



Translating cancer biology into medicines

NASDAQ:CYCC | July 2017

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- We have filed a Registration Statement on Form S-1 with the SEC, including a preliminary prospectus dated May 26, 2017 (the "Preliminary Prospectus") and subsequent amendments S-1/A dated June 30, 2017 and July 7, 2017, with respect to the offering of our securities to which this communication relates. Before you invest, you should read the Preliminary Prospectus (including the risk factors described therein) and, when available, the final prospectus relating to the offering, and the other documents filed with the SEC and incorporated by reference into the Preliminary Prospectus, for more complete information about us and the offering. You may obtain these documents, including the Preliminary Prospectus, for free by visiting EDGAR on the SEC website at <http://sec.gov>.
- Alternatively, we or any underwriter participating in the offering will arrange to send you the prospectus if you request it by contacting Ladenburg Thalmann & Co. Inc., 277 Park Ave, 26th Floor, New York, NY 10172 or by email at prospectus@ladenburg.com.

- Mission: exploit cell cycle biology to disrupt cancer cell immortality
- Pioneer in Cyclin Dependent Kinase inhibitors
- Focus on genetically-defined patient populations
- Rationally designed single agents/combinations in liquid & solid cancers
- CDK inhibitor and DNA Damage Response clinical stage programs
- Experienced management, estimated capital through YE 2018

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, approved 2017)

CYCC's CDK2/9i portfolio strategy: address key issue of **resistance**

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

Pipeline



Program	Target/Indication	Preclinical	Phase 1/1b	Phase 2	Pivotal	Rights
CYC065 (CDKi)	Solid tumors (FIH)	RP2D				Worldwide
	Mcl-1 CLL	CYC065 + venetoclax RR CLL				
	Mcl-1 /Cyclin E solid tumors	CYC065	Ovarian			
	MYCN / Mcl-1 NB / MLL-r leukemias	CYC065	IST			
	DDR*: HRD+ve Breast, ovarian,pancreatic	CDKi + sapacitabine				
	DDR*: HRP+ve Breast, ovarian	+ PARPi				
Sapacitabine	AML	Data Analysis				
CYC140 (PLK1 inhibitor)	Solid & liquid cancers	IND-ready	Ph1 FIH			Worldwide
Seliciclib (CDKi)	Cushings disease, cystic fibrosis, RA	Investigator Sponsored Trials (IST)				



*DDR=DNA Damage Response

CDK4/6 isoform

- **palbociclib (NYSE:PFE); ribociclib (SWX:NOVN)**
- Approved in combination with letrozole for ER +ve Her2 -ve advanced or met BC
- **abemaciclib (NYSE:LLY) Ph3**
- **trilaciclib (NASDAQ:GTHX) Ph1/2**

CDK2/9 transcriptional isoform

- **CYC065 (CYCC 2Gen) Ph1**
- **seliciclib (CYCC 1Gen) Ph2**
- **dinaciclib (pan CDK, MRK) Ph3**
- **BAY1143572 (CDK9, BAY) Ph1**

* Source: Cyclacel data on file.

Second generation, available by i.v. and oral route

Unique kinase selectivity

- CDK2 (cell cycle control)
- CDK9 (regulation of transcription & survival)

Addressing cancers:

- **dependent on Mcl-1 pro-survival protein**
- **or addicted to oncogenes**

Differentiation vs. CDK4/6 or pan-CDK inhibitors

- Selective pro-apoptotic, p53-independent MoA

Completed Ph 1, FIH study, i.v. in advanced patients with solid tumors

- Established safety, target engagement, RP2D

Robust IP position; exclusivity beyond 2030

1. Mcl-1 or MYC dependent (↑) liquid & solid cancers

- A. Venetoclax (Bcl-2i) treated CLL* with Mcl-1 ↑
- B. Selected Mcl-1 amplified solid tumors, i.e. ovarian
- C. Cancers addicted to *MYCN*, i.e. neuroblastoma

