Cardiff Oncology™

Turning the Tide on Cancer

July 2021

Forward-Looking Statements

Certain statements in this presentation are forward-looking within the meaning of the Private Securities Litigation Reform Act of 1995. These statements may be identified by the use of words such as "anticipate," "believe," "forecast," "estimated" and "intend" or other similar terms or expressions that concern our expectations, strategy, plans or intentions. These forward-looking statements are based on our current expectations and actual results could differ materially. There are a number of factors that could cause actual events to differ materially from those indicated by such forward-looking statements. These factors include, but are not limited to, our need for additional financing; our ability to continue as a going concern; clinical trials involve a lengthy and expensive process with an uncertain outcome, and results of earlier studies and trials may not be predictive of future trial results; our clinical trials may be suspended or discontinued due to unexpected side effects or other safety risks that could preclude approval of our product candidates; risks related to business interruptions, including the outbreak of COVID-19 coronavirus, which could seriously harm our financial condition and increase our costs and expenses; uncertainties of government or third party payer reimbursement; dependence on key personnel; limited experience in marketing and sales; substantial competition; uncertainties of patent protection and litigation; dependence upon third parties; our ability to develop tests, kits and systems and the success of those products; regulatory, financial and business risks related to our international expansion and risks related to failure to obtain FDA clearances or approvals and noncompliance with FDA regulations. There are no guarantees that any of our technology or products will be utilized or prove to be commercially successful. Additionally, there are no guarantees that future clinical trials will be completed or successful or that any precision medicine therapeutics will receive regulatory approval for any indication or prove to be commercially successful. Investors should read the risk factors set forth in our Form 10-K for the year ended December 31, 2020, and other periodic reports filed with the Securities and Exchange Commission. While the list of factors presented here is considered representative, no such list should be considered to be a complete statement of all potential risks and uncertainties. Unlisted factors may present significant additional obstacles to the realization of forward-looking statements. Forward-looking statements included herein are made as of the date hereof, and we do not undertake any obligation to update publicly such statements to reflect subsequent events or circumstances.

Cardiff Oncology™

Corporate Overview

Clinical stage biotech company developing onvansertib, an oral and highly-selective PLK1 inhibitor, to treat cancers with the greatest medical needs for new therapeutic options

Cardiff Oncology At-A-Glance

Clinical-stage biotech company developing **onvansertib,** an oral, highly-selective Polo-like Kinase 1 (PLK1) inhibitor, to treat cancers with the greatest medical needs for new treatment options

Exchange	Nasdaq: CRDF
Cash, Cash Equivalents and Investments*	$125.6M
Net Cash used in Operating Activities in Q1 2021	$5.9M
Headquarters	San Diego, CA

Investment Highlights and Strategy

Fully leverage onvansertib in combination with targeted therapeutics and chemotherapies across multiple cancer indications

Onvansertib	The only oral and highly selective PLK1 inhibitor. Optimized product profile overcomes the shortcomings of prior PLK inhibitors. Broadly applicable MOA enables synergy with a wide range of therapeutic classes
Lead program: KRAS-mutated mCRC	Supported by **strong preliminary Phase 2 data** (ORR: 39%; mPFS: 9.4 months), which **compare very favorably to historical controls** (ORR: 5-13%; mPFS: 4.5-5.7 months). Program has FDA fast track designation. Updated data anticipated in Q3'21
Broad Portfolio of Indications	Ongoing **Phase 2** programs in abiraterone-resistant metastatic castrate-resistant prostate cancer and metastatic pancreatic ductal adenocarcinoma with **data readouts anticipated in Q4'21 and Q1'22**, respectively. Extensive preclinical programs have identified additional target indications
Strong Patent Portfolio	Three issued patents with anticipated extension to 2035. Evergreening of portfolio via combination therapy and methods associated with biomarker technology
Strong Balance Sheet	$125.6M in cash as of 3/31/21 with a Q1'21 spend of $5.9M. Additional $20M equity investment Q2'21 to-date
High-quality Shareholder Base	Includes institutional investors such as Acorn Bioventures[1], Caxton, Avidity, Janus, Corriente and Eventide[2]

MOA: Mechanism of action; mCRC: Metastatic colorectal cancer; ORR: Objective response rate; mPFS: Median progression free survival; [1]Acorn Bioventures 13D filed on July 2, 2020; [2]As of March 31, 2021, filed 13F - Caxton, Avidity, Janus, Corriente and Eventide

Experienced Management Team With Drug Development and Biomarker Technology Expertise

Mark Erlander, PhD
Chief Executive Officer

bioMérieux
Johnson & Johnson Pharmaceutical Research & Development

Vicki Kelemen
Chief Operating Officer

Bayer HealthCare Pharmaceuticals
dura Pharmaceuticals
Amylin
Maxim Pharmaceuticals
Agouron Pharmaceuticals, Inc.

James Levine
Chief Financial Officer

CIDARA Therapeutics
Sapphire Energy
Verenium
Goldman Sachs

Katherine Ruffner, MD
Chief Medical Officer

ALX Oncology
AstraZeneca
cti BioPharma
Seagen
Medivation

Brigitte Lindsay
Vice President of Finance

bioMérieux
ZEISS
Philips Respironics

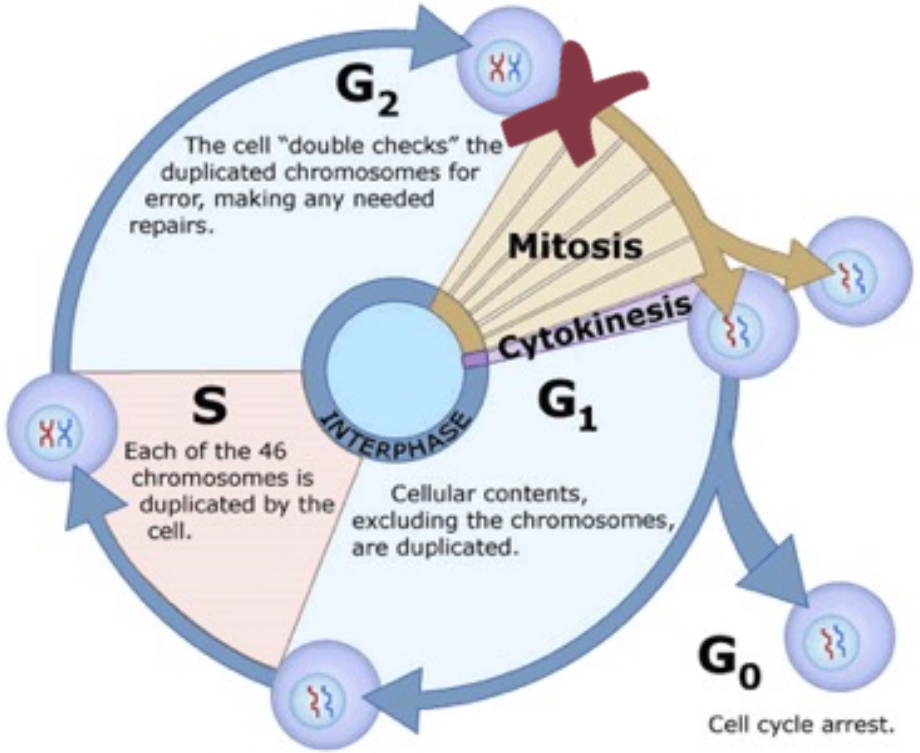
Onvansertib

Oral and highly selective PLK1 inhibitor in clinical development across multiple indications: KRAS-mutated metastatic colorectal cancer (mCRC); metastatic pancreatic ductal adenocarcinoma (mPDAC) and metastatic castrate-resistant prostate cancer (mCRPC)

