



# CrownBio

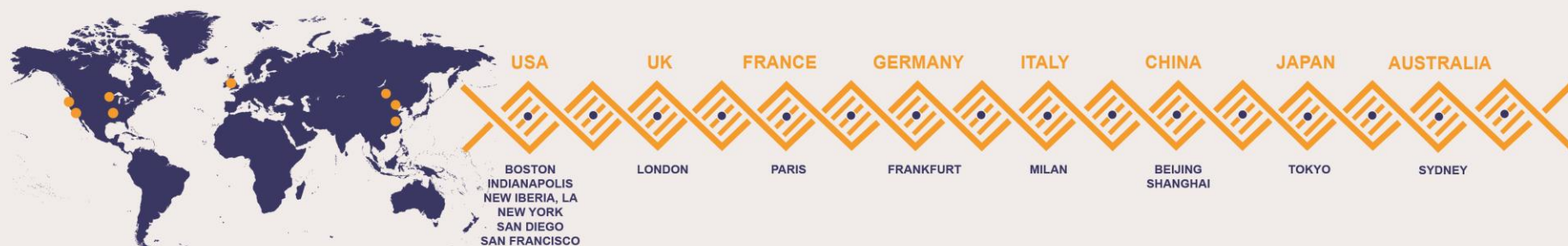
CONNECTING SCIENCE TO PATIENTS

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# OmniScreen™ Spring 2017 Expansion

Rapidly progress your lead compound to validated candidate with CrownBio's enhanced **OmniScreen**