2. Cyclin E amplified (↑) solid cancers

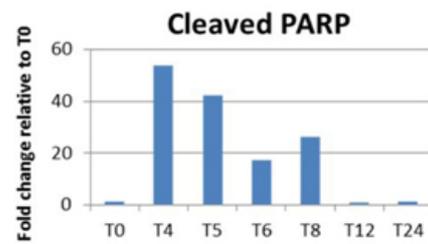
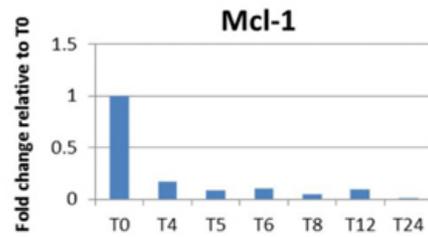
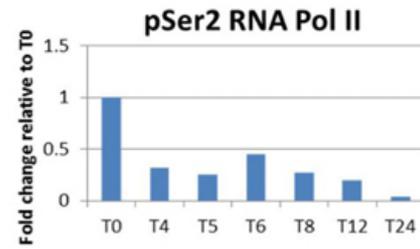
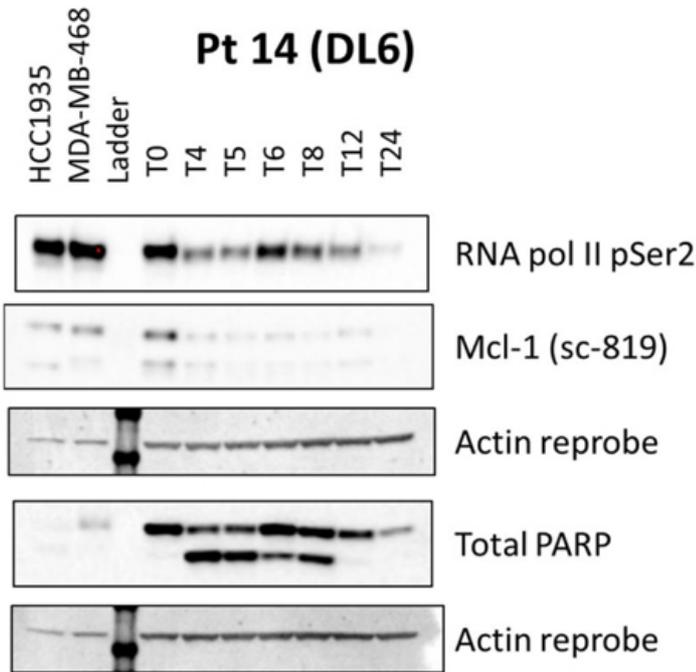
- A. HGSOC (*BRCA mutually exclusive, PARPi not option*)
- B. Selected Cyclin E ↑ solid tumors, i.e. breast HER2+
- C. CDK4/6i resistant breast cancer

* Also *MLL-r leukemias, lymphoma, and multiple myeloma.*

n=23 heavily pretreated patients with various advanced solid tumors

- Determined safety, DLT, PK in 7 DL, established RP2D
- Treated n=10 in total at DL6 cohort; DL7 MTD neutropenia
- Demonstrated target engagement and consistent **Mcl-1 suppression** over 24h after single dose in 7/9 DL6 patients
- Anticancer activity observed in patients with:
 - **Mcl-1 ↑ (ovarian),**
 - **Myc ↑ (larynx) and**
 - **cyclin E / Mcl-1 ↑ (ovarian) amplified tumors**

Similar CDK2/9 CYC065 CDK selectivity vs. seliciclib but 40x higher potency & improved pharmaceutical properties.



Source: Cyclacel data on file. Observations are representative for the cohort.

CYC065 mechanism of action



Inhibits CDK9-mediated oncogenic transcription

- Rapidly induces apoptosis; preferentially kills cancer cells over non-cancerous cells
- ↓ anti-apoptotic proteins (Mcl-1, XIAP) & oncogenes (MYC, cyclins)



Mcl-1
MYC
Cyclins

Inhibits CDK2 (cell cycle control)

- Targets cyclin E addicted, drug resistant tumors



Cyclin E

Potentiate effects of DNA damaging agents

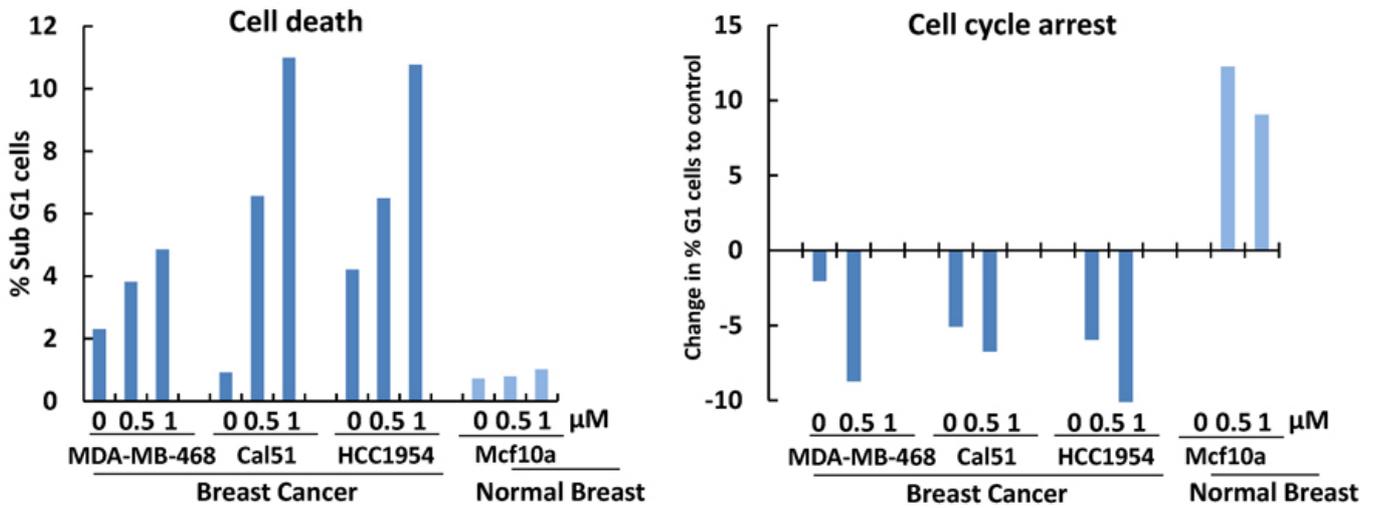
- ↓ expression of HR DNA repair genes (BRCA1 and BRCA2)



