

New Crown Bioscience Publication Details Application of In Vitro 3D Organoids with Matched PDX for Clinically Relevant Oncology Drug Development

San Diego, USA, 1 December 2022, [Crown Bioscience](#), a JSR Life Sciences company and Contract Research Organization (CRO), has announced the publication of its review paper entitled: Translational and Clinical Relevance of PDX-Derived Organoid Models in Oncology Drug Discovery and Development.

The paper is the first comprehensive review of tumor organoids derived from Patient Derived Xenograft (PDX) models across multiple cancer types. Developed from adult stem cells residing in the tumor, the paper describes the establishment of living biobanks of organoids readily available for drug discovery and development research. The paper was spearheaded by two senior scientists at Crown Bioscience, Dr Rajendra Kumari, Executive Director, Integrated Solutions and Dr Xiaoxi Xu, Senior Director, Molecular and Cellular Biology, and details how disruptive organoid technology was deployed to create matched 3D in vitro and in vivo patient-relevant systems.

Crown Bioscience's paper highlights the robustness and reproducibility of 3D in vitro organoid technology as well as the genetic and phenotypic stability compared to the original tumor material. PDX collections from different cancer types now have 3D in vitro matched models that can be scaled up for higher throughput screens and used repeatedly for multiple studies or applications.

Oncology researchers reading the review will learn how organoids can impact drug development decisions for targeted agents and immune therapeutics with higher throughput and novel high-content image (HCI) analysis. Crucially, it will also empower drug developers to make confident decisions early with patient-derived models before progressing to in vivo studies, reducing, refining and replacing (the 3 Rs) the use of animals where possible.

Dr Rajendra Kumari, Executive Director, Integrated Solutions at Crown Bioscience said: “There has been a significant increase in demand in the last five years in generating in vitro and in vivo matched patient models in preclinical oncology research. With Crown Bioscience’s market-leading collection of PDX models we can not only mirror responses in vitro across 15 different cancer types, we can also apply HCI with screening to provide greater depth of data and insight into responder/non-responder profiles and how drugs are impacting cellular systems and spatial biology.”

“This review paper offers essential insights into why 3D in vitro organoids are key culture systems for selecting successful drug candidates, their differences and advantages over other systems, like 2D cell cultures and 3D spheroids, and their applications in drug discovery. Our research clearly shows how developments in tumor organoids are making progress towards generating predictive tools for translational research to address unmet needs within oncology drug development.”

Crown Bioscience is dedicated to increasing the number, variety, and quality of models available for drug development by leveraging its already established reputation in patient models by continuously investing in superior solutions for oncology research providing direction not only on the right candidate or combination to progress, but also the right patient.

Crown Bioscience’s review paper is published on Wiley’s Current Protocols and can be found [here](#).



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