RePARPose Therapeutics: Elevating outcomes with affordable PARPi innovation

Principal Investigator: TEY, Sze Keong

Technology

- AI-enabled drug repurposing using InnoScreen platform
- **SK-001** discovered with PARP1 inhibitory activity in gBRCA-mutated breast cancer cells
- Structure-guided medicinal chemistry to enhance SK-001's PARP1 binding while preserving its hypoxia-activated prodrug nature

Key Advantages

- Potentially lower-cost and improving access
- Enhanced activity in hypoxic tumors where current PARPi underperform, aiming for a better therapeutic index
- Utility in patients with suboptimal response, resistance, or intolerance to existing PARPi
- Precision, biomarker-guided enrichment (HRD + hypoxia) to maximize clinical benefit and de-risk trials

Intellectual Property

- Composition-of-matter patents covering SK-001 derivatives
- Solid-state IP on salts, polymorphs, and other stable forms
- Formulation protection aligned with ICH stability requirements
- Methods-of-use claims for treatment in HRD and hypoxia-high settings across targeted solid tumors

Stage of Development

- Discovery: **SK-001** identified; in vitro HRD/hypoxia assays (*completed*)
- Lead optimization: derivatives being designed to improve PARP1 affinity while retaining hypoxia activation; in vitro HRD/hypoxia assays (*in progress*)
- Lead selection: in vivo efficacy HRD + hypoxia xenografts; PK/PD, ADME, safety pharmacology (*in progress*)

Opportunities

- Potential best-in-class, dual-targeting therapy
- Large and growing PARPi market (~US$15B by 2029) with affordability gaps
- Primary indications: HRD+/triple-negative breast cancer; HRD+ high-grade serous ovarian; mCRPC with HRR alterations; BRCA2/PALB2-mutated PDAC
- Address unmet needs in PARP-experienced/resistant or intolerant patients
- Secondary expansion to other hypoxia-rich HRD tumors (glioblastoma, cervical, head and neck)

Contact

Email: szekeong@hku.hk
WhatsApp: +852 64817670
WeChat: sktey_0428

HKU Med LKS Faculty of Medicine The University of Hong Kong 香港大學李嘉誠醫學院

HKU Med School of Clinical Medicine Department of Surgery 香港大學外科學系