PLK1 is a Proven Therapeutic Target that is Overexpressed in Most Cancers

- PLK1 is a serine/threonine kinase and master regulator of cell-cycle progression
- PLK1 controls G2/mitosis (G2/M) checkpoint
- Inhibition of PLK1 causes mitotic arrest and subsequent cell death
- Emerging data demonstrate that PLK1 is also a key regulator of cellular functions beyond mitosis that are essential for tumor growth such as DNA damage response

Inhibition of PLK1 Causes Mitotic Arrest and Subsequent Cell Death[1]



[1]Zitouni et al., Nat Rev Mol Cell Biol. 2014 Jul;15(7):433-52;

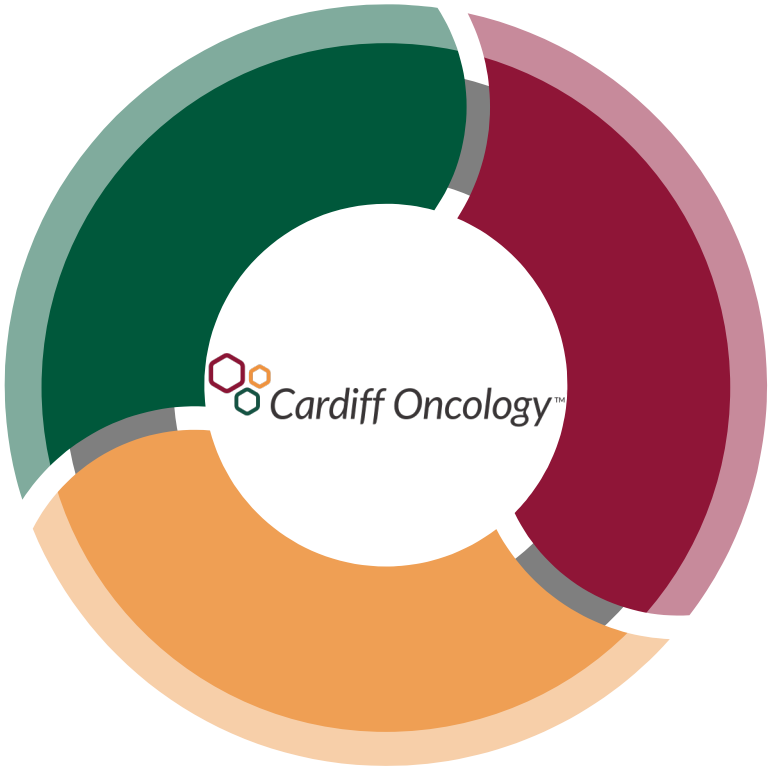
Onvansertib Overcomes the Shortcomings of Prior PLK Inhibitors

Prior generation PLK inhibitors demonstrated clinical activity but had less than optimal drug properties

	Onvansertib	Prior PLK Inhibitors
Selectivity for PLK1	✓	✗
Oral dosing	✓	✗
Flexible dose and scheduling	✓	✗
Safety and Tolerability	✓	✗

Summary of Onvansertib Safety and Tolerability Findings

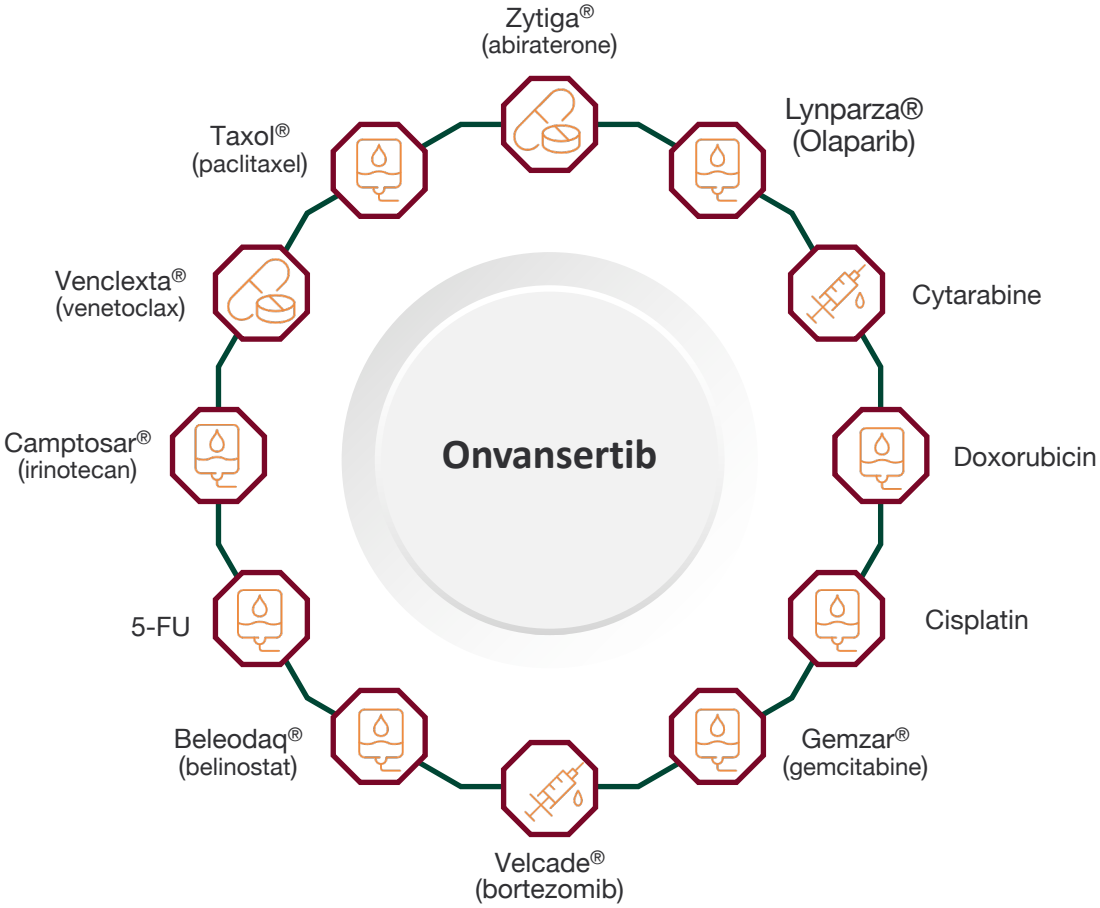
Combination regimens have been well-tolerated in clinical trials across multiple indications



