Project Name: Innovative AI-integrated spatial omics and liquid biopsy platform: enabling commercializable precision diagnostics and therapeutic forecasting for lung cancer

Principal Investigator: Professor David Chi-Leung Lam

Technology

AI-driven multimodal platform integrating spatial transcriptomics and ctDNA with vascularized 3D organoids and deep autoencoders for circulating biomarker discovery and therapeutic simulation

Key Advantages

Delivers an accurate, non-invasive precision diagnostics biomarker and personalized predictions, outperforming standard biomarkers while enabling scalable, cost-effective clinical translation

Intellectual Property

Provisional patents on novel AI algorithms, biomarker signatures, and local lung cancer patient-derived organoids (PDOs) / spheroids / cell lines with different driver mutations

Stage of Development

Proof-of-concept at pre-clinical stage with *in silico* validation and piloted organoids; targeting ex vivo patient testing

Opportunities

Taps into the huge precision oncology market for great number of annual lung cancer cases via AI diagnostic licensing, organoid screening spin-offs, and pharma collaborations.

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