

PerkinElmer, GIS open research lab to advance precision oncology

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PerkinElmer and the Genome Institute of Singapore (GIS), a biomedical sciences research institute under Singapore's Agency for Science, Technology and Research (A*STAR), has announced the opening of the PerkinElmer-GIS Centre for Precision Oncology. Leaders from PerkinElmer and GIS attended the official opening ceremony today and discussed objectives for the joint research laboratory.

The joint laboratory aims to develop a state-of-the-art high-throughput screening (HTS) platform to predict therapeutic sensitivity in next-generation patient-derived tumor models in real-time, with the ultimate goal of bringing precision oncology research results into the clinic. Specifically, the platform will utilize sequence-informed studies and HTS/HCS focused compound library screens to test the efficacy of different standard of care and pathway-specific inhibitors in 3D tumor micro-spheroid culture models derived either directly from patient primary tumors or patient-derived models (PDX).

The collaboration combines PerkinElmer's capabilities in cell-based research imaging technologies with the GIS' expertise in cancer therapeutics and stratified oncology, cancer stem cell biology and adult/embryonic stem cell biology, and regenerative medicine. The resulting research will include high throughput screening to help provide insights related to molecular mutation and aid in the development of biomarkers for patient stratification.

"Our collaboration with GIS brings together cutting-edge equipment and services along with insights from some of the world's leading cancer researchers," said Mr Brian Kim, President, Life Sciences & Technology, PerkinElmer. "PerkinElmer's integrated solutions empower researchers to reach greater insights for greater outcomes. Combined with GIS's knowledge and experience, this partnership has the potential to unlock new doors in the future of applying precision medicine to cancer treatment."

In the PerkinElmer-GIS Centre for Precision Oncology, GIS provides state-of-the-art patient-derived primary tumor cultures in 3D organoids and tumor microspheroids that mimic tumor architecture and maintain patient-specific genomic, epigenomic,

and gene expression signatures. These models can be used for developing next-generation single or combinatorial drug screens and synthetic lethal screens. PerkinElmer complements this effort by providing advanced research technology solutions including: the Operetta High Content Imaging System, Opera Phenix High Content Screening System, the FMT 4000 In Vivo Screening System, the Mantra Quantitative Pathology workstation, and the EnSpire Multimode Plate Reader, in addition to providing technical expertise for advanced high-throughput quantitative imaging and analysis.

Under this collaboration, PerkinElmer and GIS will jointly develop solutions that would integrate genomic sequencing and mutation data, with that of phenotypic data obtained in patient-derived models, as well as patient data in the clinic. These integrated solutions may help further enable translational research in oncology.

"This collaboration represents another milestone for GIS which has, over the recent few years, strategically collaborated with industry and clinical partners to spearhead and innovate research techniques in order to prioritize patient care. We are pleased to jointly open a laboratory with PerkinElmer focused on expanding GIS leadership in clinical cancer research and translational medicine," said Professor Ng Huck Hui, executive director, GIS. "On our part, GIS is committed to provide staff, equipment and reagents. We look forward to working closely with PerkinElmer, leveraging our respective strengths, in order to advance precision oncology and bring our research findings directly to patients."