Thermo Fisher Scientific’s Next-Generation Sequencing Platform Selected for Nationwide Clinical Research Program

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National Cancer Institute-MATCH trial to sequence thousands of tumor samples using Ion Torrent targeted sequencing technology

CHICAGO--(BUSINESS WIRE)--ASCO 2015--Up to 1,000 patients across the United States will be enrolled in a new national oncology clinical trial using genetic sequence information obtained from Thermo Fisher Scientific’s targeted, next-generation sequencing (NGS) technology. Announced today at the American Society of Clinical Oncology (ASCO) annual meeting, the National Cancer Institute- Molecular Analysis for Therapy Choice (NCI-MATCH) program is being led in partnership with ECOG-ACRIN and has received Investigational New Drug (IND) authorization by the U.S. Federal Drug Administration (FDA).

The NCI-MATCH trial will be open to the NCI-supported National Clinical Trial Network with more than 2,400 regional facilities across the country. Supporting this study, as many as 3,000 tumor samples will be sequenced at the NCI Molecular Characterization Laboratory in Frederick, Md., The University of Texas MD Anderson Cancer Center in Houston, Boston’s Massachusetts General Hospital, and Yale University in New Haven, Conn. Each will use a standardized NGS protocol developed using Thermo Fisher’s Oncomine reagents and the Ion Torrent sequencing system.

This targeted sequencing approach, which is differentiated by its very low sample (DNA and RNA) requirement and faster turnaround time on the Ion Torrent platform, enables accurate and reliable sequence analysis across a large range of tumor sample types, including small biopsies and fine-needle aspirates.

“Clinical trials of this size and type must rely on technology that can accurately detect a wide range of infrequent gene alterations with a single assay of small amounts of DNA and cDNA from a formalin-fixed paraffin-embedded biopsy specimen or fine needle aspiration specimen,” said ECOG-ACRIN laboratory lead, Stanley R. Hamilton, M.D., head of pathology and laboratory medicine at MD Anderson. “Meeting these requirements was a key deciding factor for choosing this platform after we completed our evaluation process. These same assay requirements will often apply to enabling precision medicine.”

The targeted sequencing assay (test) includes 143 genes that were selected using the Oncomine Knowledgebase, the world’s largest collection of oncology data and a resource long trusted by pharmaceutical companies, contract research organizations (CROs) and translational research laboratories. The unique panel design also enables simultaneous sequencing of a wide range of genetic alterations, including single nucleotide variants (SNV), small insertions and deletions (indels), copy number changes, and chromosomal translocations.

Using the sequencing results, the study’s leads will assign program participants, if eligible, to one of several trial arms based on the genetic alterations associated with their tumor, rather than their type of cancer. The trial will include approximately 20 or more different drugs from multiple pharmaceutical partner companies. Multi-arm study designs like NCI-MATCH allow researchers to cast a wider net, which helps take into account relatively rare tumor mutations and helps drive the development of promising new therapies.

“A study of this scale would not be feasible using the traditional one-sample, one-biomarker testing approach,” said Mark Stevenson, executive vice president and president, Life Sciences Solutions, for Thermo Fisher. “And it is the first nationwide oncology trial of its kind that will be conducted in the spirit of President Obama’s Precision Medicine Initiative, which has the potential to transform the future of cancer care.”

Oncomine Comprehensive Assay and Ion PGM are for Research Use Only. Not intended for diagnostic procedures.

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