Study Validates Effectiveness of KYAN Tech's Platform for Combination Therapy Prediction and Target Discovery in Sarcoma

Groundbreaking study published in npj Precision Oncology highlights Optim.AI's potential to revolutionize personalized cancer treatment strategies

SINGAPORE, SINGAPORE, March 24, 2025 /EINPresswire.com/ -- KYAN Technologies Pte. Ltd. ("KYAN") announces the publication of the study, "Functional combinatorial precision medicine for predicting and optimizing soft tissue sarcoma treatments," in npj Precision Oncology, a Nature Portfolio journal.

Led by researchers from the National Cancer Centre Singapore and National University of Singapore, the study demonstrates how QPOP, a functional precision medicine (FPM) platform also known as Optim.AI™, identifies optimal drug combinations tailored to individual patients, offering a significant leap forward in functionomics-based precision oncology.

BREAKTHROUGH IN FUNCTIONAL PRECISION MEDICINE

Soft tissue sarcomas (STS) are rare, highly heterogeneous cancers with limited effective treatment options. Given the poor efficacy of single-agent therapies and the lack of actionable mutations in STS, there is a critical need for more effective multi-drug regimens and alternatives or supplements to genomic biomarker testing.

Traditional precision oncology relies heavily on genomic sequencing to identify actionable mutations, but many cancers, including STS, lack clear genetic targets. As a result, many patients are left without effective treatment options. FPM addresses this gap by directly measuring tumor responses to therapeutic interventions in real-time, providing oncologists with empirical insights into patient-specific treatment responses beyond genetic predictions.

Optim.AI™ is the first combinatorial FPM approach with a non-iterative design that allows it to evaluate both single and multi-drug treatments with limited patient-specific data. This makes Optim.AI™ uniquely suited for STS and several other cancers, where heterogeneity in treatment response and the lack of clear genomic biomarkers limit traditional precision medicine approaches.

KEY TAKEAWAYS AND FINDINGS FROM THE STUDY:

- Personalized drug combinations were successfully identified, substantially increasing treatment efficacy compared to standard protocols.

- Actionable treatment options were provided for 88.2% of 51 primary patient samples.

- Clinical concordance analysis demonstrated a Total Predictive Value (TPV) of 77.8%, validating the accuracy and reliability of Optim.AI™ in guiding treatment decisions.

- Predictive insights beyond existing drug approvals: Optim.AI™'s phenotypic screening approach identified unexpected but effective combination therapies, helping to expand potential treatment options beyond standard-of-care regimens.

- Advancement in target discovery: The study highlighted Optim.AI™'s ability to analyze frequently recurring drug combinations across patient samples, which revealed BRD4 as a potentially effective therapeutic target across a broader range of STS subtypes.

A GAME-CHANGER FOR PRECISION ONCOLOGY AND DRUG DEVELOPMENT

“We are thrilled and thankful to our collaborators that once again, the feasibility of Optim.AI™ has been demonstrated—this time in a solid cancer setting,” said Hugo Saavedra, Chief Executive Officer of KYAN. "Optim.AI™ provides a highly valuable FPM approach by overcoming the limitations of trial-and-error combination therapies and bypassing the constraints of traditional precision medicine that rely solely on genomic biomarkers. Its ability to rapidly test and optimize multi-drug regimens in a patient-specific manner makes it an ideal tool for improving cancer treatment outcomes. By enabling oncologists to make timely, data-driven decisions, Optim.AI™ is poised to transform the landscape of functional precision medicine.”

Dr. Edward K. Chow, Chief Scientific Officer of KYAN, emphasized the platform’s value for drug discovery and translational research, stating:

"One of the most exciting aspects of Optim.AI™ is its ability to uncover frequently recurring drug combinations, providing an entirely new dimension for target discovery and mechanism-of-action studies. By comprehensively identifying patterns in drug response across patient samples, we can pinpoint novel therapeutic targets and drug-drug interaction responses that may not be evident through traditional methods. This has profound implications for drug development, as it allows researchers to explore repurposing existing drugs, optimizing clinical trial designs, and accelerating the path to new, effective cancer treatments.”

Building on its recent successes, KYAN is actively working with cancer centers and clinical researchers to expand the application of Optim.AI™, with ongoing initiatives in other hard-to-treat cancers, including multiple myeloma and HR+ and Her2+breast cancer. As part of this expansion, KYAN recently entered into an agreement with Mayo Clinic Laboratories to expand

patient testing into the U.S., marking a significant step in bringing combinatorial FPM to a wider patient base.

For more information, access the full study at https://www.nature.com/articles/s41698-025-00851-7.

ABOUT KYAN

KYAN Technologies is more than just a biotech company—it is a mission driven by personal experience and unwavering commitment. Every one of our founders has felt the profound impact of losing loved ones to cancer, and this deeply personal connection fuels our relentless pursuit of better treatments. We understand firsthand the frustration of limited treatment options and the urgency of finding solutions that truly work for patients.

Our flagship platform, Optim.AI™, was born from this mission. Combining small-data AI-driven analytics with innovative biological experimentation, Optim.AI™ empowers clinicians with personalized cancer treatment insights, bridging the gap between scientific discovery and real-world patient care. Despite the challenges of being part of a biotech startup, our team remains steadfast in our vision—to transform how cancer is treated, one patient at a time.

Optim.AI™ is clinically validated and available as a laboratory-developed test (LDT) in Singapore, Indonesia, Malaysia, and Thailand, helping oncologists deliver better, more precise therapies when it matters most.

At KYAN, this is not just science—it's personal. And that is why, no matter how difficult the journey, we won't stop until we've changed the future of cancer care.

Visit www.kyantechnologies.com to learn more about our work and vision.

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