BRCA1
BRCA2

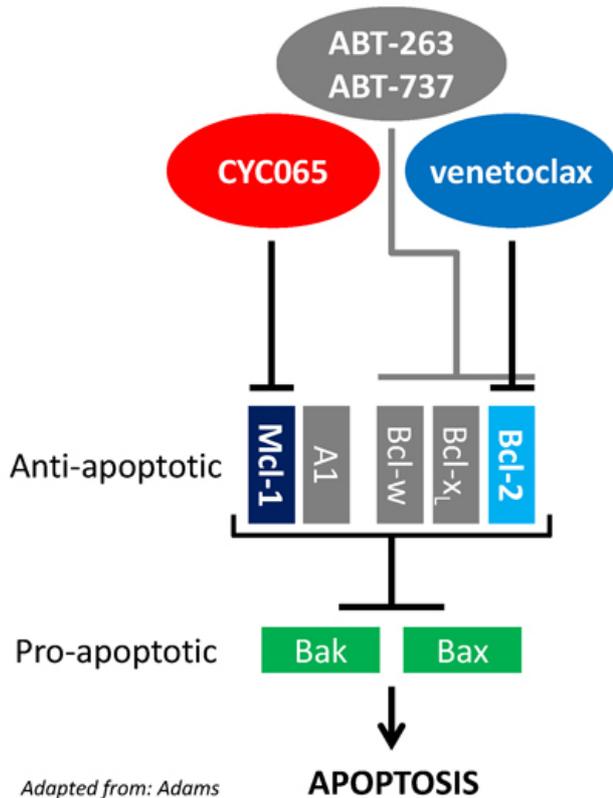
Cyclacel data on file.

CYC065 response in cancer vs. normal cells



- CYC065-dependent apoptosis induction in cancer cells but not in non-cancer Mcf10a
- CYC065 caused G1 arrest in non-cancer Mcf10a cells
- Similar trend observed in other cancer and non-cancer cell lines

