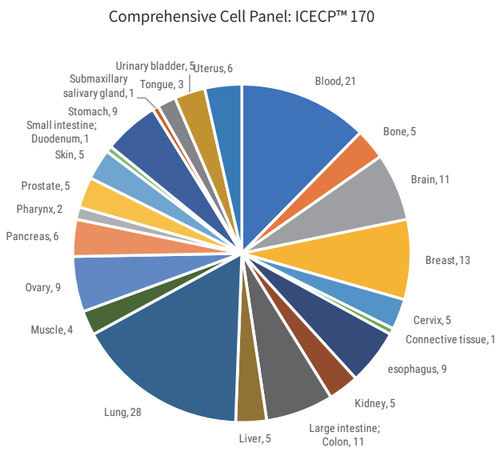
Cancer Cell Panel Screening and Profiling

Understanding Tumor Biology and Drug Response

ICECP™ cancer cell panel screening allows robust, flexible, and tailored profiling of test agents on 500+ cancer cell lines, encompassing various assays such as 2D proliferation, 3D proliferation, colony formation, and apoptosis, with no assay timeline constraints. For generated drug resistant cell lines, we perform RNA-seq-based bioinformatic analysis to investigate the mechanism. Utilizing our in-house algorithm, we can provide detailed information about differential gene expression, enriched pathway and featured gene profiling.



ICE Bioscience has established a predefined cell panel comprising 170 tumor cell lines, encompassing 21 cancer types.

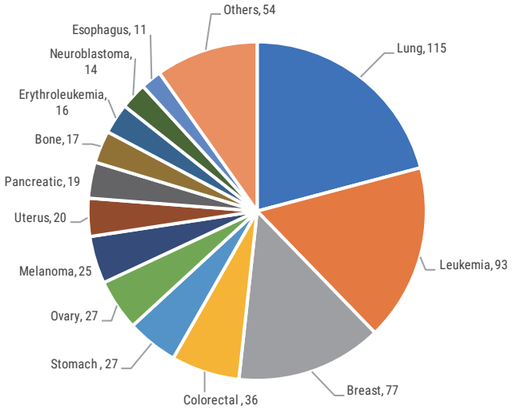
Cell Panel Applications

- Identify the sensitive tumor cell lines
- Identify the susceptible cancer types
- Cytotoxicity analysis of test agents
- Tissue specificity of cells
- Identify the most responsive tumor cell lines for subsequent studies on cellular models or animal studies
- Identify the genomic signature of your test agents for the prediction of anticancer drug response (Optional)

Choose from over 500 human tumor cell lines available in our ICE cell bank, with an ongoing addition of cell lines per month. Collaborators have the flexibility to select specific cell lines of interest from our cell bank to create a tailored Cell Panel for screening.

Features

- Various assay formats without timeline constraints
- Performed at any time and fast turnaround time
- High cell quality and clear cell source
- Single drug or combination drug testing
- Optional bioinformatics in-depth analysis



Specialized Cell Panels

ICECP™ DDR Cell Panel

Covers 10 cancer types with 80 tumor cell lines, including common types, gene-edited cells like BRCA-KO, and drug-resistant lines. Assays run for 7-14 days.

ICECP™ EGFR Mutation Cell Panel

Offers 70 Ba/F3 cell lines, featuring both wild-type and mutant EGFR, for testing EGFR inhibitors. Also provides assays for tumor cell lines with natural EGFR mutations and resistant lines.

ICECP™ KRAS Cell Panel

Provides 30 Ba/F3-KRAS mutant cell lines and 30 KRAS mutant tumor cell lines for assessing KRAS inhibitors' activity and selectivity.

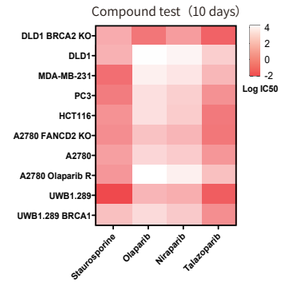
ICECP™ HER2-ADC Cell Panel

Comprises 65 cell lines, including 53 tumor lines with varied HER2 expression levels and 12 engineered Ba/F3 lines with HER2 mutations.