- Observed toxicities have generally been mild (grade 1 or 2) and included fatigue, nausea, diarrhea
- Transient / reversible hematological toxicities (grade 3 or 4; typically resolved within ~2 weeks) and managed by dose delay, dose reduction, and/or growth factor support
  - Included neutropenia, anemia, thrombocytopenia and white blood cell decrease
  - In patients experiencing hematologic toxicities in the mCRC trial, eliminating the 5-FU bolus component of the combination regimen led to resolution of the associated adverse events in most patients
- No major or unexpected toxicities have been attributed to onvansertib

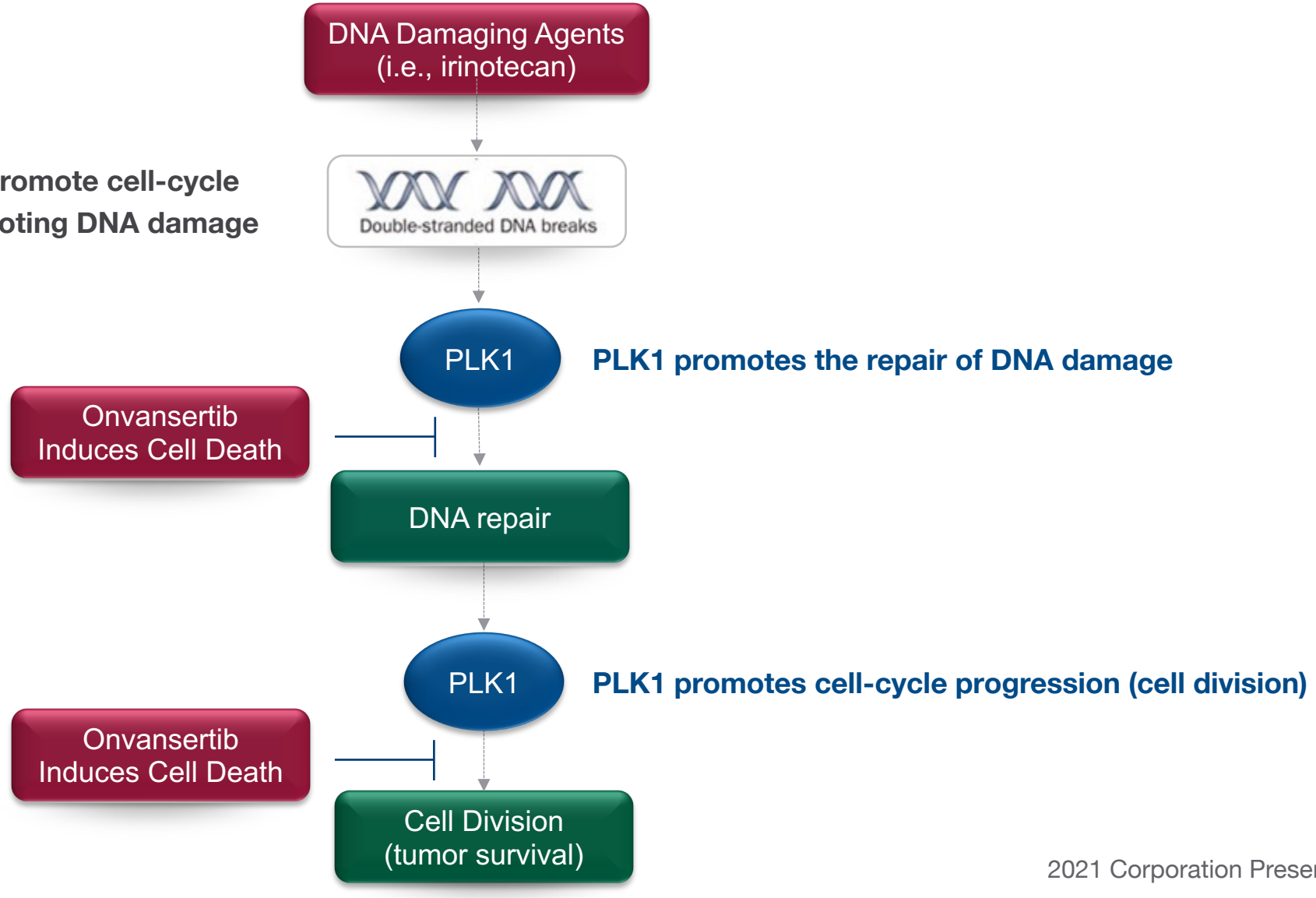
Onvansertib Synergistically Combines with Standard-of-Care Therapies

- Preclinical models indicate that onvansertib can synergize with targeted and chemo-therapies.
- The underlying mechanism for many of these synergies is due to PLK1's function in:
  - Repair of DNA damage
  - Mitotic processes
- Synergy suggests that lower doses can be used for both onvansertib and the targeted or chemotherapy; potentially decreasing AEs