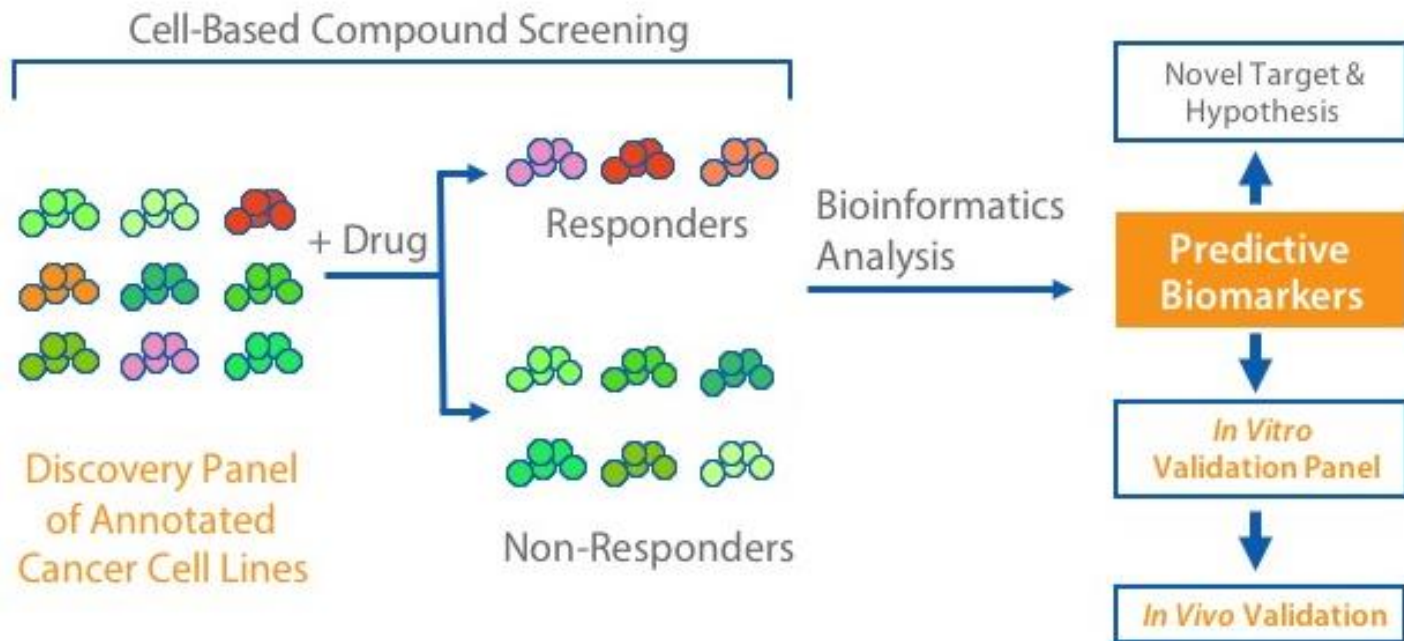


# Why Screen with CrownBio?

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- Joining one of our pre-scheduled **OmniScreens** provides a cost effective solution to screen many cancer types simultaneously
- Screen from our large collection of 370 cell lines, or subpanels of cell lines with corresponding xenograft or in-house RNAseq data available
- Select appropriate cell lines from **XenoBase**<sup>®</sup>, the world's largest commercial database of well-characterized cell lines with SoC and RNAseq data
- Access our large-scale *in vivo* capacity and over 150 validated xenografts to rapidly move hits into PD and efficacy studies
- Extensive experience over many years and hundreds of studies
- Excellent customer service

# Cell Panel Screening Services with Bioinformatics Support



# OmniScreen Key Facts

- Well validated platform for cell-based compound screening
- Utilize **OmniPanel™**: our large collection of 370 cancer cell lines
- Schedule any subpanel of 50 or more cell lines
- Unique **XenoSelect™** and **RNAseq** panels
- Quality cells: STR verified, mycoplasma-proof
- Open database (**XenoBase**) for clients to be able to select cell lines to meet unique needs
- Secure online client account to review study data in real time
- Flexible template designs
- Extensive experience in combination assays and screens
- Data quality control with SoCs
- Bioinformatics support from the beginning to the end

# What's New for 2017

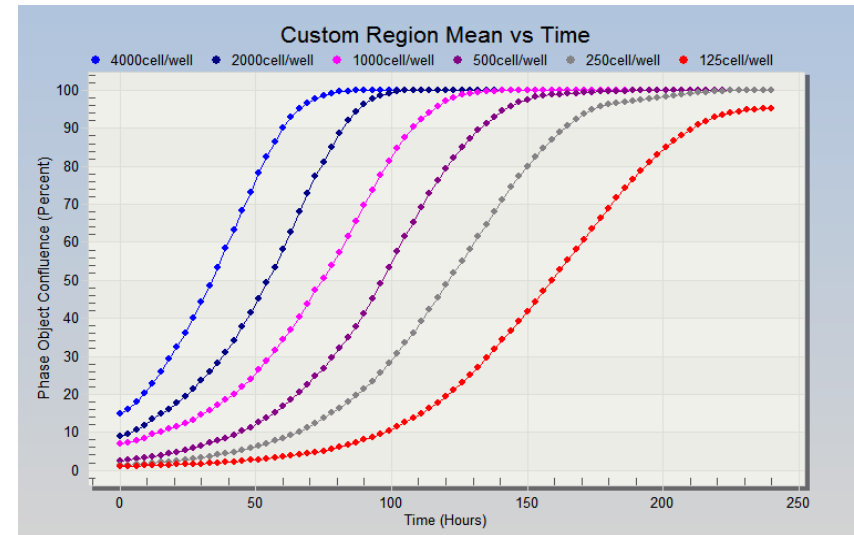
- Expanded **OmniPanel**: 29 added cell lines, 370 total cell lines for expanded screening
  - Including added cell lines for AML, NHL, bone, breast, colorectal, lung, pancreatic, and uterine cancer
- Enhanced cell line growth data collection for improved screening quality (ongoing for 2017), including:
  - Doubling time
  - Validated seeding densities across multiple time points
  - Cell imaging at varying confluence levels

# A549 Cell Line Growth Curve for 240hrs

## Cell Line: A549

- Tissue Origin: Lung
- Medium: Ham's F12K+10%FBS
- Cell Line ID: CL-00101
- Passage: P7-071116

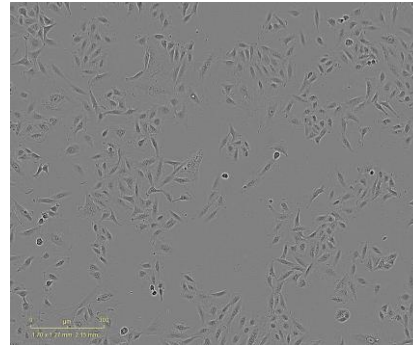
A549	Seeding Density(cells/well)	Doubling Time (h)
A	4000	24.24
B	2000	25.81
C	1000	28.49
D	500	28.22
E	250	37.77
F	125	35.96
Medium Value		28.36



