



**CYCLACEL**

**Translating cancer biology into medicines**

**NASDAQ CYCC November 2017**

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- Apply deep understanding of cell cycle biology to disrupt
  - a. cancer cell **resistance**
  - b. **DNA repair** or evasion
- Pioneer in Cyclin Dependent Kinase inhibitors
- Focus on molecularly-defined patient populations
- Rationally designed clinical programs in solid and blood cancers
- Experienced management
- Estimated capital through YE 2019

# Development Pipeline



Program	Target/Indication	Preclinical	Phase 1/1b	Phase 2	Phase 3 or pivotal	Commercial Rights
<b>CYC065</b> iv and oral CDK2/9 inhibitor	Solid tumors (FiH)	RPh2D				Worldwide
	<b>Mcl-1</b> ↑ RR CLL ± Bcl inhibitor	CYC065+venetoclax RR CLL				
	<b>Cyclin E</b> Ovarian, breast, etc.	CYC065	Ovarian			
	<b>DDR*: BRCA+ve</b> Breast, ovarian, pancr.	CYC065 + sapacitabine				
	<b>DDR*: BRCA+ve</b> Breast, ovarian, pancr.	+ PARPi				
<b>sapacitabine</b> nucleoside analogue	<b>DDR*: BRCA+ve</b> Breast, ovarian, pancr.	sapacitabine + seliciclib				Worldwide (except Japan)
	<b>AML</b> unfit for chemo, ≥ 70y	Data Analysis				
<b>CYC140</b> PLK1 inhibitor	Solid and blood cancers	IND-ready	Ph1 FIH			
<b>Investigator sponsored trials (IST)</b>	<b>Seliciclib (CYC202)</b>	Cushings disease, RA, cystic fibrosis				Worldwide
	<b>CYC065</b> MYCN amplified	CYC065	Neuroblastoma			
	<b>CYC065</b> MCL-1 ↑	CYC065	MLL-r leukemias			



\* DDR=DNA Damage Response

# Cyclin Dependent Kinase Inhibitor Transcriptional Regulation Program

# Cyclin Dependent Kinase inhibitors (CDKi)



2001 Nobel Prize for Physiology & Medicine culminating in approved Rx

Paradigm-shift in breast cancer: CDK4/6i-based combinations with AI

- IBRANCE® (palbociclib, PFE, approved 2015, ~\$2.1bn 2016 sales)
- KISQALI® (ribociclib, NVS), VERZENIO® (abemaciclib, LLY) - approved 2017

CYCC's CDK2/9i strategy: overcome **resistance** via regulating transcription

- Seliciclib 1<sup>st</sup> Gen, signals of anticancer activity (Ph 2)
- CYC065 2<sup>nd</sup> Gen, more potent, better profile than seliciclib (Ph 1)

- CDK4/6 inhibitors → senescence → eventually resistance
- In many cancers resistance correlated with:
  - ↑ expression of pro-survival proteins (Bcl-2, Bcl-XL, **Mcl-1**, etc.) and/or
  - addiction to oncogenes (incl. **MYC**, **cyclin E** amplification)
- First Bcl-2 inhibitor: venetoclax (ABBV, for CLL, does not ↓ Mcl-1)
- Competitive race to develop Mcl-1 inhibitors
- CYC065:
  - *1st CDKi to ↓ Mcl-1 in patients with signals of clinical benefit*

\* Source: Cyclacel data on file.

n=26 heavily pretreated patients with advanced solid tumors

- Determined safety, DLT, PK in 7 DL, est. RP2D; DL7 MTD reversible neutropenia
- Treated n=13 in DL6 cohort
- Demonstrated target engagement and consistent **Mcl-1 suppression** over 24h after single dose in 11/13 evaluable DL6 patients
- Anticancer activity observed in 7/13 DL6 patients, including: #
  - **5 with ovarian cancer, of which 1 with MYC amplification,**
  - **1 with parotid gland and 1 with submandibular gland cancer.**
  - Also 1 with cyclin E/Mcl-1 amplified ovarian cancer achieved 40% CA125 ↓

\* Source: Cyclacel data on file. # Excludes another MYC amplified patient with laryngeal cancer at DL4.

## ***Hematological malignancies:***

- 1 Combination with **venetoclax**, i.e. relapsed/  
refractory CLL (Mcl-1 ↑)

## ***Solid tumors:***

- 2 Selected Cyclin E ↑ solid tumors, i.e. breast, uterine  
(USC)
- 3 Selected Mcl-1 ↑ or MYC ↑ solid tumors, i.e.  
neuroblastoma, ovarian, etc.

