Forging an oncology collaboration

Caliper Life Sciences partners with Catholic Health Initiatives to develop improved methods for the discovery of cancer drugs

BY DAVID HUTTON

HOPKINTON, Mass.—Caliper Life Sciences Inc. has unveiled a new collaboration with Catholic Health Initiatives (CHI) of Denver in which the partners will develop methods for evaluating and predicting the effectiveness of new cancer drugs.

Under this program, the Colorado health system's Center for Translation Research (CTR) will provide fresh human tumor samples to Caliper Discovery Alliances & Services (CDAS), a Caliper unit, which will perform biomarker and standard-of-care drug resistance/sensitivity studies on these samples.

According to the partners, optimized 3D cell assays or assays performed on human tumor cells maintained in a similar tumor microenvironment under the skin of mice may provide valuable information to better predict drug efficacy in humans.

CDAS provides oncology drug discovery assays based on a variety of biological output parameters such as proliferation, viability, apoptosis or specific biomarkers applied under conventional monolayer cell culture conditions, while Caliper has a broad range of services, alliances and tools for oncology research and drug development—and the company is rapidly expanding into the biomarker and companion diagnostics segments.

This collaboration allows these testing methods to be extended to fresh tumor cells maintained under potentially more natural and disease-relevant conditions.

CDAS will grow the CTR samples under various experimental conditions, including traditional two-dimensional cell culture, three-dimensional in-vitro culture and in-vivo culture in mice, and CTR will supply key treatment history and diagnostic data for these tumor sources.

“This will include treatment history on the patient from whom the tumor samples are obtained, pathology assessment, stage of cancer, post-surgical patient follow-up data and potentially other clinical diagnostics information generated or obtained by CTR,” David Manyak, executive vice president of drug discovery services at Caliper, notes. “This contribution by CTR will complement the data collected by Caliper in our research labs to help define the optimal cancer cell growth conditions and evaluate the patterns of biomarker expression for clinical relevance.”

Jeffrey Otto, national director of CTR, says the research will begin with solid tumors, focusing on lung and colon cancers at first and progressing to other cancers as the collaboration unfolds. Otto notes that as a drug is being developed, it is important that it is tested against something that represents the in-vivo state.

“At the same time, by being able to provide molecular profiling of these particular samples that are human samples that came out of people with those cancers, we are going to be able to more tightly identify the pathways being used [and] their metabolic status, and these will help describe the population that these sorts of drugs will work in,” he adds.

Kevin Hrusovsky, president and CEO of Caliper, says that with increasing incidence of oncology drug candidates failing in late-stage clinical trials, and with rapidly expanding knowledge of clinically relevant biomarkers, it is critical to develop comprehensive and disease-relevant cancer models that can be used to guide patient stratification to improve clinical safety and efficacy.

“Taken together, our personalized medicine strategies should facilitate the development of therapeutics and companion diagnostics to ultimately improve treatment success rates,” Hrusovsky says.

Otto adds, “Partnerships such as this one are essential to our mission at the CTR to help advance personalized medicine. Drugs aren’t developed for people—they are developed, even in personalized medicine, for populations. You want to find a person who fits within that population and it appears to be a personalized therapy.”

“Fundamentally,” adds Manyak, “nobody has done anything quite like this before. We want them to be successful and through our operation. We are able to provide them with the samples so they end up with a pretty robust program. Long-term, I would like to see the collaboration expanded into other areas.”

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