

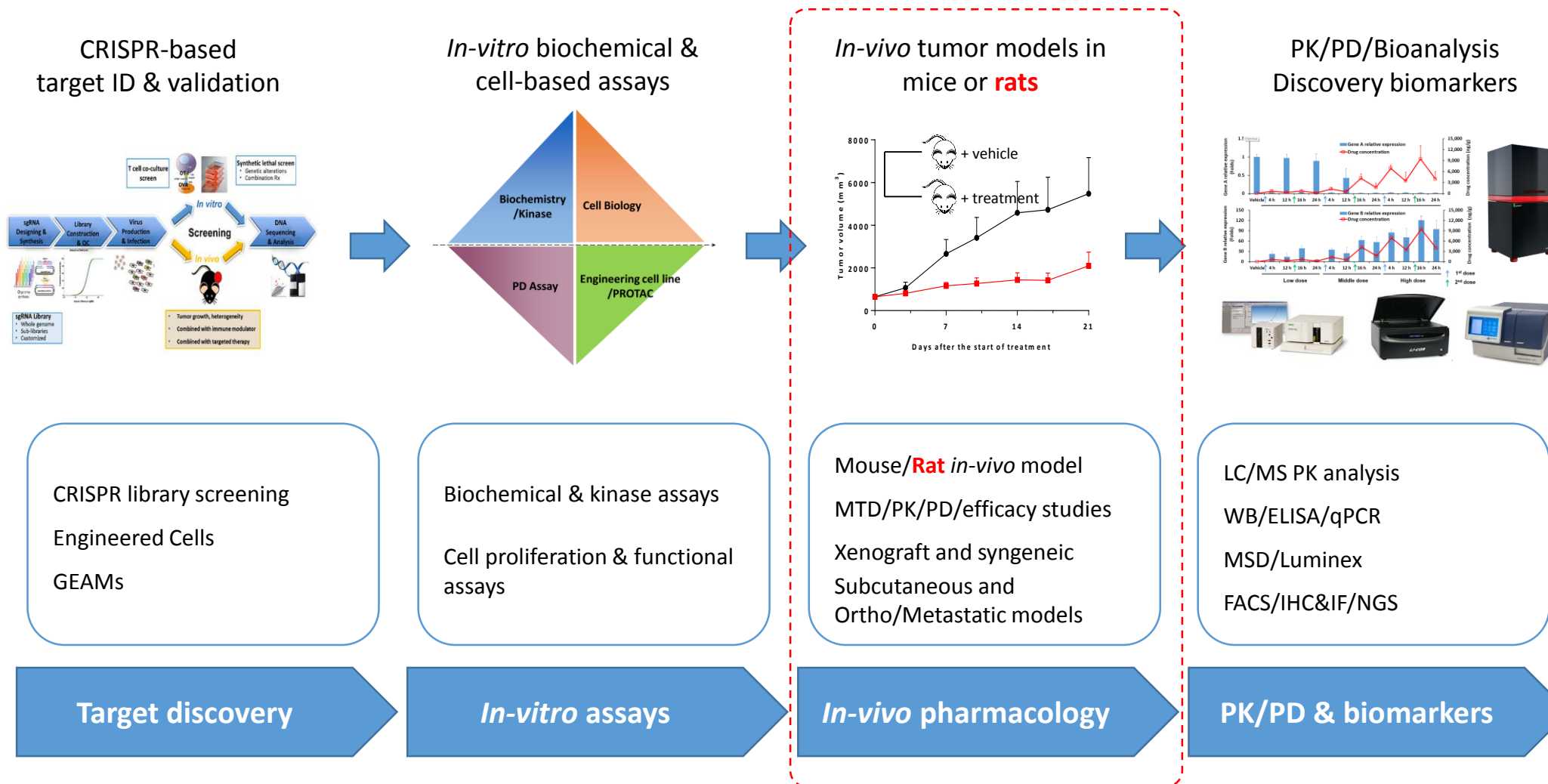
Xenograft and Syngeneic Tumor Models in Rats