A Versatile Drug Response Platform With Custom Options

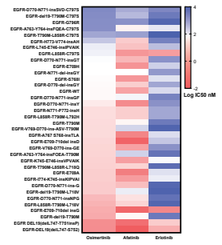
Long-term Cell Panel Screening

When testing with a DDR Cell Panel, it takes a longer time point to see the effects of the compound. Therefore, we offer 7-14 days of compound testing. The following figure shows the test results using 2D cell proliferation assay.



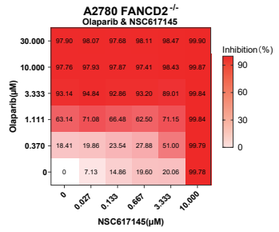
Ba/F3 Cell Panel Screening

Drug screening results in EGFR and KRAS Ba/F3 Cell Panel screening.



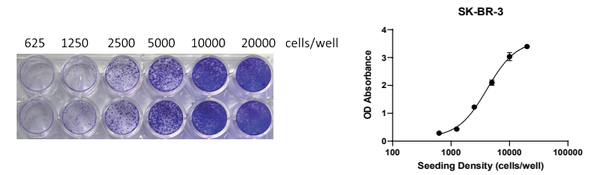
Combination Screening

We offer combination studies as matrix combination analysis based on Bliss Independence using 2D and 3D cell-based assays.



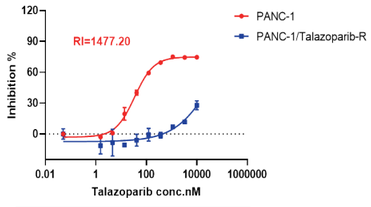
Clonogenic Assay

We provide cell clonogenic assay to determine single cells to survive and reproduce to form colonies.



Drug-resistant Cell Lines Screening

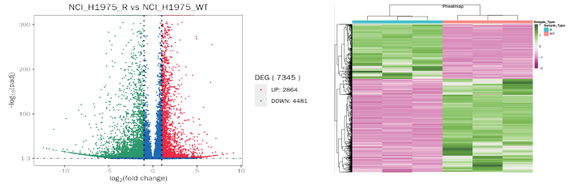
We have 60+ Drug-Resistant cell lines and gene edited cell lines for screening.



	PANC-1	PANC-1/Talazoparib-R
IC50	34.31	50397

Bioinformatic Analysis

Our bioinformatic analysis of drug-resistant cell lines based on RNA-seq. Using our internal algorithms, we can provide detailed differential gene expression information, enrichment pathways, and characteristic gene profiles.



Resistant Cell Lines Panel

ADC/Payload Resistance

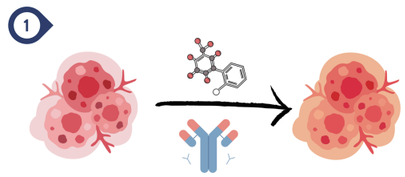
Resistant sublines developed against payload classes such as topoisomerase I inhibitors or tubulin inhibitors, enabling cross-resistance evaluation and strategy development for ADC programs.

RAS Inhibitor Resistance

Resistant sublines induced by prolonged exposure to RAS inhibitors to support pathway adaptation studies and rational combination exploration.

Mechanism add-ons

Add-ons may include transporter overex-pression checks such as ABCG2 or ABCB1, target/pathway markers, and transcriptomic comparison between parental and resistant lines.



Drug-induced Selection Models
Drug concentrations incrementally increase

Genome Editing and Mechanism-driven Models
Engineered resistance models built to test defined hypotheses

Resistant Cell Lines Validation

- **Resistance Index (RI) assessment:** ≥5 fold increase in IC_{50} for the resistant subline versus the parental line.
- **Stability validation:** confirm phenotype persistence across passages.
- **STR authentication:** cell line genetic identity verification.
- **MoA study options:** RNA-seq, and Whole Exome Sequencing (WES) for mechanistic insights.