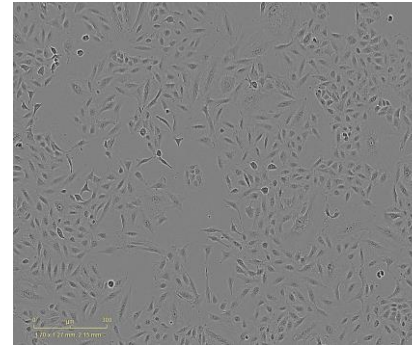
**Confluence: 20%**



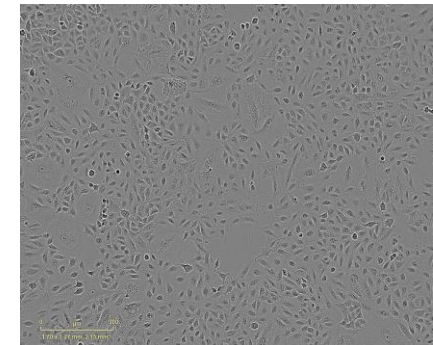
**Confluence: 50%**



**Confluence: 70%**

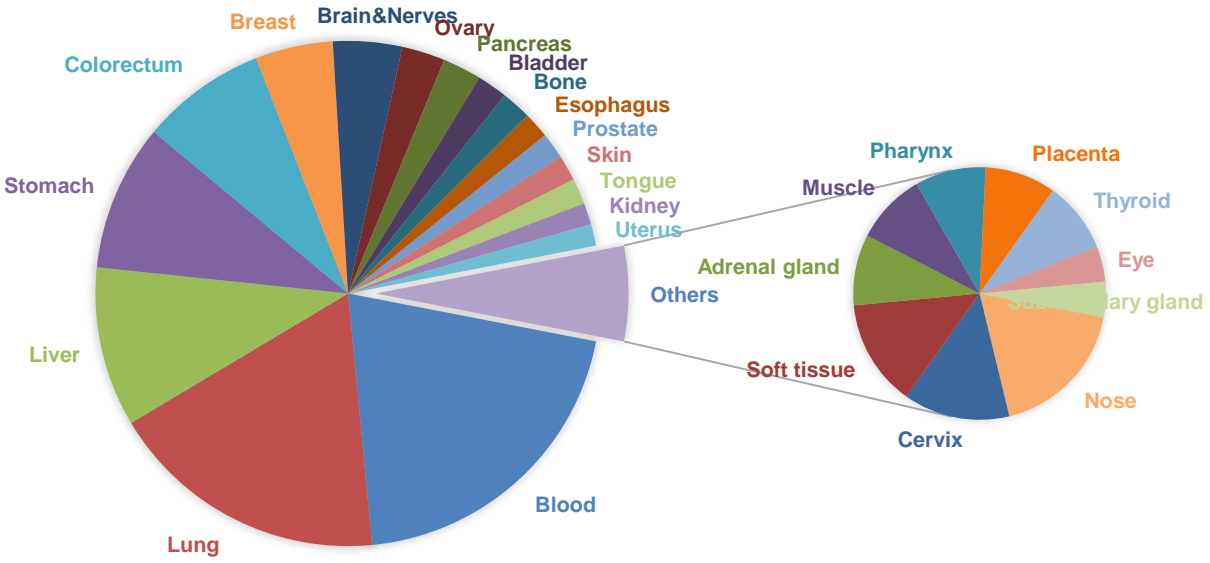


**Confluence: 90%**



**OmniPanel has 370 cell lines and growing:**

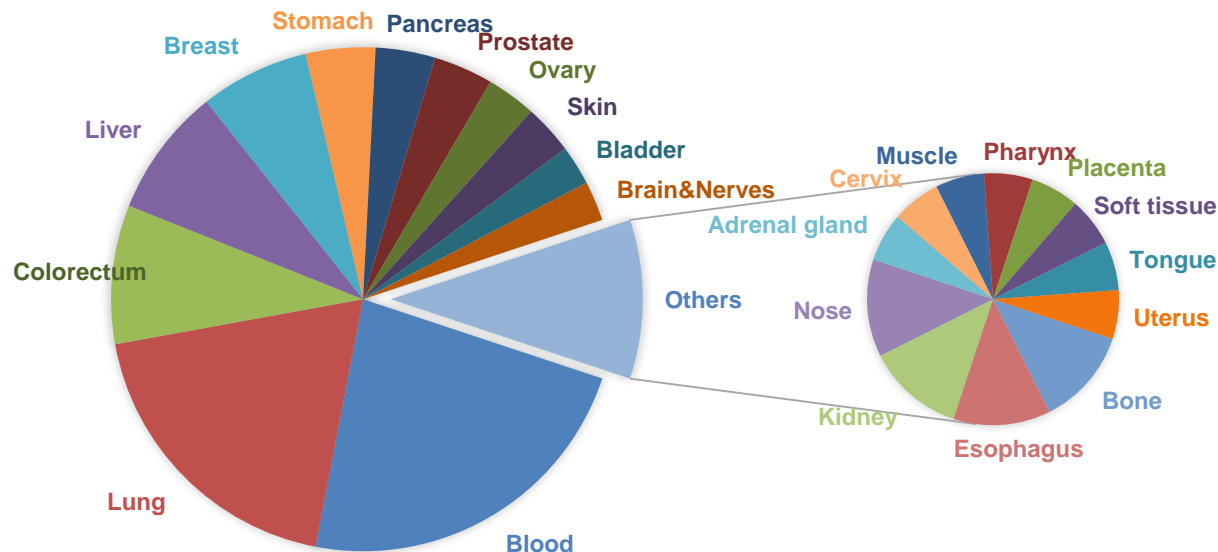
- Access to a genomically diverse collection of cancer cell lines for drug response screening
- Routinely run for research projects with a variety of small and large molecules
- Clients simply select 50 or more cell lines to run their compounds and benefit from the efficiency gains
- High-throughput screening for the discovery of predictive biomarkers



