## ◀ Introduction of MiniPDX ▷

MiniPDX is a novel in vivo drug sensitivity test with fast (7 days) turnaround time, using either fresh patient tumor samples or tissues from established PDX models. Using MiniPDX for ranking clinically approved drug or drug regimen options guides selection of the best individualized treatment strategy, delivering on the promise of precision medicine. Simultaneously, screening other compounds within the scaffold facilitates selection of the best candidates for further drug R&D. Importantly, performing MiniPDX Mouse Trial using fresh tumor samples generated from clinic is beneficial for determination of potential clinical indications that would be fit for investigating new drugs.
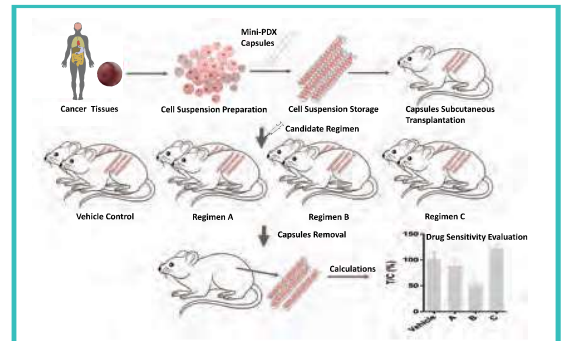
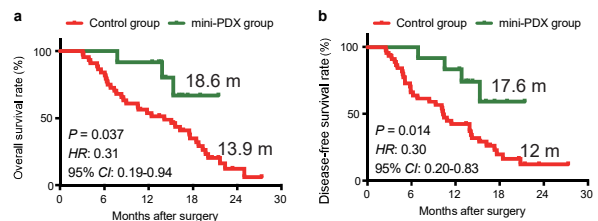

◁ Application of MiniPDX in Precision Medicine ▶

≫ Case Study

Before Treatment   After Treatment

Ola, olapanib; apa, apatinib; pazo, pazopanib.
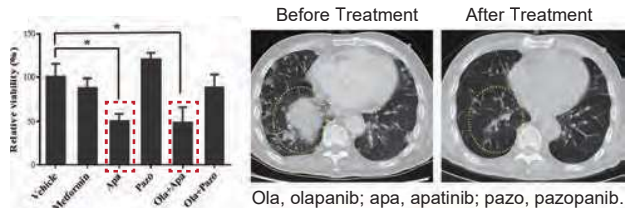
MiniPDX results from a patient with recurrent endometrial stromal sarcoma metastases to pulmonary identified positive response to Apatinib. Subsequent clinical therapy showed complete regression of tumor.

≫ Retrospective Analysis

Zhan M, et al. Cancer Commun (Lond). 2018 Jul 17;38(1): 48.

a — Control group — mini-PDX group
Overall survival rate (%)
18.6 m
$P = 0.037$
HR: 0.31
95% CI: 0.19-0.94
13.9 m
Months after surgery

b — Control group — mini-PDX group
Disease-free survival rate (%)
17.6 m
$P = 0.014$
HR: 0.30
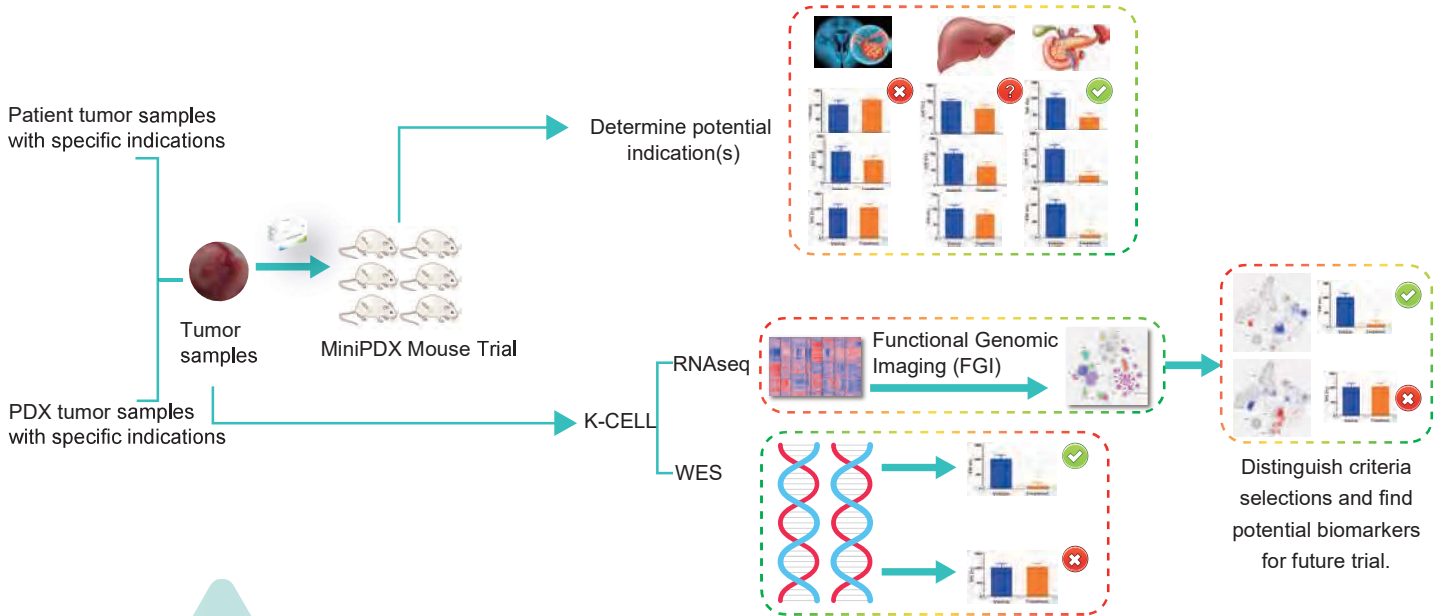95% CI: 0.20-0.83
12 m
Months after surgery