WuXi AppTec, WuXi Biology, Oncology & Immunology Unit



Rat models in the pre-clinical cancer drug discovery & development



For more details about the up-stream and down-stream services, please email to info_onco@wuxiapptec.com

Features of rat models

- Immuno-deficient rat strains: Different severity levels of immuno-deficiency, in correspondence to mice

Specie	Strain	Hair Coat	T-Cell Deficient	B-Cell Deficient	NK-Cell Deficient	Genetics
Mouse	BALB/c nude	No	Yes	No	No	Inbred
Rat	Nude Rat	No	Yes	No	No	Inbred
Mouse	NOG	Yes	Yes	Yes	Yes	Inbred
Rat	FRG Rat	Yes	Yes	Yes	Yes	Inbred

- Rat models with better clinical relevance (compared to mouse models) in the following aspects:

Metabolism	Physiology	Manipulation	Genetics
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Metabolic rate	<input type="checkbox"/> Organs and tissues	<input type="checkbox"/> Comprehensive surgery	<input type="checkbox"/> 21 pairs of chromosomes
<input type="checkbox"/> Hormone	<input type="checkbox"/> Blood pressure	<input type="checkbox"/> Intravenous drip	<input type="checkbox"/> 2.75 billion base pairs
<input type="checkbox"/> ADME	<input type="checkbox"/> Central nerves system	<input type="checkbox"/> Sampling	
		<input type="checkbox"/> Imaging	

Xenograft tumor rat models

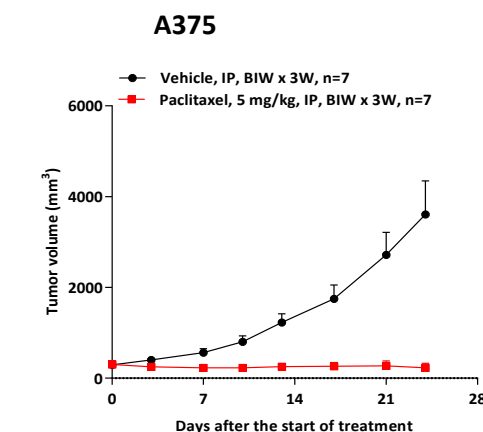
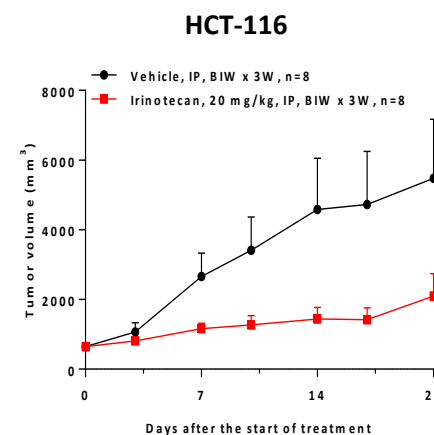
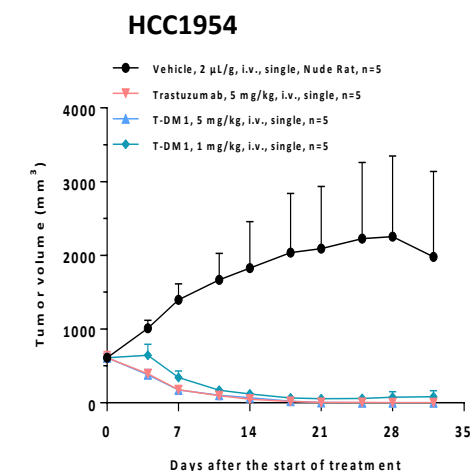
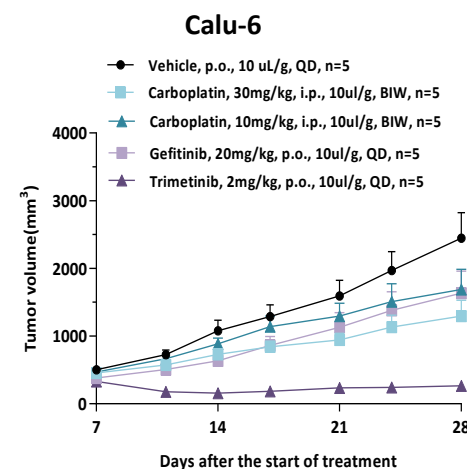
Human cell-line derived xenograft models in rats

- Flexibility with the routes of cell inoculation: subcutaneous, orthotopic or metastatic/systemic models.
- Well annotated by growth kinetics, SOC validation, genomics and etc..