Mechanism of Therapeutic Synergy Between DNA Damaging Agents and Onvansertib

DNA Damaging Agents promote cell-cycle arrest in tumors by promoting DNA damage



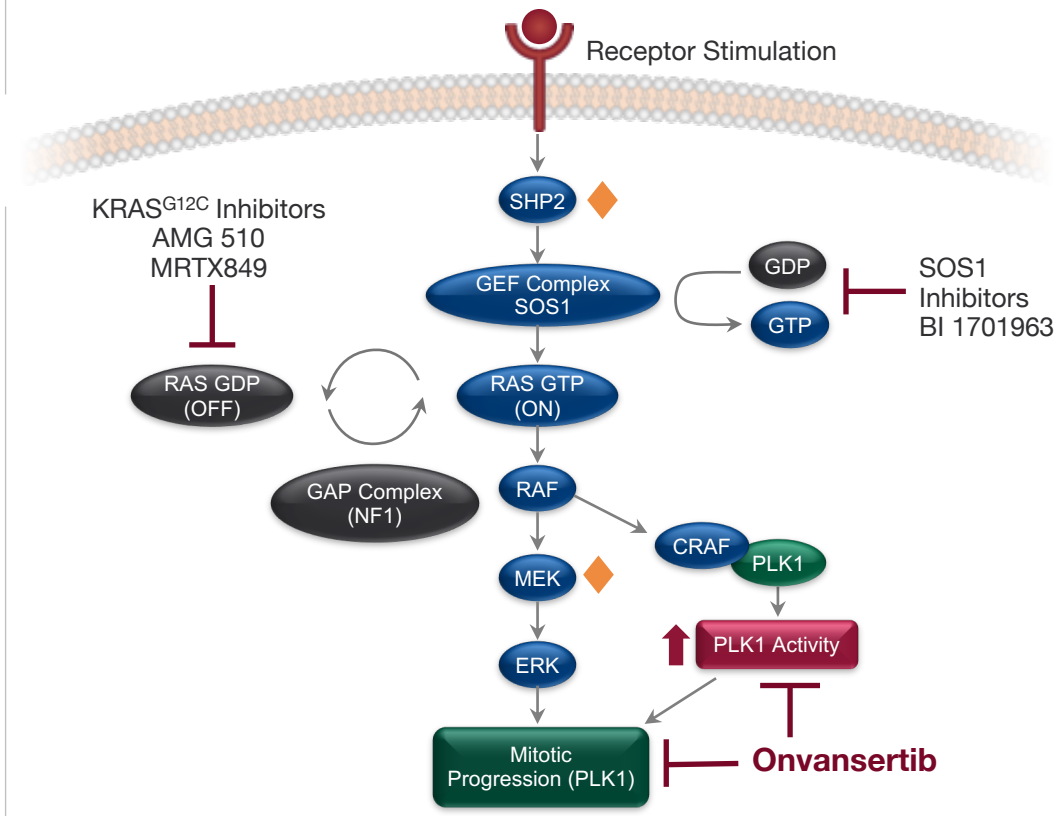
KRAS-Focused Clinical Programs

Leveraging the synergy of onvansertib when combined with irinotecan and/or 5-FU

Targeted Therapies for KRAS-mutant Patients is an Unmet Need

- KRAS Targeted drugs in development:
  - Two KRAS G12C inhibitors are currently in clinical development
    - Sotorasib (AMG510, Amgen)
    - Adagrasib (MRTX849, Miriati Therapeutics)
- KRAS G12C inhibitors have limited efficacy in mCRC patients
  - At the last data update, Sotorasib had an ORR of 7% (3 of 42 patients)[1] and Adagrasib of 17% (3 of 18 patients)[2]
  - KRAS G12C represents only 8% of KRAS mutations in CRC
- SHP2 inhibitor in combination with MEK inhibitor has had limited activity in mCRC[3]
- Onvansertib provides new potential treatment option in mCRC and other KRAS mutated cancers
  - Downstream target with synthetic lethality across KRAS mutations

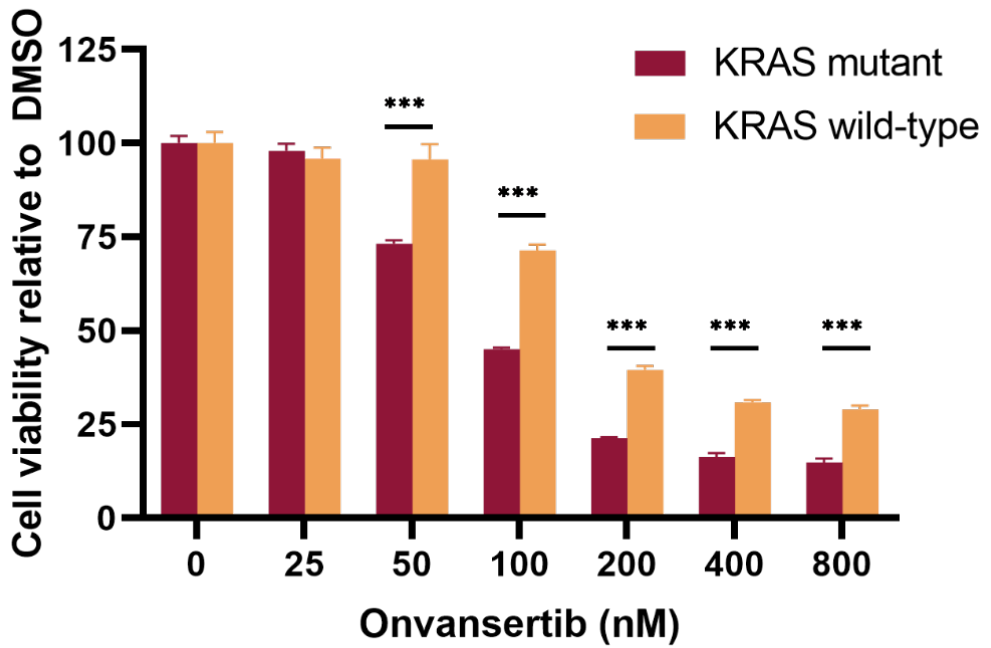
Targeting the Ras Pathway



[1]Hong et al., NEJM 2020; [2]Johnson et al., ENA 2020, #LBA-04; [3]https://www.revmed.com/pipeline/rmc-4630; mCRC: Metastatic colorectal cancer; ORR: Objective response rate; CRC: Colorectal cancer

Cells with KRAS Mutations are Hypersensitive to Inhibition of PLK1[1]

Cell Viability in Onvansertib-Treated KRAS Mutant and Wild Type Isogenic CRC Cells



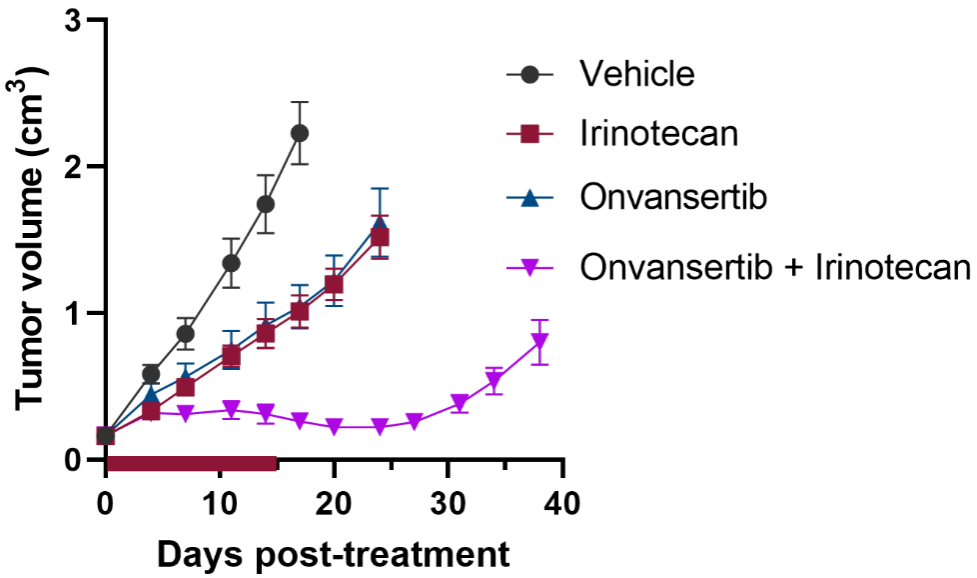
- RAS activates PLK1 through a MEK/ERK-independent mechanism
- Downstream target CRAF interacts with PLK1 and promotes PLK1 activation, leading to mitosis and tumor progression[2]