## *CDK4/6 isoform*

**palbociclib (PFE), ribociclib (NVS), abemaciclib (LLY)**

Approved in combination with letrozole for ER +ve Her2 -ve advanced or met BC

**trilaciclib (GTHX) Ph1/2**

## *CDK2/9 transcriptional isoform*

**CYC065 (CYCC 2G) Ph1**

**seliciclib (CYCC 1G) Ph2**

**dinaciclib (pan CDK, MRK) Ph3**

**BAY1143572 (CDK9, BAY) Ph1**

*Other (pan CDK or selective):*

**SY1365 (CDK7, Syros);**

**voruciclib (CDK4/6/9, MEI Pharma)**

# DNA Damage Response (DDR) Clinical Program

# DNA Damage Response (DDR):

## *Overcoming Cancer DNA Repair & Evasion*



*Cancer cells evolve, eventually becoming immortal by blocking DNA repair*

*SoC for HR deficient cancers (incl. BRCA1, -2): PARP inhibitors in ~ 50% of patients*

### ***CYCC DDR strategies:***

- CYC065 CDKi: modulate DNA repair via HR, NHEJ, etc. pathways
- ↓ expression of HR DNA repair genes (BRCA1 and BRCA2)
- Sapacitabine best clinical data: in BRCA +ve patients with various cancers

### ***Clinical translation possibilities:***

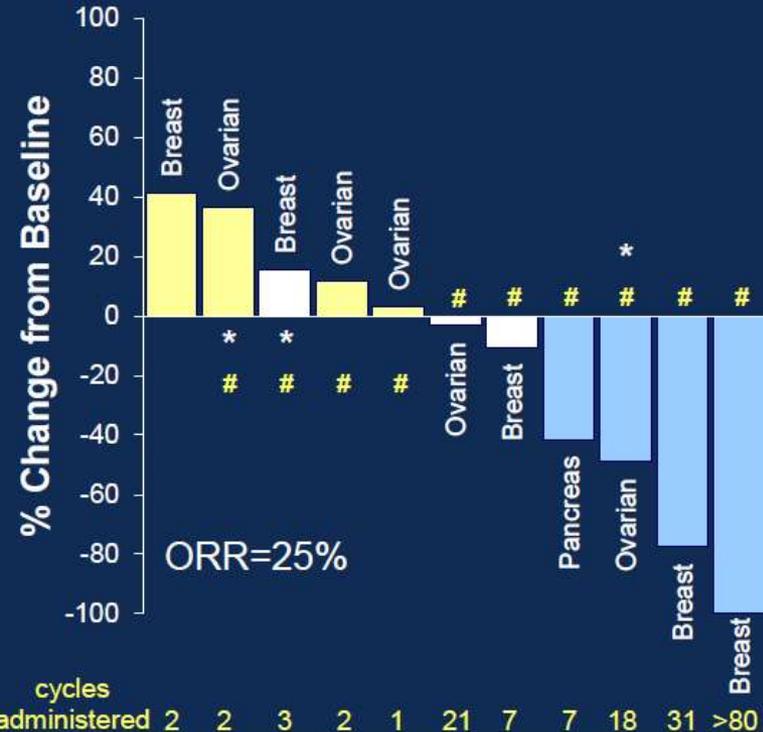
- Single agent in sensitive cancers
- Combinations with SoC