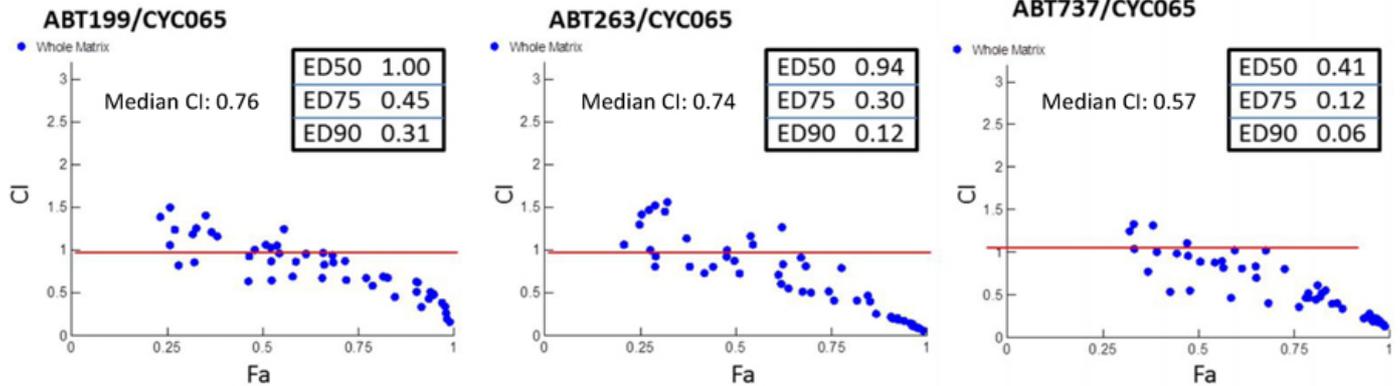
MacKay et al. SABCS 2015



Adapted from: Adams & Cory, *Oncogene* 2007

- CLL unmet medical need
 - 30% all adult leukemias; 70% mortality rate; 70% aged > 65 years
- Venetoclax ORR: 71-79%; CR: ~20% (R/R CLL with 17p del)¹
- Tumor microenvironment ↑ Mcl-1 diminishing venetoclax effect^{2,3}
- Mcl-1 ↓ overcomes venetoclax resistance (stimulated CLL)³
- CYC065 ↓ Mcl-1 effectively & durably (>24h) in Phase 1 patients at well tolerated doses
- CYC065 and venetoclax synergistic in CLL (incl. 17p del), multiple leukemia & lymphoma cell line models^{4,5}

¹ Roberts et al. 2016. ² Smith et al. 2007; ³ Oppermann et al. *Blood* 2016, ⁴ Frame et al. *AACR* 2014, ⁵ Zheleva et al. *SOHO* 2015.



Example $F_a:CI$ plots & median CI values for THP-1 (AML) cell line. Combination Index (CI) values calculated using Chou & Talalay method. CI of 0.9 to 1.1 indicate additivity, below 0.9 synergy.

- CYC065 synergy with venetoclax (ABT-199) in AML & ALL cell lines
- CYC065 synergy with Bcl-2/Bcl-xL/Bcl-w inhibitors ABT-263 or ABT-737
- CYC065 synergies demonstrated in several acute leukemia cell lines (AML: THP-1, HEL; ALL: Jurkat, SEM)

Source: Frame et al, SOHO, 2014, Abs 209

CYC065 transcriptional regulation of MYC

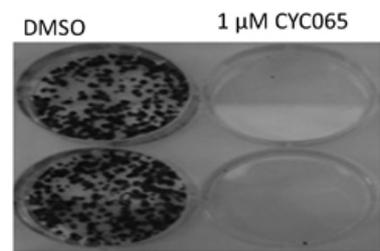
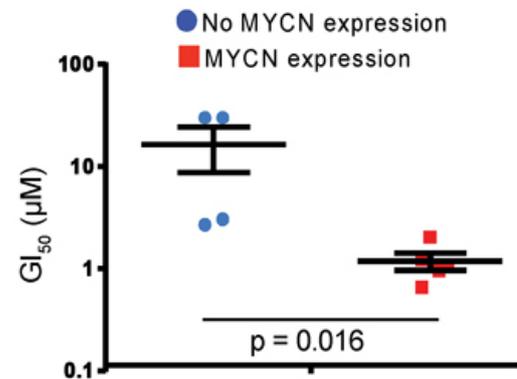
Very common genomic alteration in aggressive tumors



- Amplification of MYC family oncogenes: poor clinical outcome in neuroblastoma (NB), SCLC, breast, prostate
- No therapeutics against *MYCN* or MYC reported
- CDK9 involved in *MYCN* transcriptional regulation
- *MYCN* ↑ NB cells highly sensitive to CYC065
- CYC065 inhibits NB cell proliferation, induces apoptosis and ↓ *MYCN* protein
- CYC065 causes tumor regression & prolongs survival in *MYCN*-amplified NB models

Potent *in vitro* and *in vivo* anti-tumor activity suggest that CYC065 may have therapeutic potential in NB with *MYCN* oncogene amplification.

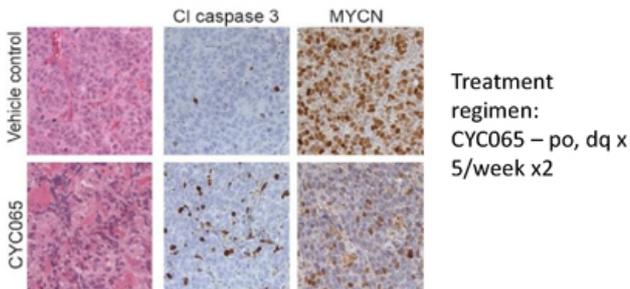
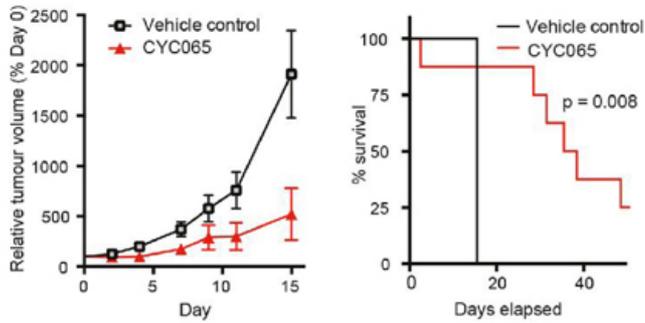
MYCN ↑ neuroblastoma highly sensitive



ICR The Institute of Cancer Research

Poon et al. 4th Neuroblastoma Society Symposium 2015. 8 h treatment. SRB colony formation assay after 72 h.