[1]Luo et al, Cell. 2009; 137 835-48; [2]Mielgo et al., Nat. Med. 2011; 17(12):1641-5; PLK1: Polo-like Kinase 1; CRC: Colorectal cancer

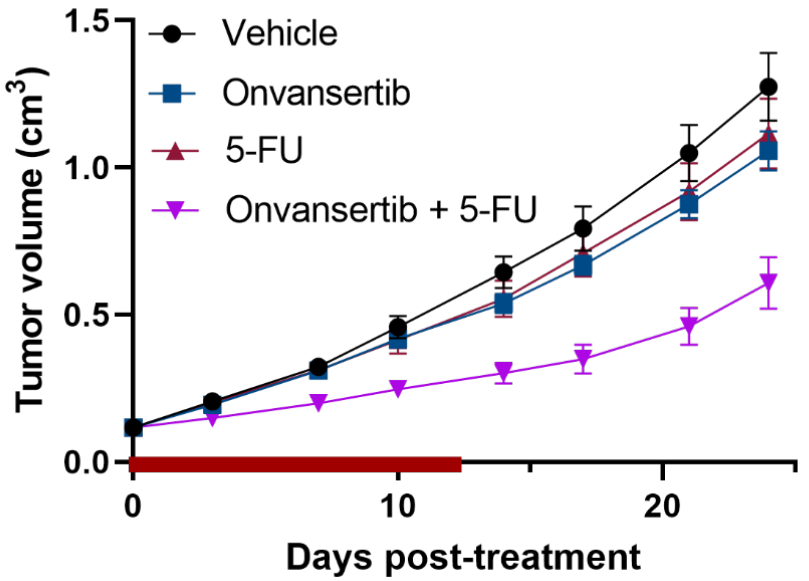
Onvansertib is Synergistic in Combination with Irinotecan and 5-FU

Synergistic in combination with Standard-of-Care FOLFIRI (irinotecan and 5-FU) in HCT-116 (with G13D KRAS mutation)

Synergy in Combination with Irinotecan



Synergy in Combination with 5-FU

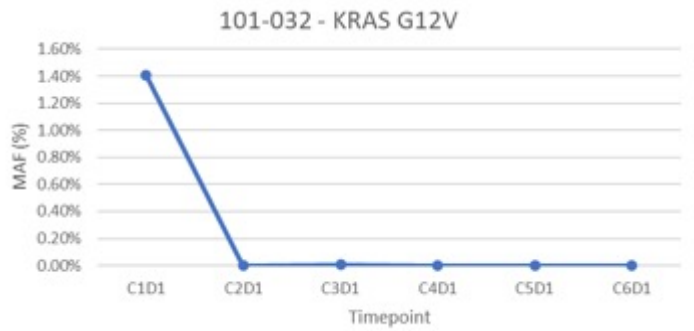


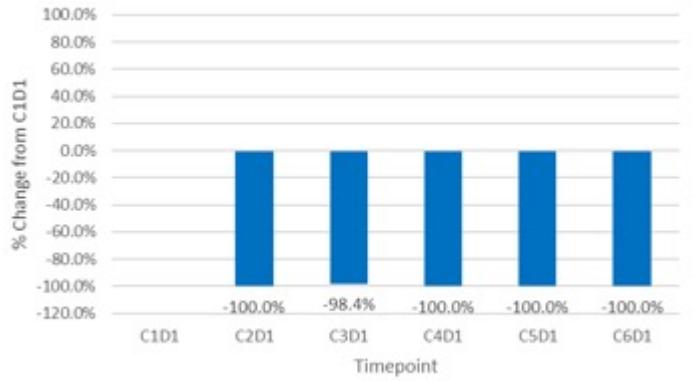
Early Decreases in Plasma KRAS Mutational Burden are Associated with Clinical Benefit

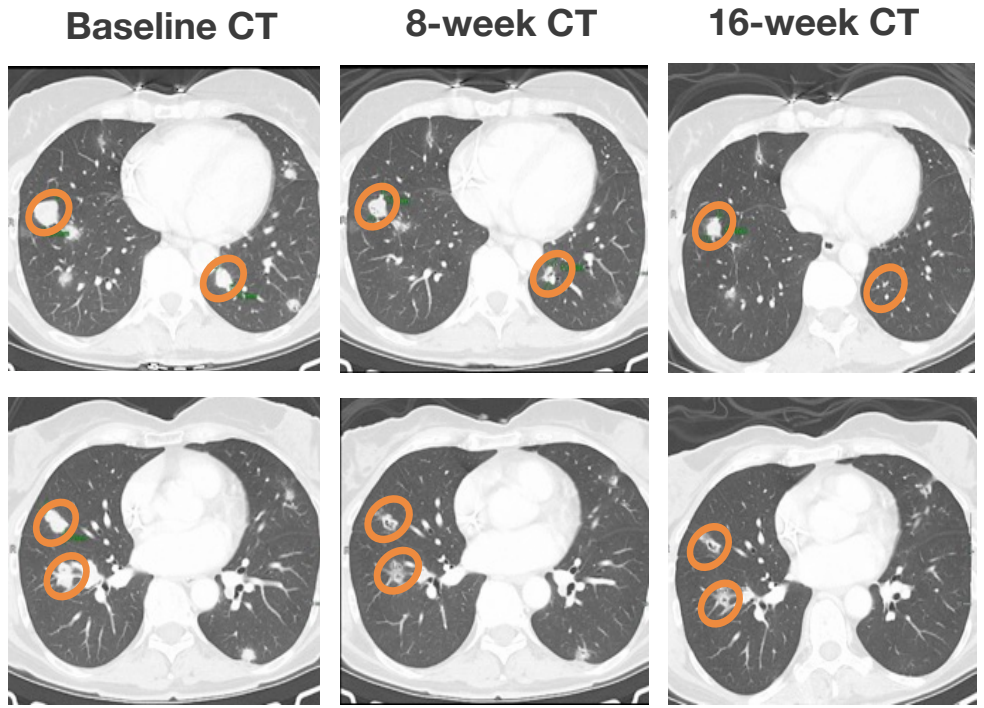
Patient:
61-year-old female with KRAS G12V metastatic sigmoid colon cancer (EAP Participant)

Treatment:
Onvansertib + FOLFIRI (irinotecan + 5-FU) + Bevacizumab

Early KRAS Decrease:
Decrease in KRAS mutational burden following 1 cycle of treatment correlates with subsequent tumor shrinkage







Second-Line Treatment of KRAS-Mutated mCRC

Phase 1b/2 open-label trial of onvansertib + FOLFIRI/bevacizumab

Trial Sites: USC Norris Comprehensive Cancer Center; Mayo Clinics (Arizona, Minnesota, Florida), Kansas University Medical Center, CARTI Cancer Center, Inova Schar Cancer Institute

