Precision Oncology Starts with Precision Insights

DRUG DISCOVERY Successful drug discovery relies on tumor and matched normal tissue samples that preserve tumor biology as close to its original state as possible. This integrity, combined with analytical, computational, and biochemical expertise enables the discovery of novel therapeutic targets and drug candidates.

› Prof. Dr. Hartmut Juhl, Founder & CEO, Indivumed Therapeutics

The journey to developing novel, effective cancer therapies begins with the collection of tissue samples that accurately reflect the true biology of the tumour. However, such high-quality samples alone are not enough. To truly harness the potential of these samples, cutting-edge computing, and biomathematical and laboratory approaches are required.

Our recent research, published in Cell Death & Disease[1], highlights how quickly sample quality declines. Within just ten minutes after surgical removal, molecular markers start to degrade. Indivumed Therapeutics has pioneered a proprietary approach to sample collection, storage, and processing, which minimizes ischemia time to under 12 minutes for more than 75% of samples. This innovative approach, combined with their advanced molecular and multivariate analyses, enables the transformation of high-quality samples into high-quality insights, facilitating the identification of novel therapeutic targets.

Identifying novel targets

Indivumed's unique and proprietary database integrates genomics, transcriptomics, proteomics, and phosphoproteomics, providing a truly multi-omic view of cancer biology. Indivumed's comprehensive approach uses advanced biomathematics, biophysics, and artificial intelligence (AI) for multivariate analysis. These proprietary tools analyze complex data patterns and interaction networks, allowing researchers to identify novel and precise targets that are both relevant and highly specific to cancer biology.

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Unique holistic process

What sets the holistic process apart from the rest of the field is the additional biochemical validation of these targets. Samples stored in Indivumed's biospecimen inventory allow for deeper tissue analyses and, most importantly, the cultivation of 2D and 3D patient-derived tumour models – which are as close as possible to the functional reality of the tumour. This enables an accurate functional target validation, adding the characterisation of identified targets by protein type, biochemical characteristics, cellular location, and biological function.

The future demands quality

Since its founding, Indivumed has made sample quality the bedrock of its work. Combined with cutting-edge molecular analyses, this approach uncovers targets otherwise not even found, and this with a higher probability of successful therapeutic development further down the pipeline.

With 20 years of experience, Indivumed is a trusted partner offering novel, validated, and characterized target packages, grounded in real biology, and develops novel therapies in partnership with pharma companies. ■

Scan to read the full publication here:

[1] von der Heyde, S., Raman, N., Gabelia, N. et al. Tumor specimen cold ischemia time impacts molecular cancer drug target discovery | nature, Cell Death & Disease 15, 691 (2024) https://www.nature.com/articles/s41419-024-07090-x

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