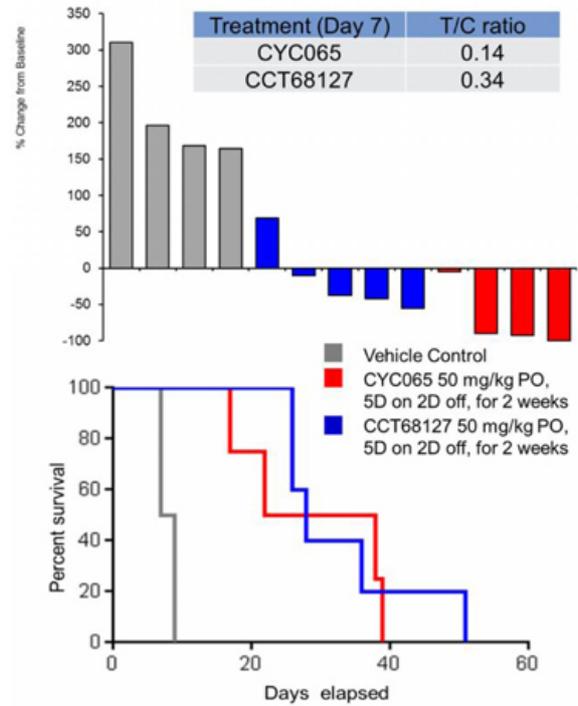
Kelly xenograft (MYCN amplified)



Poon et al. 4th Neuroblastoma Society Symposium 2015, 25-27 Nov, Newcastle.

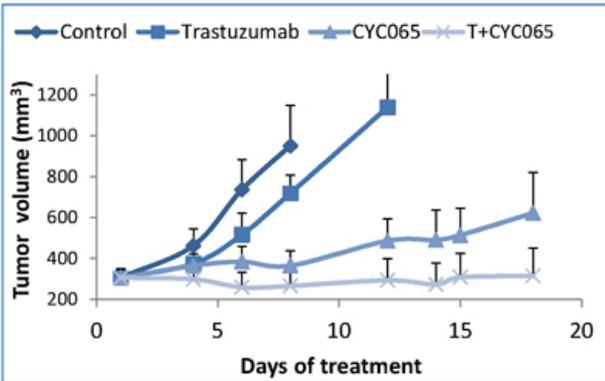
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Th-MYCN GEMM of NB

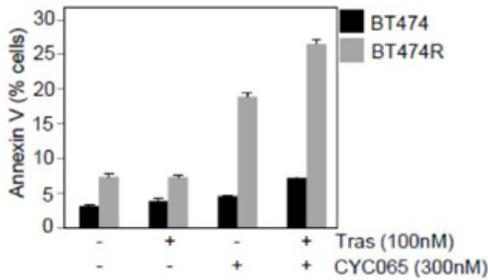


Cyclacel data on file.

Trastuzumab resistant Her2+ breast cancer

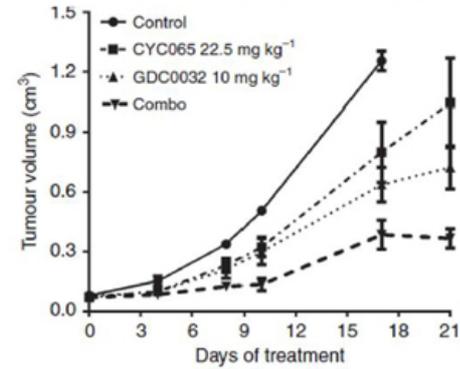
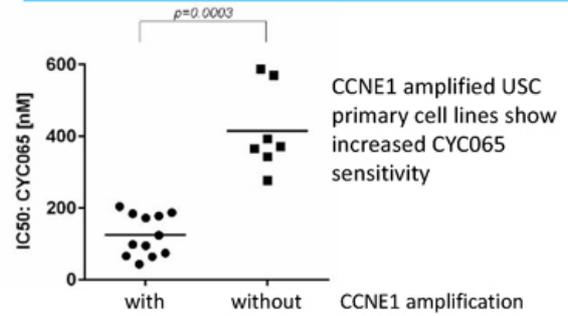


CYC065 alone or in combination with trastuzumab causes very effective *in vivo* tumor growth inhibition of BT474R trastuzumab resistant HER2+ BC cell line, and increased apoptosis *in vitro*.