Patients who applied MiniPDX-guided therapy had over 5 month improvement in OS and DFS compared to those receiving conventional guidance-recommended therapies.

LIDE has completed over 2,300 MiniPDX assays for precision medicine in clinical, covering over 50 indications.

Tumor Type	No.	Tumor Type	No.	Tumor Type	No.
Adenoid Cystic Carcinoma(ACC)	3	Hemangioma	1	Periampullarycarcinoma	8
Anal Cancer	2	Hepatoblastoma	44	Peritoneal Metastatic Carcinoma	12
Atypical Teratoid/Rhabdoid Tumor, AT/RT	9	Hepatocellular Carcinoma	252	Pilocytic Astrocytoma	2
Bladder Cancer	13	Laryngocarcinoma	1	Prostate Cancer	52
Breast Cancer	79	Leukemia	3	Renal Carcinoma	17
Cancer of Biliary Duct	158	Lung Cancer	303	Retinoblastoma	6
Cervical Cancer	17	Lymphoma	12	Rhabdomyosarcoma	3
Chordoma	3	Malignant-Pleural Mesothelioma	2	RSPF	26
Choriocarcinoma	6	Melanoma	2	Testicular Cancer	1
Colorectal Cancer	215	Meningioma	22	Trophoblastic Tumor	16
Duodenal Carcinoma	32	Nasopharyngeal Carcinoma	9	Unidentified Children Brain Tumor	13
Endometrial Cancer	32	Nephroblastoma	3	Uterus Myoma	1
Esophageal Cancer	26	Neuroblastoma	17	Appendix Carcinoma	2
Gallbladder Cancer	92	Neuroendocrine	2	Urothelial Carcinoma	3
Gastric Cancer	202	Osteosarcoma	66	Carcinoma of Parotid Gland	3
GCT	5	Ovarian Cancer	135	Thyroid Carcinoma	1
Glioblastoma	196	Pancreatic Cancer	192	2335	
Head and Neck Cancer	15	Penile Cancer	7	Updated on 2021-05-25	

Application of MiniPDX in Drug R&D

Using either fresh tumor samples directly from patients or tumor tissues from established PDX models, MiniPDX Mouse Trial can identify potential clinical indications for targeted drugs. Furthermore, combined with LIDE K-Cell technology, RNA or DNA can be extracted and enriched from only thousands of cells left from MiniPDX preparation, enabling genomic and transcriptomic analysis. The Omics data from FGI (Functional Genomic Imaging) – a LIDE bio-informatic analysis, identifies potential biomarkers in order to distinguish responders/non-responders and can be further applied in patient stratification to inform inclusive/exclusive criteria in clinical trials.

Patient tumor samples with specific indications

Tumor samples

MiniPDX Mouse Trial

PDX tumor samples with specific indications

Determine potential indication(s)

K-CELL

RNAseq

WES

Functional Genomic Imaging (FGI)

Distinguish criteria selections and find potential biomarkers for future trial.

LIDE proposes Functional Diagnosis to accelerate the traditional R&D pattern

| Project initiation | Molecular construction | In vitro evaluation | In vivo evaluation | IND |

Traditional Pharma R&D pattern	Genetically engineered cell/ Commercial cell line		Cell-derived Xenograft（CDX）	
Functional diagnositic-based R&D new pattern	Clinical fresh tissue cells/ PDX matching Cells/CR cells	MiniPDX+ Multi-omics	Patient-derived xenograft （PDX）	MiniPDX Mouse Trial+Multi-omics
	Multiple cells Multiple drug candidates	Multiple models 2-3drug candidates	2-4models 1 drug candidates	Multiple Indication 1 drug for IND