	Cancer	Name of cell line
Human CDX Models	Bladder	RT-112
	Breast	MDA-MB-231-luc ^S , HCC1954 ^S , MCF-7
	Colon	HCT-116 ^S , HT-29 ^S
	Epidermoid	A431
	Glioblastoma	U87-luc
	Leukemia	THP-1, MV4-11, K562
	Lung	H460 ^S , H1299, H1975, A549, NCI-H1373, NCI-H2122, Calu-6 ^S
	Liver	Hep3B-luc (orthotopic), HepG2
	Melanoma	A375 ^S , A2058
	Ovarian	A2780 ^S
Pancreas	CAPAN-1, Mia-pa-ca-2	
Prostate	PC-3	

^S: SOC validated

Subcutaneous models and SOC data examples



Syngeneic tumor rat models

Rat cell-line derived syngeneic models in rats

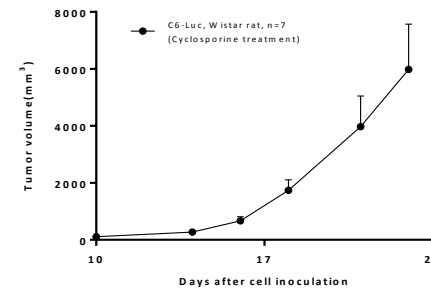
- Rat tumor established in the syngeneic rat strains, enabling the discovery of immunotherapies.
- Immune profiling and additional end-points: Flow-cytometry, multiplex IHC/IF, NGS – Nanostring and ScRNAseq.

	Cancer	Name of cell line
Syngeneic	Breast	RMT1 M2, 13762 MATBIII
	Glioblastoma	F98npEGFRvIII, C6-luc
	Leukemia	9L/lacZ, RBL-1
	Liver	N1-S1-luc
	Rous Sarcoma	XC
	Squamous cell carcinoma	SCC131
	Kidney	Hak
	Leiomyosarcoma	DDT MF2
	Pancreas	HIT-T15 ⁰
	Lung	HT100 ⁰
	Fibroblast	MCB3901 ⁰
Leiomyoma	ELT3 ⁰	

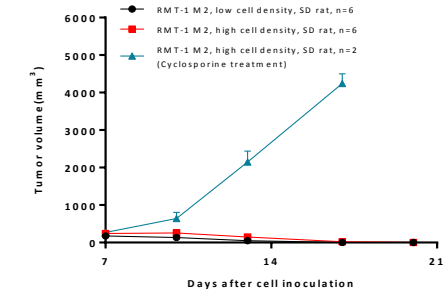
⁰: Ongoing

Syngeneic models on immunocompetent rat

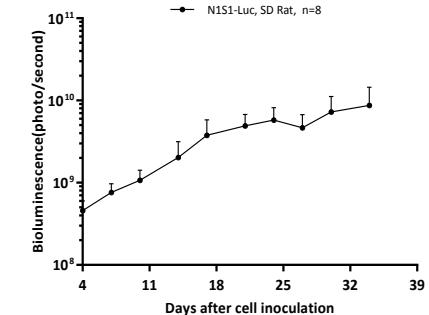
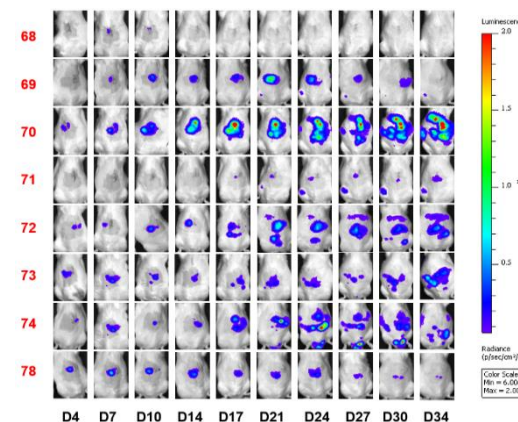
C6-luc in Female wistar rat



RMT-1 M2 in female SD rat



Liver N1-S1-luc orthotopic model in male SD rat



Advanced cell and drug delivery system

Surgical techniques enabling better clinical relevance

- Showcases of surgical techniques mimicking the clinical drug delivery system: Transcatheter Arterial ChemoEmbolization (TACE) and intravenous drip.