Source: *Journal of Clinical Investigation*, 2016

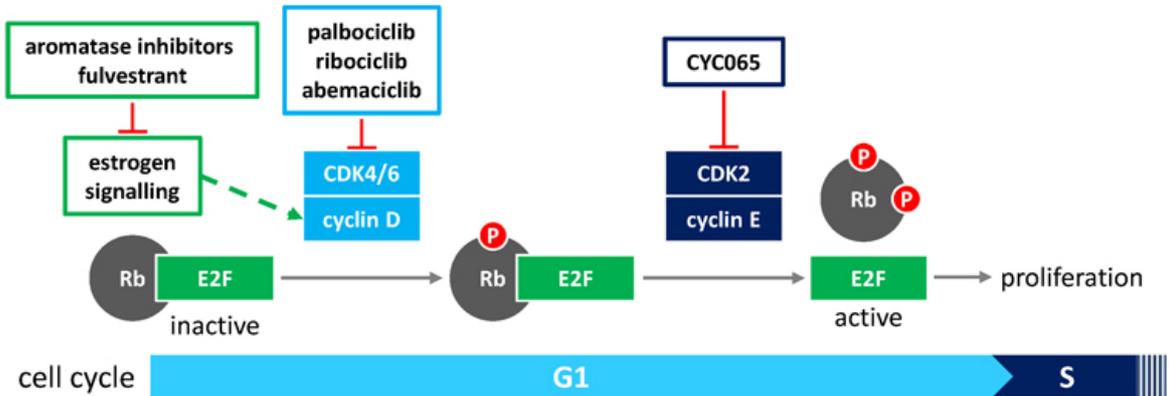
Drug-resistant Uterine Serous Carcinoma



CYC065 active as a single agent and in combination ($p < 0.03$) in ARK-1 (trastuzumab-resistant, PI3K mutant) xenograft model

Source: *Cocco et al., AACR, 2015, Abs 3103; Cocco et al., BJC, 2016*

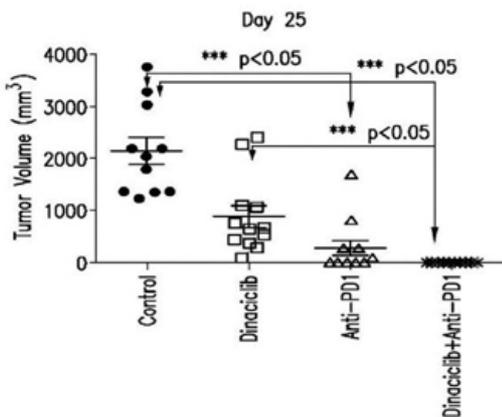
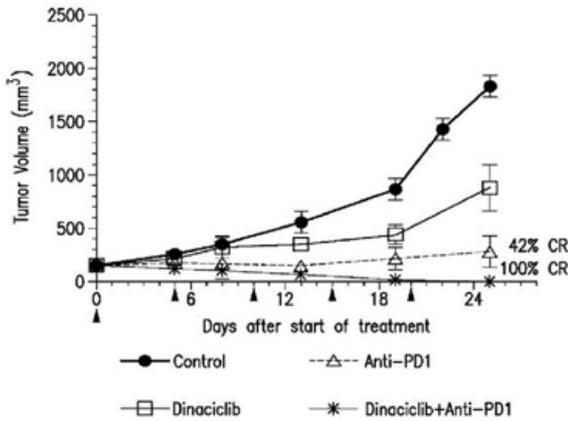
CDK4/6i + AI resistance



CDK4/6i+AI inhibit proliferation; but senescence → emergence of resistance, i.e. CDK2/cycE ↑
 CDK2 activation or cyclin E amplification/overexpression → acquired/intrinsic resistance to
 CDK4/6i in breast and ovarian cancer and AML models*

Higher CCNE1 gene expression observed in BC resistant to neoadjuvant palbociclib + anastrozole*
 Cyclin E mediated resistance to letrozole in HR+ breast cancer is reversed by seliciclib*

*Source: Herrera-Abreu et al. *Cancer Res.* 2016; Konecny & Slamon *Clin. Cancer Res.* 2011; Taylor-Harding et al. *Oncotarget* 2015; Caldon et al. *Mol. Cancer Ther.* 2012; Wang et al. *Blood* 2007; Ma et al. *Clin Cancer Res.* 2017; Akli et al. *Clin Cancer Res.* 2010.