## RECIST Evaluable BRCA Carriers

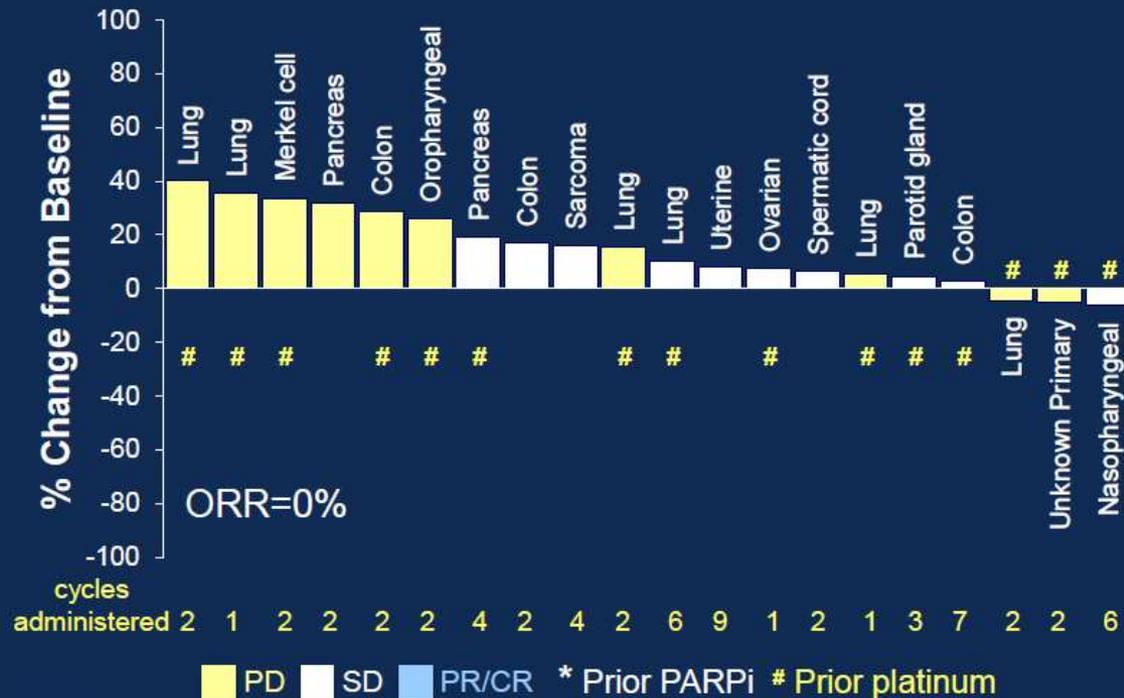
Cancer	Best Response	Prior Treatment	Total cycles
<b>Part 1</b>			
	(n=16)		
Breast	CR	adriamycin, cyclophosphamide, paclitaxel, cisplatin	>80
Breast	PR	adriamycin, cytoxan, paclitaxel, carboplatin	31
Ovary	SD	paclitaxel, carboplatin, gemcitabine	21
Ovary	PR	paclitaxel, carboplatin, gemcitabine, topotecan, iniparib	18
Breast	SD	tamoxifen, raloxifene, anastrozole, adriamycin, Cytoxan, paclitaxel, carboplatin, navelbine	7
Pancreas	PR	gemcitabine, 5-FU, oxaliplatin	7
<b>Part 2</b>			
	(n=28)		
Breast	PR	adriamycin, cytoxan, paclitaxel, capecitabine, irinotecan, ABT-888 (PARP inhibitor), MPDL3280A	>19
Ovary	SD	paclitaxel, carboplatin, doxil	22
Breast	SD	adriamycin, cytoxan, capecitabine, faslodex	12
Ovary	SD	paclitaxel, carboplatin, doxil, gemcitabine, topotecan, cytoxan, avastin	11
Ovary	SD	paclitaxel, carboplatin, doxil, olaparib (PARP inhibitor), cediranib	8
Ovary	SD	paclitaxel, carboplatin	4
Ovary	SD	paclitaxel, carboplatin, doxil, gemcitabine, alimta, cytoxan, avastin, olaparib (PARP inhibitor)	4
Pancreas	PR	gemcitabine, abraxane, docetaxel	4
Pancreas	SD	gemcitabine, cisplatin, abraxane, folfox, TH-302	4

## Best Response (all cycles)

### Part 1 BRCA carriers



### Part 1 Non-BRCA carriers



PRESENTED AT: ASCO ANNUAL MEETING '16

Presented by: Sara M. Tolaney, MD, MPH

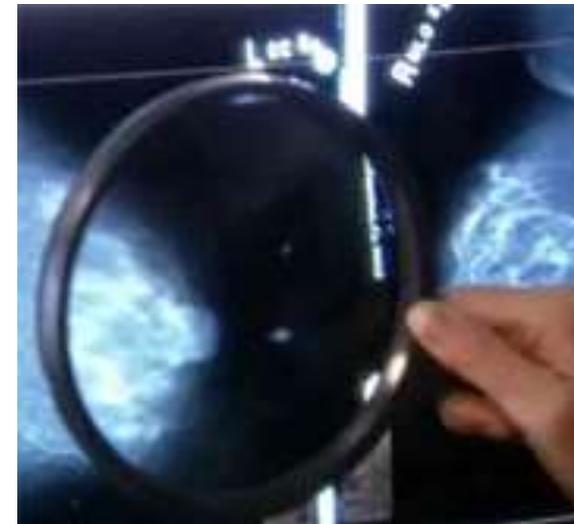
\* Source: Tolaney S et al, JCO 34, 2016 (suppl; abs. 2503).