Origin Tissue	Cell Lines
Blood	70
Lung	68
Liver	33
Stomach	30
Colorectum	29
Breast	25
Brain&Nerves	16
Pancreas	11
Ovary	10
Bone	9
Uterus	9
Bladder	7
Esophagus	7
Skin	6
Tongue	6
Kidney	5
Prostate	5
Others	24

## XenoSelect Panel with 158 cancer cell lines:

- A subset of OmniPanel
- Allows quick transition from *in vitro* screen to *in vivo* efficacy study with one-stop service
- Well-validated cancer cell lines ready for *in vivo* efficacy studies

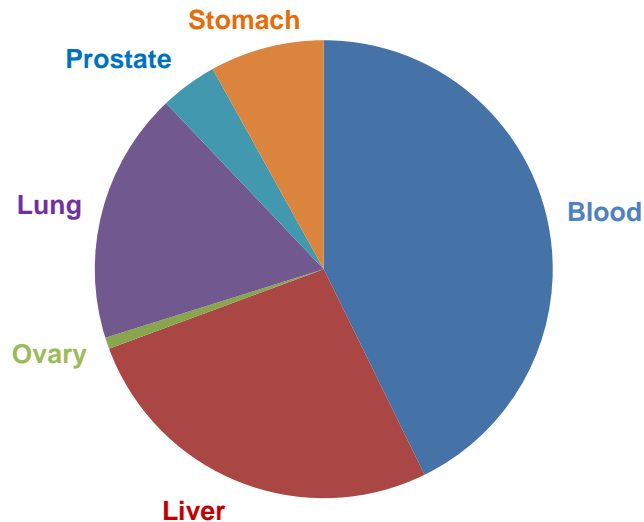


Origin Tissue	Cell Lines
Blood	39
Lung	31
Colorectum	13
Liver	13
Breast	10
Stomach	7
Pancreas	6
Prostate	5
Skin	5
Bladder	4
Brain&Nerves	4
Ovary	4
Kidney	2
Others	15