CDK2/9i synergy with IO agents

- Dinaciclib synergistic with anti-PD-1 in mouse syngeneic tumor models
- Dinaciclib induces immunogenic cell death (ICD) with evidence of ↑ T cell infiltration and dendritic cell activation in tumors¹
- MC38 mouse colorectal carcinoma in C57BL/6 mice, 12 per group, dinaciclib 40 mg/kg, anti-PD-1 5 mg/kg each dosed once daily for 25 days²
- Phase 1 open-label study evaluating safety and efficacy of pembrolizumab + dinaciclib in relapsed or refractory CLL, MM, DLBCL³

(1) Hossain et al., *Cancer Res*, 2015 (2) US20160193334A (3) NCT02684617

- CDKis: validated drug class
- Targeting genetically-defined patient populations
- Significant market potential
- Potential to treat difficult cancers and overcome cancer cell resistance
- Single agent and combination opportunity

DNA Damage Response (DDR) Clinical Program

Cyclacel's CDK inhibitor-based DDR strategies:

- Modulate DNA repair via HR, NHEJ, etc. pathways
- ↓ expression of HR DNA repair genes, i.e. BRCA1 / BRCA2
- ↓ anti-apoptotic survival signalling , i.e. Mcl-1

Cyclacel's oral sapacitabine may work best in HR-deficient tumors:

Clinical utility observed in combination with CDK inhibitor; future options

- Combinations with SoC, i.e. PARP inhibitors
- Single agent treatment in sensitive cancers

- Oral combo of complementary mechanisms:

sapacitabine's unique, MoA (DNA SSBs# & cell cycle arrest) combined with CDKi modulation

- Parts 1 & 2: durable clinical benefit (PRs & prolonged SD) in patients with BRCA +ve:

breast, ovarian, pancreatic cancers

- Part 3 to start: revised schedule including BRCA +ve ovarian, pancreatic cancer patients

... Plan to substitute seliciclib with CYC065 ...



* 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

RECIST Evaluable BRCA Carriers

Cancer	Best Response	Prior Treatment	Total cycles
Part 1 (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
Part 2 (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

ED AT: ASCO ANNUAL MEETING '16

Presented by: Sara M. Tolaney, MD, MPH

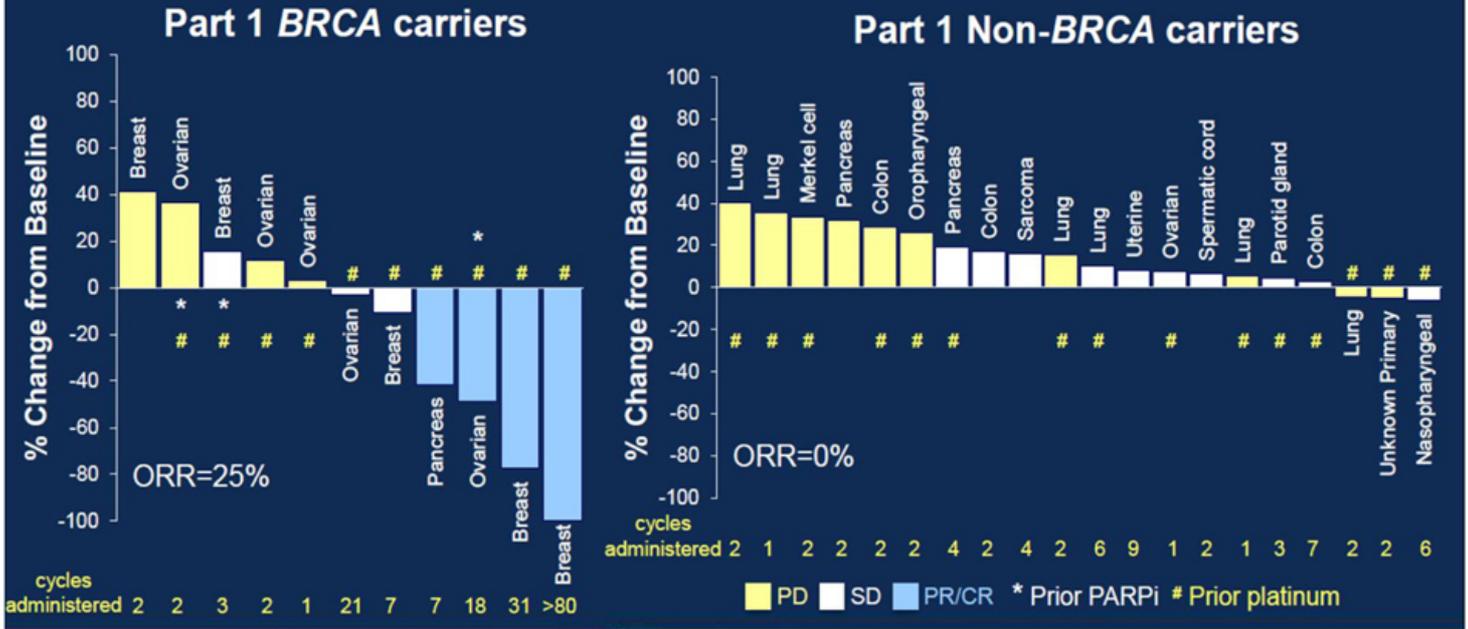
* Source: Tolaney S et al, J Clin Oncol 34, 2016 (suppl; abstr 2503).