# DDR: Rational combo of sapacitabine + CDK2/9 inhibitor

*Activity in HR-repair deficient tumors \**



- All-oral regimen, complementary mechanisms:  
**sapacitabine's** dual MoA of DNA SSBs<sup>#</sup> and cell cycle arrest plus CDKi modulation
- Parts 1 & 2 durable clinical benefit (PRs & prolonged SD) in patients with BRCA +ve:  
**breast, ovarian, pancreatic cancers**
- Part 3 started: revised schedule including BRCA +ve ovarian, pancreatic cancer patients



*Potential line extensions with CYC065 in lieu of seliciclib*



\* Source: Tolaney S et al, *J Clin Oncol* 34, 2016 (suppl; abstr 2503); Shapiro et al, *AACR Proceedings*, 2013, LB-202. HR=homologous recombination. # Single-strand breaks

# Sapacitabine in AML

# Sapacitabine in AML (SEAMLESS Ph 3 data)

*Optionality from potential regulatory submission*



- ✓ Increase in median OS (primary endpoint) did not reach stat sig
- ✓ Doubling of CR rate (secondary endpoint)
- ✓ Improved median OS in large (2/3 of study) prospectively defined subgroup based on WBC level
- Karyotype analysis in progress followed by final analysis
- Oral presentation at ASH Annual Meeting 2017
- Determine submissibility to regulatory authorities
- Pre-submission End of Phase 3 meetings

*Source: Cyclacel press releases and data on file.*

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# Financials

# Financial Position & Capitalization

**Sept 30, 2017 cash & cash equivalents: \$26.0m<sup>1</sup>**

**Current Operating cash burn (excludes non-cash items)**

- ✓ 2014: ~ \$18.7m annual<sup>2</sup>
- ✓ 2015: ~ \$14.5m annual<sup>2</sup>
- ✓ 2016: ~ \$10.1m annual<sup>2</sup>
- 2017: ~ \$ 8.0m annual<sup>3</sup>

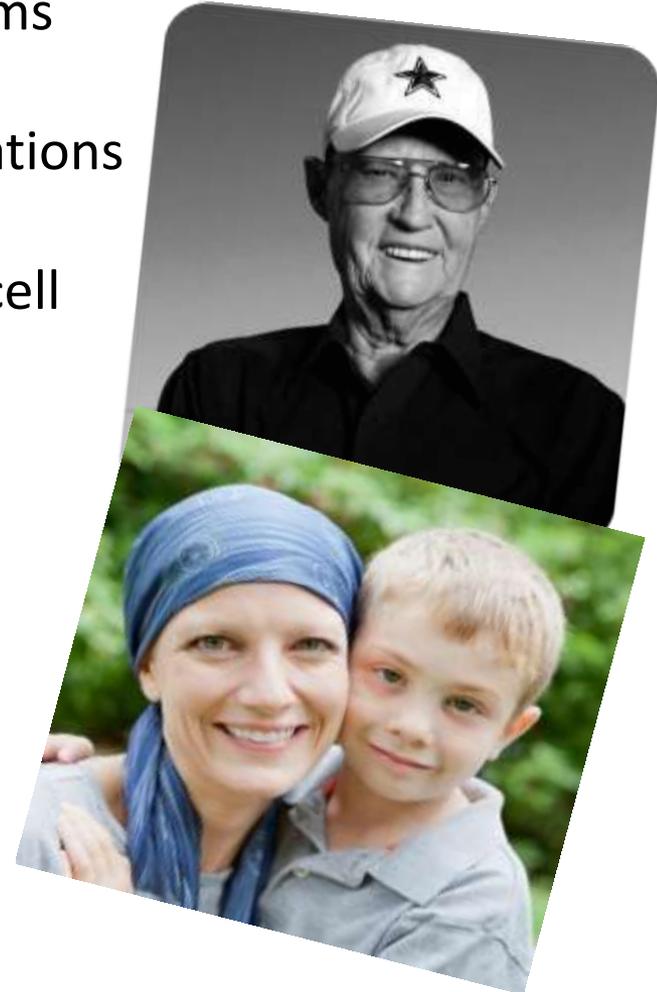
**Fully diluted shares: ~ 20.0 million<sup>1,4</sup>**

**No debt**

1. 10Q
2. 10-K
3. Company estimate
4. Common stock outstanding: 11.9m

# Investment Thesis

- Clinical stage CDKi and DDR oncology programs
- Targeting molecularly-defined patient populations
- Treat difficult cancers and overcome cancer cell resistance & DNA repair
- CDK inhibitors: validated drug class
- Competitively positioned
- Significant market opportunities



# Key Milestones



- Start CYC065 Ph 1b in RR CLL combo with venetoclax
- CYC065 Phase 1 data solid tumors
- ✓ Start Part 3 in BRCA +ve cancers beyond breast
- Sapacitabine/selaciclib update BRCA +ve breast cancer
- CYC140 (PLKi) IND submission
- Sapacitabine AML ASH data; determine submissibility

# THANK YOU

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