Technology/ Title	AI-PRS Precision Medicine & Zebrafish Translational Platform	
Subtitle	AI-guided phenotypic dose optimization integrating zebrafish disease models, human cellular systems, and translational precision medicine	
Technology Type	■ Biotechnology	■ Device/Diagnostics
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Technology Description	We have established an integrated AI-guided precision medicine platform combining zebrafish disease models, human cellular systems, and phenotypic response surface–based dose optimization (AI-PRS/PRS-OPT). The platform enables rapid in vivo evaluation of therapeutic efficacy, toxicity, and combinational dosing responses for cancer, metabolic disorders, aging-associated diseases, and personalized wellness applications. Key features include: • AI-guided multidrug dose optimization • Rapid in vivo phenotypic screening using zebrafish disease models • Human cell–based translational validation • Personalized therapeutic and nutraceutical dosage prediction • Integration of biological response data to continuously improve predictive models The platform has been applied to hepatocellular carcinoma (HCC), MASLD-associated HCC, inflammatory disease models, and natural compound optimization studies.	
Intellectual Property	• US Provisional Patent filed (2025) related to AI-guided phenotypic response surface optimization and precision combination therapy platform • Multiple NHRI-associated translational technologies and zebrafish disease modeling platforms • Proprietary AI-PRS/PRS-OPT analytical workflow and biological response database	
Key Publications	• Huang YS et al., Yuh CH*. PRS-OPT of Propolis-Metformin-Regorafenib Combination Therapy for MASLD-Associated HCC. Oncology Research. 2026;34(6):1-10.	

	• Lin KH et al., Yuh CH*. Glutamic Acid–Chelated Cobalt Stabilizes G-Quadruplexes and Suppresses HCC Growth. Oncology Research. 2026;34(4):21. • Huang CY et al., Yuh CH*. Creatine and L-carnitine attenuate muscular laminopathy in LMNA transgenic zebrafish. Scientific Reports. 2024;14:12826. • Yuh CH et al. Carassius auratus complex formula against lipid accumulation, hepatocarcinogenesis, and cell senescence. Advanced Biology. 2023;7:e2200310. • Yuh CH et al. Low molecular weight fucoidan inhibits hepatocarcinogenesis and NAFLD in zebrafish. Clinical and Translational Medicine. 2020;10:e252. • Yuh CH et al. Identification of anti-liver cancer small molecules with better therapeutic index than sorafenib via zebrafish screening. Cancers. 2019;11:739. • Yuh CH et al. RPIA overexpression promotes liver cancer development in transgenic zebrafish. Carcinogenesis. 2019;40:461. • Yuh CH et al. Non-canonical RPIA function promotes colorectal cancer via β-catenin activation. PLoS Biology. 2018;16:e2003714.
Business Opportunity	We are actively seeking: • Pharmaceutical and biotech partners for AI-guided drug combination optimization • Precision wellness and nutraceutical companies for personalized dosage applications • Clinical collaborators for translational precision medicine studies • International partners interested in zebrafish-based rapid phenotypic screening platforms • Strategic investors and commercialization partners for AI-enabled precision health technologies Potential applications include oncology, metabolic diseases, aging-associated disorders, drug repurposing, and precision wellness markets.