## RNAseq Panel with 125 cancer cell lines:

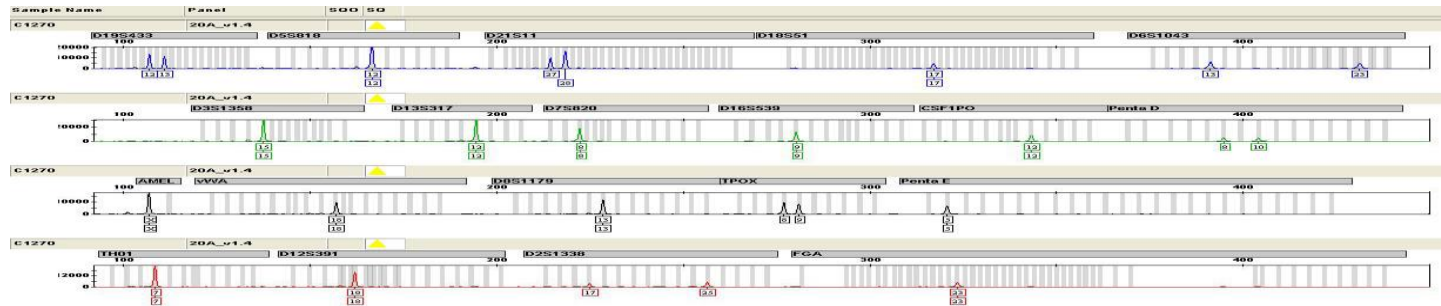
- Allows complete and rapid genomic characterization of cell lines based on our own genomic data that matches our own cell lines
- Provides the ability to correlate mutation status, copy number variation, and expression levels with drug response
- Reveals genomic features that serve as markers of cells' sensitivity to drugs, providing a path to predict which cells will respond to the drug



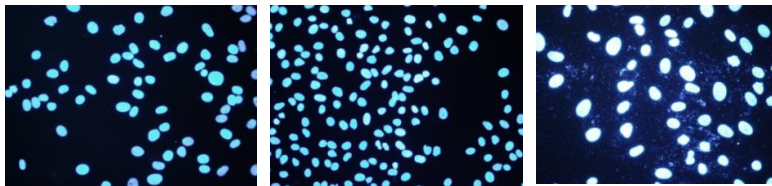
Origin Tissue	Cell Lines
Blood	54
Liver	33
Lung	22
Ovary	1
Prostate	5
Stomach	10
Total	125

- All cell lines are fully verified by STR analysis and mycoplasma contamination free
- Easy access to all cell lines ([XenoBase](#)) for detailed genomic data

## STR Analysis



## DNA Stain (Hoechst33258) of Mycoplasma



GAM-HP-016

Negative control

Positive control

## MycoAlert Detection of Mycoplasma

Samples		Reading A	Reading B	Ratio(B/A)	Result
SNU-16	CL-290 P3-081107	31	16	0.516	-
Positive control		18	1029	57.167	+
Negative control		41	9	0.220	-

# Triplicate Plate Study Format

- Experience with a variety of different molecules, such as kinase inhibitors, epigenetic modulators, small and large molecules; designed with empty well, medium control, and vehicle control wells to ensure data quality

## 384-well plate

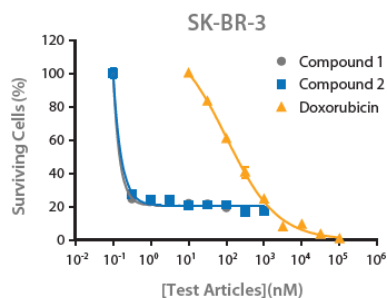
2 compounds/plate, 9 test concentrations per test compound