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American Society of Clinical Oncology

Best Response (all cycles)

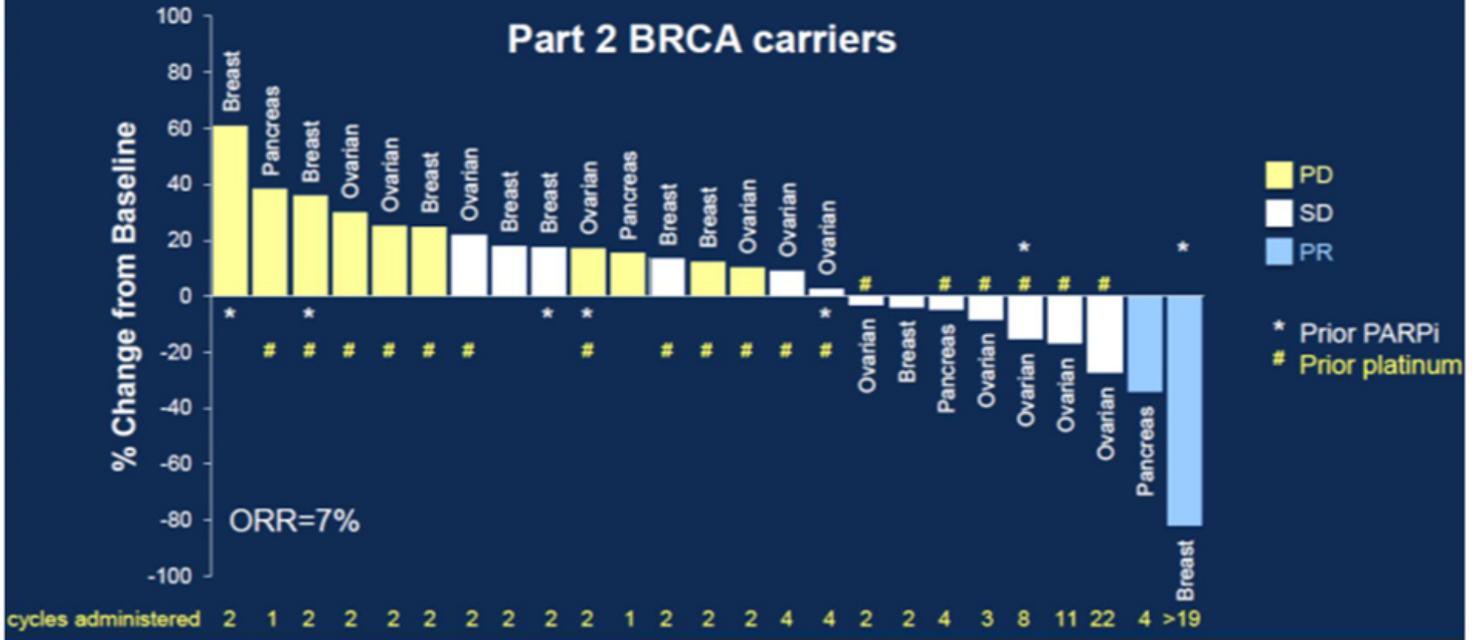


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Financials

Mar. 31 2017 *Pro Forma* Cash & cash equivalents: \$15.7m¹

Current Operating cash burn (excludes non-cash items)

✓ 2014: ~ \$18.7m annual²

✓ 2015: ~ \$14.5m annual²

✓ 2016: ~ \$10.1m annual²

✓ 2017: ~ \$ 8.0m annual³

Fully diluted shares: ~ 4.6 million^{4,5}

No debt

1. *Cyclacel press release*
2. *10-K.*
3. *Company estimate*
4. *10Q - 31 March 2017*
5. *Common stock outstanding: 4.3m.*

- CYC065 First-in-Human, Phase 1 data solid tumors
- Start CYC065 Phase 1, Part 2 in solid tumors
- Start CYC065 Ph 1b in R/R CLL combo with venetoclax
- Sapacitabine/selaciclib update BRCA+ve breast cancer
- CYC140 (PLKi) IND submission

- Transcriptional CDKi and DNA Damage Response clinical stage oncology programs
- Treat difficult cancers and overcome resistance
- Competitive positioning
- Large markets



Contact: ir@cyclacel.com. Thank you.