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Innovative tumour models spearhead cancer research advancements

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Cancer is an increasing health challenge in India, impacting lives across diverse socio-economic and geographies of the country. The burden of cancer in the country is on the rise, with an increasing number of cases reported each year. In 2022, the projected number of new cancer cases in India was 1,461,427, with a crude incidence rate of 100.4 per 100,000 individuals.



The rising burden of cancer in India presents a formidable challenge to public health. Companies across the world including India are working on developing therapies, drugs, treatment models, diagnostic tests to support patients. To mark World Cancer Day, we are covering latest developments on cancer research at Syngene International on Innovative Tumour Models.

In the realm of cancer research, the pursuit of effective experimental models has long presented a formidable challenge. These models play a vital role in assessing cancer progression, as well as gauging the effectiveness of potential cancer drugs before they undergo human trials. Novel tumour models, precisely crafted to replicate the intricate tumour microenvironment, address a longstanding challenge in cancer research. Patient-derived tumours models developed at Syngene have succeeded in preserving crucial tumour characteristics, thereby, enhancing the translatability and clinical relevance of preclinical studies.

Amongst the standout innovations are the orthotopic and spheroid tumour models, validated against the Standard of Care (SOC) in animal models. These models have exhibited remarkable accuracy in predicting drug responses, offering valuable insights into potential treatment outcomes. Orthotopic models, which are generated from tumour cell lines or patient-derived cell xenografts, are tailored for bladder and breast cancer study; while the 3D spheroid models, which are produced from a broad range of cell types, liver and neural cells, have shown promising results in monitoring tumour growth dynamics.

Beyond their role in refining research data accuracy, these advanced tumour models serve as cost-effective screening platforms for drug therapies. By enabling the evaluation of novel therapeutic agents, including groundbreaking innovations like Proteolysis Targeting Chimeras (PROTACs), Syngene's models accelerate the pace of drug discovery and development, offering renewed hope to patients worldwide.

Studies on tumour models hold immense potential for accelerating the discovery and development of novel therapeutics. By providing a more accurate representation of human tumours, Syngene aims to accelerate and improve the probability of success for preclinical research and ultimately improve patient care. Syngene’s commitment to innovation and scientific excellence drives to continue pushing the boundaries of cancer research and impactful solutions to the global healthcare community.

With plans underway to expand the tumour model portfolio to encompass a wider spectrum of cancer targets, Syngene remains at the forefront of driving innovation in the field. This development emphasises the company's commitment to advancing cancer research and underscores its instrumental role in shaping the future of healthcare.

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