Row	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
A	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	
B	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	
C	E	M	N	C9	C8	C7	C6	C5	C4	C3	C2	C1	N	C9	C8	C7	C6	C5	C4	C3	C2	C1	M	E	Cell line 1
D	E	M	N	C9	C8	C7	C6	C5	C4	C3	C2	C1	N	C9	C8	C7	C6	C5	C4	C3	C2	C1	M	E	
E	E	M	N	C9	C8	C7	C6	C5	C4	C3	C2	C1	N	C9	C8	C7	C6	C5	C4	C3	C2	C1	M	E	
F	E	M	N	C9	C8	C7	C6	C5	C4	C3	C2	C1	N	C9	C8	C7	C6	C5	C4	C3	C2	C1	M	E	
G	E	M	N	C9	C8	C7	C6	C5	C4	C3	C2	C1	N	C9	C8	C7	C6	C5	C4	C3	C2	C1	M	E	Cell line 2
H	E	M	N	C9	C8	C7	C6	C5	C4	C3	C2	C1	N	C9	C8	C7	C6	C5	C4	C3	C2	C1	M	E	
I	E	M	N	C9	C8	C7	C6	C5	C4	C3	C2	C1	N	C9	C8	C7	C6	C5	C4	C3	C2	C1	M	E	Cell line 3
J	E	M	N	C9	C8	C7	C6	C5	C4	C3	C2	C1	N	C9	C8	C7	C6	C5	C4	C3	C2	C1	M	E	
K	E	M	N	C9	C8	C7	C6	C5	C4	C3	C2	C1	N	C9	C8	C7	C6	C5	C4	C3	C2	C1	M	E	
L	E	M	N	C9	C8	C7	C6	C5	C4	C3	C2	C1	N	C9	C8	C7	C6	C5	C4	C3	C2	C1	M	E	Cell line 4
M	E	M	N	C9	C8	C7	C6	C5	C4	C3	C2	C1	N	C9	C8	C7	C6	C5	C4	C3	C2	C1	M	E	
N	E	M	N	C9	C8	C7	C6	C5	C4	C3	C2	C1	N	C9	C8	C7	C6	C5	C4	C3	C2	C1	M	E	
O	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	
P	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	
		Compound 1											Compound 2												

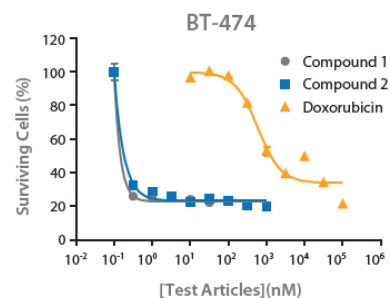
- E:** Empty well containing complete culture medium or PBS  
**M:** Medium control (blank control)  
**N:** Vehicle control with culture medium  
**C1-C9:** Nine concentration levels of test articles

# Data Analysis Examples

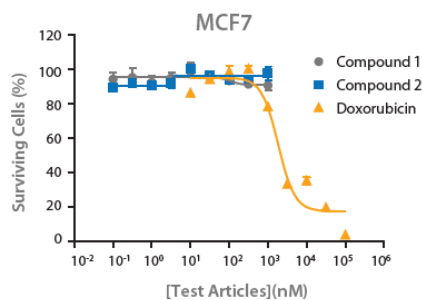
- Evaluation of HER2 inhibitor activity on breast cancer cell lines
- Relative IC<sub>50</sub> calculated



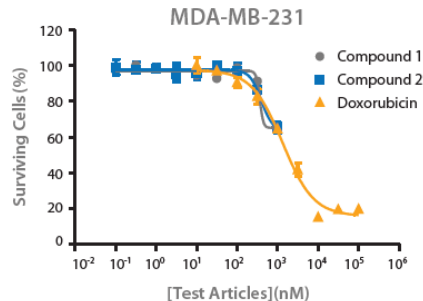
	Compound 1	Compound 2	Doxorubicin
IC <sub>50</sub>	~0.01567	~0.005407	101.4



	Compound 1	Compound 2	Doxorubicin
IC <sub>50</sub>	~0.02491	~0.001984	592.1



	Compound 1	Compound 2	Doxorubicin
IC <sub>50</sub>	109.5	~3.345	1849



	Compound 1	Compound 2	Doxorubicin
IC <sub>50</sub>	~366.3	400.1	1347

# OmniScreen Summary

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- Regular screening program to maximise cost effectiveness
- Screen any 50+ cell lines from 370
- Proprietary database (**XenoBase**) of well-characterized and validated cell line models to support selection process
- The majority of cell lines have matching well-validated *in vivo* xenograft models ready to run
- Comprehensive bioinformatic support for target identification and biomarker discovery

## Get in Touch!

- **OmniScreen** is currently enrolling client compounds for its Spring 2017 run
- Email **busdev@crownbio.com** or contact your local Account Manager to:
  - Enroll your compound
  - Find out more information about our models
  - Discuss **OmniScreen** with a scientific resource

## More Information

- Further cell line and cell line derived xenograft data can be accessed:
  - Via our online database **XenoBase** <https://xenobase.crownbio.com>
  - Via our oncology search engine **OncoExpress™** <http://oncoexpress.crownbio.com>
  - Visit **www.crownbio.com** to learn more about CrownBio's comprehensive Translational Oncology Platforms