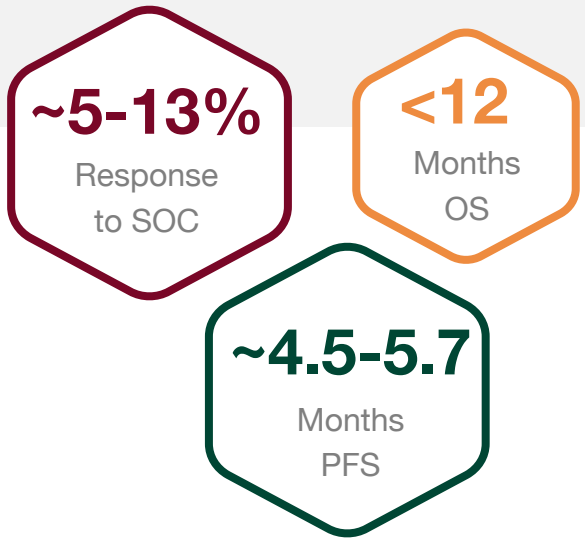
Principal Investigator: Dr. Heinz-Josef Lenz

New Second-Line Therapies are Needed to Improve Response and Increase Progression-Free Survival

50% of patients with mCRC have a KRAS mutation

Prognosis is poor with a five-year survival rate of **10%**

Other drugs currently in development do not address the most prevalent **KRAS mutations in mCRC**



Significant limitations to standard-of-care (SOC)

Historically, second-line SOC treatment in KRAS-mutated mCRC has had an objective response rate of ~5-13% and progression-free survival of ~4.5 - 5.7 months

References: 1. Giessen et al., Acta Oncologica, 2015, 54: 187-193; 2. Cremolini et al., Lancet Oncol 2020, 21: 497–507; 3. Antoniotti et al., Correspondence Lancet Oncol June 2020; 4. Bennouna et al., Lancet Oncol 2013; 14: 29–37. mCRC: Metastatic colorectal cancer; PFS: Progression free survival; OS: Overall survival

New Second-Line mCRC Treatment Options are an Unmet Need

Standard-of-Care Second Line mCRC Benchmarks for Median ORR, PFS and OS

	Objective Response Rate (ORR)	Progression-Free Survival (PFS)	Overall Survival (OS)
Systematic Literature-Based Analysis of 23 Randomized Trials (10,800 Patients) in Second-Line mCRC[1] (2000 – 2013)	11.4%	4.5 months	11.5 months
TRIBE2 Randomized Phase 3 Trial: SOC arm FOLFIRI + bev in Second-line following FOLFOX + bev First-line[2,3] (2015 – 2017)	13%	5.6 months	Not Reported for Second-line
ML18147 Phase 3 Registrational Trial of FOLFIRI + bev in second-line[4] (2006 – 2008)	5%	5.7 months	11.2 months

- Prognosis is poor with a five-year survival rate of 10%
- Other drugs currently in development do not address the most prevalent KRAS mutations in mCRC

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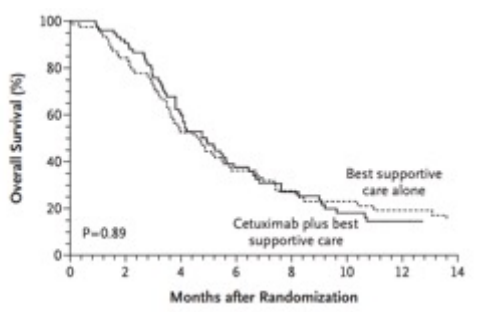
[1]Giessen et al., Acta Oncologica, 2015, 54: 187-193; [2]Cremolini et al., Lancet Oncol 2020, 21: 497–507; [3]Antoniotti et al., Correspondence Lancet Oncol June 2020; [4]Bennouna et al., Lancet Oncol 2013; 14: 29–37; mCRC: Metastatic colorectal cancer; SOC: Standard-of-care

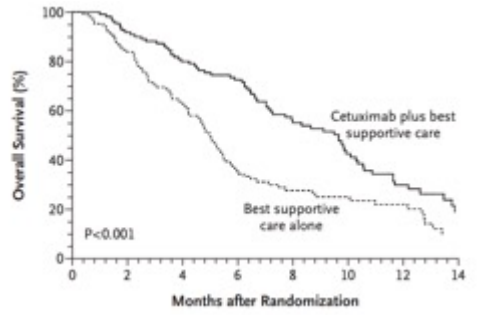
KRAS is a Pivotal Diagnostic Biomarker in the CRC Treatment Paradigm

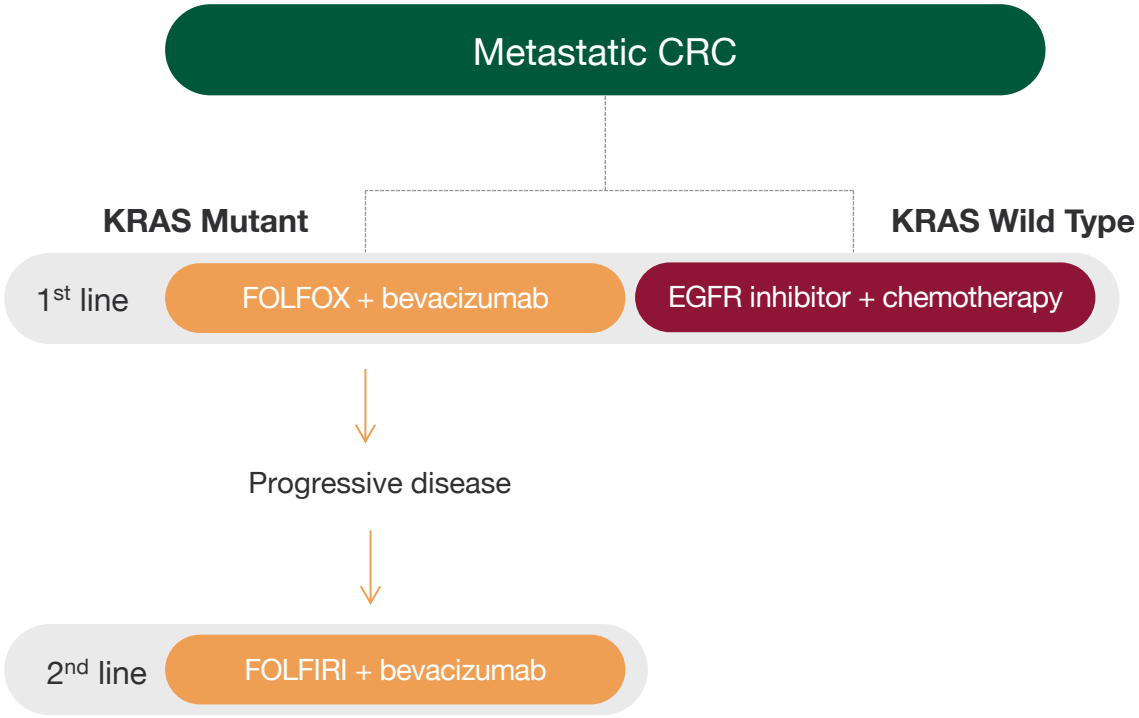
- KRAS-mutated patients do not benefit from anti-EGFRs agents:
  - No increase in OS, PFS and ORR was observed in KRAS mutant patients treated with EGFR inhibitors vs control arm[1,2]
  - The use of anti-EGFRs is therefore limited to KRAS WT patients
- Mutations in KRAS represent the most frequent mechanism of resistance to anti-EGFRs (i.e. cetuximab)