Cross-Resistance Profile

We offer integrated drug-resistant cell line generation and cross-resistance profiling services to help clients evaluate whether their ADCs, payloads, or other anticancer agents can retain activity in resistant settings. Beyond establishing stable resistant models, we systematically assess sensitivity across related ADCs, free payloads, and comparator drugs, enabling clients to determine whether resistance is drug-specific or extends across targets, linkers, or payload classes. This approach helps de-risk early discovery, differentiate next-generation candidates, support mechanism-of-resistance studies, and provide more decision-relevant data for candidate prioritization, combination strategy design, and post-resistance treatment positioning.

Resistance Index (RI)		ADC/Payload Resistant Cell lines												
Cells / Drugs		ADC(HER2)		ADC (TROP2)	Payload (Topoisomerase I inhibitor)						Payload (Tubulin inhibitor)				
		NCI-N87/ DS-8201 R	NCLN87 /T-DM1R	HCC1806 /MMU-132 R	DLD.1 /Exatecan R	GP2d /Dxd R	HCC1806 /Dxd R	GP2d /SN-38 R	HCC1806 /SN-38 R	NCI-N87 /SN-38 R	HCC1806 /MMAE R	SK-OV-3 /MMAE R	UGC-4 /MMAE R	OVCAR3 /MMAE R	HCC4006 /MMAE R
DS-8201	ADC(HER2)	>100	1	Insensitive*	Insensitive*	Insensitive*	Insensitive*	Insensitive*	Insensitive*	> 5	Insensitive*	Insensitive*	Insensitive*	Insensitive*	Insensitive*
T-DM1	ADC(HER2)	1	>10	Insensitive*	Insensitive*	Insensitive*	Insensitive*	Insensitive*	Insensitive*	4	Insensitive*	5	Insensitive*	Insensitive*	Insensitive*
IMMU-132	ADC(TROP2)	>5	2	>10	>100	>20	> 20	ND#	> 20	> 10	2	2	Insensitive*	1	1
SKB264	ADC(TROP2)	>5	1	>5	>100	4	> 20	ND#	> 10	> 5	4	5	Insensitive*	1	1
ABBV-399	ADC(c-Met)	Insensitive*	Insensitive*	Insensitive*	Insensitive*	Insensitive*	Insensitive*	Insensitive*	Insensitive*	Insensitive*	Insensitive*	Insensitive*	> 100	Insensitive*	>100
MRG003	ADC(EGFR)	1	2	4	Insensitive*	>100	3	ND#	1	3	> 100	> 100	ND#	> 100	>100
HER3-Dxd	ADC(HER3)	Insensitive*	Insensitive*	Insensitive*	ND#	ND#	Insensitive*	ND#	Insensitive*	Insensitive*	Insensitive*	ND#	Insensitive*	Insensitive*	Insensitive*
Dxd	Payload (Topoisomerase I inhibitor)	>10	1	>50	>100	>10	> 100	3	> 50	> 5	5	1	1	1	1
Exatecan	Payload (Topoisomerase I inhibitor)	3	1	>10	>50	1	> 20	1	> 10	2	ND#	2	1	1	1
KL610023	Payload (Topoisomerase I inhibitor)	4	1	>5	>100	2	> 20	ND#	> 10	5	ND#	3	ND#	ND#	1
SN-38	Payload (Topoisomerase I inhibitor)	>10	2	>20	>100	>10	> 20	> 5	> 50	> 5	2	2	1	1	1
ZD06519	Payload (Topoisomerase I inhibitor)	>10	1	>20	>100	>10	> 100	> 5	> 100	> 5	ND#	2	1	1	2
MMAE	Payload (Tubulin inhibitor)	2	2	1	3	>5	2	ND#	2	2	> 10	> 100	> 10	> 5	>50
DM1	Payload (Tubulin inhibitor)	2	1	1	4	4	2	ND#	3	1	ND#	> 20	2	1	>20
Irinotecan	Chemotherpeutics	ND#	ND#	ND#	ND#	5	ND#	5	ND#	ND#	ND#	ND#	ND#	ND#	ND#

Insensitive*: The parental cell line shows no response to the tested drugs.
ND#: Not Done

Representative ADC/Payload resistant cell models (Updated regularly)

