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Caris Life Sciences® and Fox Chase Cancer Center – Temple Health Collaborate on Potential New Treatments for Triple-Negative Breast Cancer (TNBC)

SAN ANTONIO (DECEMBER 4, 2015) – Researchers from Caris Life Sciences® and Fox Chase Cancer Center – Temple Health announced the presentation of two studies revealing the potential for exploring new therapeutic options for triple-negative breast cancer (TNBC) at the 2015 San Antonio Breast Cancer Symposium (SABCS).

Researchers used Caris Molecular Intelligence®, Caris’s panomic, comprehensive tumor profiling service, to assess biomarker profiles in subsets of patients with TNBC, an aggressive type of breast cancer in which the cancer cells lack estrogen receptor (ER), progesterone receptor (PR), and human epidermal growth factor receptor (HER2). In the studies, multiplatform tumor profiling confirmed molecular differences between rare and aggressive subsets of TNBC, which can potentially lead to new treatment options and clinical trial strategies.

“Triple-negative breast cancer remains challenging because of its aggressive and complex nature, its high rate of recurrence and propensity to become a metastatic disease, and the lack of an effective targeted therapy,” said Elias Obeid, MD, MPH, assistant professor in the Departments of Clinical Genetics and Medical Oncology at Fox Chase. “With the advancement of comprehensive molecular profiling technology and our partnership with Caris Life Sciences, our understanding of the differences in the subtypes of triple negative breast cancer is unfolding, as well as our understanding of the molecular drivers of the disease that may serve as potential targets for new therapies.”

The first study compared the biomarker profiles of patients with quadruple-negative breast cancer (QNBC) – a subgroup of TNBC that lacks androgen receptor (AR) expression – against those of patients with TNBC who are AR-positive (AR+), confirming the molecular heterogeneity of TNBC. In the second study, researchers identified differences in the molecular profiles of BRCA1/2-mutated and BRCA1/2-non-mutated TNBCs, providing insights into potential targeted treatment strategies for these tumor subtypes.

Both studies utilized Caris Molecular Intelligence’s multi-technology approach, which included protein expression analysis (immunohistochemistry [IHC]), gene copy number analysis (chromogenic or fluorescence in situ hybridization [CISH or FISH]), and gene sequencing (SEQ, using Next-Generation or Sanger sequencing).

QNBC Study Highlights (P3-07-26)
In the QNBC study, Caris and Fox Chase researchers analyzed 2,071 TNBC samples, including 1,952 that underwent AR IHC. The biomarker results suggest that for AR+ TNBC tumors, future clinical trial designs should consider fluoropyrimidines, taxanes, and agents targeting the PI3K/AKT/mTOR pathway, as well as pan-HER inhibitors, and combining those agents with anti-androgen therapies may be a viable treatment strategy. And, clinical trials for immune checkpoint inhibitors, TOPO2A inhibitors, and agents that target
cKIT and EGFR should be considered for patients with QNBC.

“Our findings highlight the molecular differences that should be considered in the design of future clinical trials involving patients with TNBC,” said lead investigator Joanne Xiu, PhD, a research scientist and molecular science liaison at Caris Life Sciences. “In particular, patterns of biomarker expression in both QNBC and AR-positive TNBC warrant further investigation for improving targeted therapy and outcomes in TNBC.”

BRCA1/2 Mutation Study Highlights (P3-07-30)
In the second study, a team of Caris and Fox Chase researchers led by David Arguello, MD, a research scientist at Caris Life Sciences, compared BRCA1/2-mutated and BRCA1/2-non-mutated TNBC specimens to identify molecular differences between these tumor subtypes, and to shed light on potential therapeutic options for each subtype. Of the 386 specimens analyzed, 63 (16.3 percent) harbored mutations in BRCA1 or BRCA2, and 323 (83.7 percent) had no detectable BRCA1/2 alterations.

About Caris Life Sciences®
Founded by David D. Halbert in 2008, Caris Life Sciences® is a leading biotechnology company focused on fulfilling the promise of precision medicine through quality and innovation. Caris Molecular Intelligence®, the company’s healthcare information and comprehensive tumor profiling service with more than 80,000 patients profiled, provides oncologists with the most clinically actionable treatment options available to personalize cancer care today. Using a variety of advanced profiling technologies to assess relevant biological changes in each patient’s tumor, Caris Molecular Intelligence connects biomarker data generated from a tumor with biomarker-drug associations supported by evidence in the relevant clinical literature. Since 2009, Caris Life Sciences has tracked clinical and outcome data for certain patients undergoing tumor profiling, and has observed that patients treated with drugs consistent with their tumor profile show a significant increase in overall survival. The company is also developing its ADAPT Biotargeting System™, a revolutionary and unbiased profiling platform with applications across therapy development, drug delivery, advanced diagnostics and disease monitoring. Currently being developed for cancer and other complex diseases, the ADAPT Biotargeting System is able to simultaneously measure millions of molecular interactions within complex biological systems in their natural state(s). Headquartered in Irving, Texas, Caris Life Sciences offers services throughout the U.S., Europe, Australia and other international markets. To learn more, please visit www.CarisLifeSciences.com.

About Fox Chase Cancer Center
Fox Chase Cancer Center, part of the Temple University Health System, is one of the leading cancer research and treatment centers in the United States. Founded in 1904 in Philadelphia as one of the nation’s first cancer hospitals, Fox Chase was also among the first institutions to be designated a National Cancer Institute Comprehensive Cancer Center in 1974. Fox Chase researchers have won the highest...
awards in their fields, including two Nobel Prizes. Fox Chase physicians are also routinely recognized in national rankings, and the Center’s nursing program has received the Magnet recognition for excellence four consecutive times. Today, Fox Chase conducts a broad array of nationally competitive basic, translational, and clinical research, with special programs in cancer prevention, detection, survivorship, and community outreach. For more information, call 1-888-FOX CHASE or (1-888-369-2427).

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