additional 462 tumors with tumor and normal exomes. They found there was a high risk of germline mutations being falsely reported as somatic. In that event, clinicians may prescribe a treatment that would actually target the normal healthy germline cells in addition to tumor cells and result in greater toxicity. In examination of a set of 50 genes highly associated with cancer and targeted therapies, at least 13% of variants detected in DNA were unexpectedly not expressed.

The research confirmed that both the frequency of silenced variant transcription and the risk of falsely identifying germline mutations as somatic are important. Therefore, transcriptomics is critical in conjunction with genomics when interrogating patient tumors for actionable alterations, and to ultimately reduce the risk of therapeutic resistance.

“Exploring another mechanism of resistance to therapy and thus helping bring about a deeper understanding around the interrogation of patients’ tumors brings with it hope and excitement for the success of future therapeutics,” said Dr. Sandeep “Bobby” Reddy, Chief Medical Officer, NantHealth. “NantHealth is dedicated to the fight against cancer, devoting much time to finding effective personalized cancer treatments. The recognition of transcriptomic silencing means that we may be giving targeted therapies to up to 13% of patients in whom the target is actually missing.”

JCI Insight publishes well-executed, high-quality, insightful research in all biomedical specialties, including autoimmunity, gastroenterology, immunology, metabolism, nephrology, neuroscience, oncology, pulmonology, vascular biology and many others. *JCI Insight* builds on the editorial leadership of the JCI, one of the oldest and most respected biomedical research journals, and is self-published by the American Society for Clinical Investigation (ASCI). *JCI Insight* serves to fulfill

the ASCI’s objective to advance medical science through the publication of clinically relevant research reports.

NantHealth is focused on using data to close the loop – connecting payers, providers, and patients. Through its software, it facilitates the delivery of precise and timely data for creating efficiency, personalized treatment, and collaboration across healthcare.

About NantHealth, Inc.

NantHealth, a member of the NantWorks ecosystem of companies, provides leading solutions across the continuum of care for physicians, payers, patients and biopharmaceutical organizations. NantHealth enables the use of cutting-edge data and technology toward the goals of empowering clinical decision support and improving patient outcomes. NantHealth’s comprehensive product portfolio combines the latest technology in payer/provider platforms that exchange information in near-real time (NaviNet and Eviti), and molecular profiling services that combine comprehensive DNA & RNA tumor-normal profiling with pharmacogenomics analysis (GPS Cancer®). For more information, please visit nanthealth.com or follow us on Twitter, Facebook and LinkedIn.

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