NO.	Resistant Cell Line	Resistant Index(RI)	Target/payload Class	Cancer Type	Model Generation Method
1	NCI-N87/DS8201 R	>100	HER2, Topoisomerase I	Gastric	*In Vitro* Drug-Induced Selection
2	NCI-N87/T-DM1 R	>10	HER2, Tubulin	Gastric	*In Vitro* Drug-Induced Selection
3	HCC1806/IMMU-132 R	>10	TROP2, Topoisomerase I	Breast	*In Vitro* Drug-Induced Selection
4	DLD-1/Exatecan R	>100	Topoisomerase I inhibitor	Colorectal	*In Vitro* Drug-Induced Selection
5	SK-0V-3/Dxd R	>10	Topoisomerase I inhibitor	Ovarian	*In Vitro* Drug-Induced Selection
6	GP2d/Dxd R	>10	Topoisomerase I inhibitor	Colorectal	*In Vitro* Drug-Induced Selection
7	HCC1806/Dxd R	>50	Topoisomerase I inhibitor	Breast	*In Vitro* Drug-Induced Selection
8	GP2d/SN-38 R	>5	Topoisomerase I inhibitor	Colorectal	*In Vitro* Drug-Induced Selection
9	HCC1806/SN-38 R	>20	Topoisomerase I inhibitor	Breast	*In Vitro* Drug-Induced Selection
10	NUGC-4/MMAE R	>10	Tubulin inhibitor	Gastric	*In Vitro* Drug-Induced Selection
11	OVCAR3/MMAE R	>5	Tubulin inhibitor	Ovarian	*In Vitro* Drug-Induced Selection
12	HCC1806/MMAE R	>10	Tubulin inhibitor	Breast	*In Vitro* Drug-Induced Selection
13	SK-OV-3/MMAE R	>10	Tubulin inhibitor	Ovarian	*In Vitro* Drug-Induced Selection
14	HCC4006/MMAE R	>50	Tubulin inhibitor	Lung	*In Vitro* Drug-Induced Selection
15	OVCAR3-ABCB1-0E	MMAE >20	ABCB1	Ovarian	Genome Editing
16	OVCAR3-ABCG2-0E	Dxd >10	ABCG2	Ovarian	Genome Editing
17	NCI-N87-ABCB1-0E	MMAE>20	ABCB1	Gastric	Genome Editing
18	NCI-N87-ABCG2-0E	Dxd >10	ABCG2	Gastric	Genome Editing
19	JIMT-1-ABCB1-OE	MMAE >100	ABCB1	Breast	Genome Editing
20	JIMT-1-ABCG2-0E	Dxd >10	ABCG2	Breast	Genome Editing
21	SK-BR-3-ABCB1-OE	MMAE >100	ABCB1	Breast	Genome Editing
22	SK-BR-3-ABCG2-0E	Dxd >10	ABCG2	Breast	Genome Editing
23	HCT116-TOP1-R364H	Dxd >20	Topoisomerase I(TOP1 mutation)	Colorectal	Genome Editing

Representative RAS inhibitor resistant cell models (Updated regularly)

NO.	Resistant Cell Line	Resistant Index(RI)	Target	Cancer Type	Model Generation Method
1	MIA PaCa-2/Sotorasib R	>100	KRAS G12C	Pancreatic	*In Vitro* Drug-Induced Selection
2	NCI-H358/Adagrasib R	>20	KRAS G12C	Lung	*In Vitro* Drug-Induced Selection
3	NCI-H358/Sotorasib R	>100	KRAS G12C	Lung	*In Vitro* Drug-Induced Selection
4	LoVo/Daraxonrasib R	>20	pan RAS	Colorectal	*In Vitro* Drug-Induced Selection
5	HCT 116/Daraxonrasib R	>100	pan RAS	Colorectal	*In Vitro* Drug-Induced Selection
6	GP2d/Daraxonrasib R	>100	pan RAS	Colorectal	*In Vitro* Drug-Induced Selection
7	GP2d/AMG 410 R	>100	pan RAS	Colorectal	*In Vitro* Drug-Induced Selection

http://en.ice-biosci.com marketing@ice-biosci.com ICE Bioscience