Intravenous drip

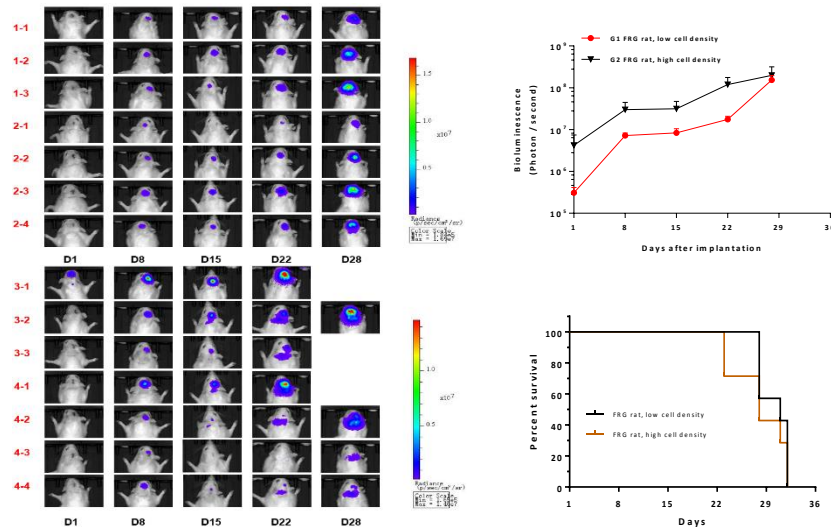


Transcatheter Arterial ChemoEmbolization (TACE)

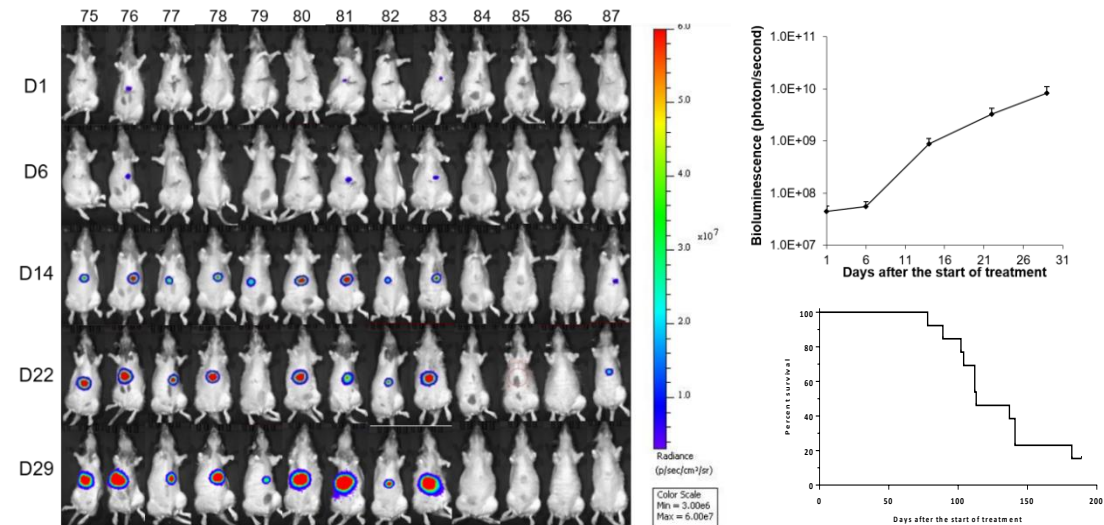


Brain orthotopic models example

U87-MG-luc2



Hep3B-Luc human liver orthotopic model in nude rat





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Improving Health. Making a Difference.

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