KRAS Mutant



KRAS Wild-type



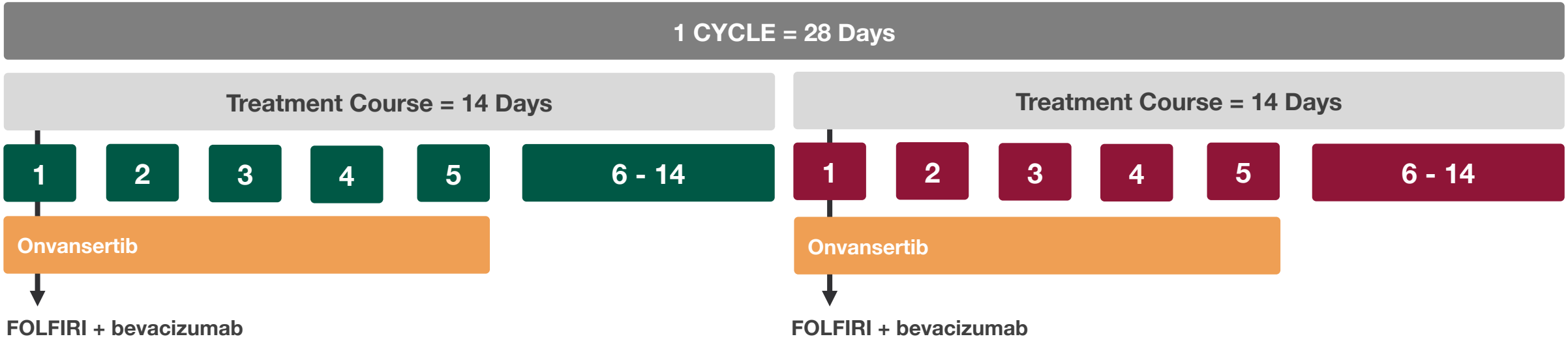


The prognosis for second-line mCRC is poor; onvansertib has the potential to improve outcomes for these patients

[1]Karapetis et al., NEJM 2008;359:1757-1765; [2]Amado et al., JCO 2008, 26:1626-1634; CRC: Colorectal cancer; OS: Overall survival; PFS: Progression free survival; ORR: Objective response rate; mCRC: Metastatic CRC; WT: Wild-type

Trial Design: Phase 1b/2 Open Label Study of Onvansertib + FOLFIRI/bevacizumab

Trial Design



Efficacy Endpoints

- Objective response rate (ORR) in patients who receive ≥1 cycle of treatment
- Progression-free survival (PFS) and duration of response (DOR)
- Decreases in KRAS mutational burden and response to treatment

Criteria for Clinical Proof of Concept

- 20% (5/26 patients) ORR
- ≥ 6 months median PFS

Phase 1b/2 KRAS-mutated mCRC Trial Enrollment and Patient Baseline Characteristics

Enrollment (as of 04-Apr-2021)

Number of Patients (N)	Phase 1b, Dose Level 0, Onvansertib 12 mg/m^2	Phase 1b, Dose Level +1 Onvansertib 15 mg/m^2	Phase 1b, Dose level +2 Onvansertib 18 mg/m^2	Phase 2, RP2D Onvansertib 15 mg/m^2
Treated	6	6	6	11
Completed Cycle 1	5	6	5	6
Currently on Treatment	0	3	2	11

Total Patients N=29	Median [range] or n (%)
Age (years)	56 [36-83]
Sex	
Male	16 (55%)
Female	13 (45%)
ECOG	
0	17 (59%)
1	11 (38%)
Primary tumor site	
Colon	13 (45%)
Rectum	10 (34%)
Unknown/Not provided	6 (21%)

Total Patients N=29	Median [range] or n (%)
Liver metastasis	
None	8 (28%)
Liver and other	14 (48%)
Liver only	5 (17%)
Number of metastatic organs	
1	10 (34%)
≥2	17 (59%)
Prior bevacizumab treatment	
Yes	16 (55%)
No	8 (28%)

mCRC: Metastatic colorectal cancer; RP2D: Recommended Phase 2 dose; ECOG: Eastern Cooperative Oncology Group,

Phase 1b/2 KRAS-mutated mCRC Trial Safety Assessment

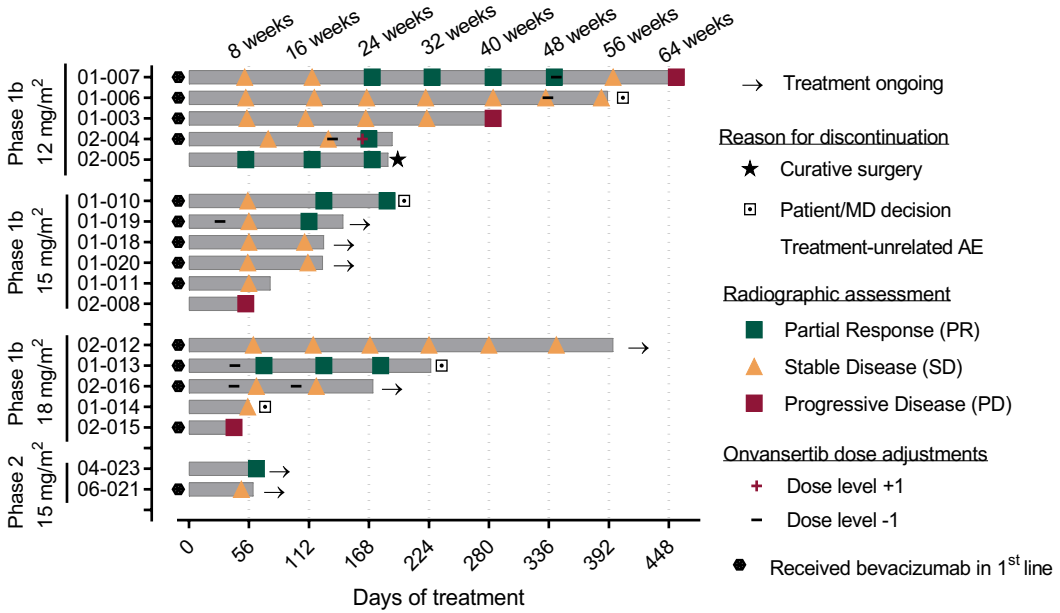
Most Common Treatment-Emergent AEs (as of 04-Apr-2021)					
Adverse Events (AEs)	Grade 1	Grade 2	Grade 3	Grade 4	All Grades
Nausea	13	5	2	0	20
Fatigue	10	8	1	0	19
Neutropenia	3	4	5	4	16
Abdominal pain	8	5	1	0	14
Diarrhea	7	5	0	0	12
Alopecia	8	2	0	0	10
WBC Decreased	3	5	1	1	10
Vomiting	4	4	1	0	9
Anemia	6	2	0	0	8
Platelet count decreased	5	2	0	0	7
Stomatitis	5	1	0	0	6
Headache	5	0	0	0	5
Neuropathy	4	0	0	0	4
Epistaxis	4	0	0	0	4
ALT increase	3	0	1	0	4
Hypertension	1	1	1	0	3
Dehydration	0	2	1	0	3

- 5 patients had G4 adverse events:
  - G4 neutropenic fever (n=1); G4 neutropenia (n=4); Decreased WBC (n=1); Hyperphosphatemia (n=1) - also neutropenia and WBC deceased noted above
- Onvansertib RP2D was confirmed at 15 mg/m^2
- Combination regimen was well tolerated:
  - Of all AEs only 11.3% (28/247) were G3/G4
  - The only G3/G4 AE reported in ≥2 patients were neutropenia (n=8); which was managed by dose delay, growth factor and/or discontinuation of the 5-FU bolus; WBC decease (n=2); Nausea (n=2)
- 5-FU bolus was discontinued in 16 of 18 patients in Phase 1b due to hematological toxicities; which led to resolution of associated toxicities
- No major or unexpected toxicities were attributed to onvansertib

n=number of patients (total N=30); mCRC: Metastatic colorectal cancer; AE: Adverse events; WBC=white blood cells; RP2D: Recommended Phase 2 dose; ALT= alanine aminotransferase

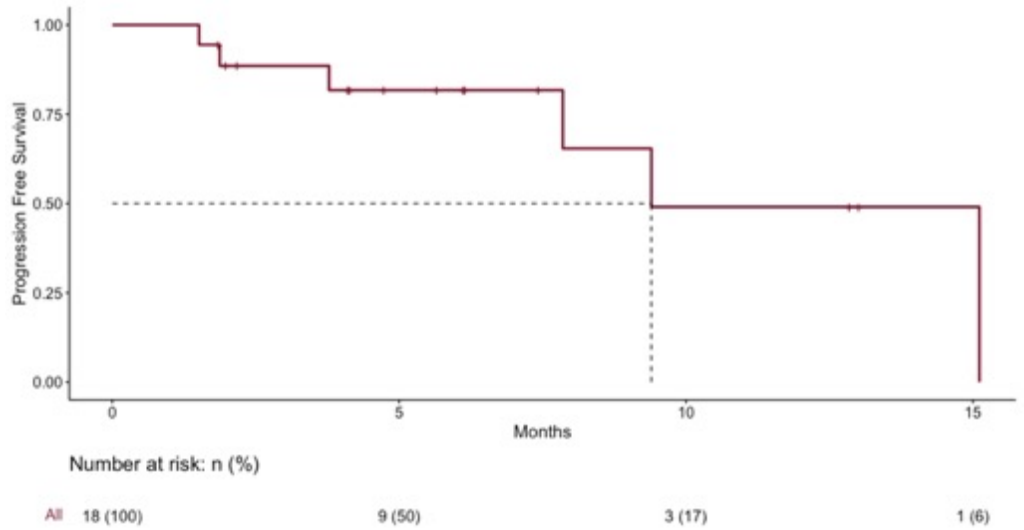
Assessment of Preliminary Efficacy and Duration of Response

Treatment Response and Duration



Progression Free Survival (PFS)

Median PFS (95% CI) = 9.40 months (7.85, not-reached)



39% (7/18 evaluable patients) ORR

7 PRs observed across **5** different KRAS mutations

Median PFS to-date **is 9.4 months**, which is **~2-fold greater** than current SOC mPFS of 4.5 – 5.7 months

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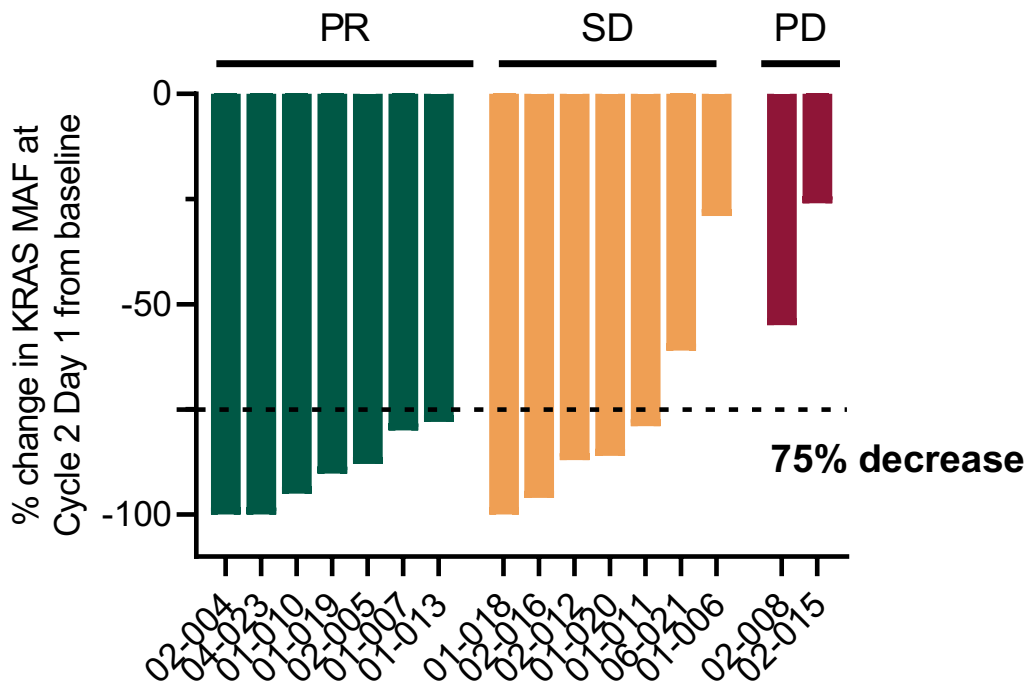
ORR: Objective response rate; PR: Partial response; PFS: Progression free survival; mPFS: Median PFS; SOC: standard-of-care

Significant Decreases in KRAS Mutational Burden in Cycle 1 are Predictive of Subsequent Tumor Shrinkage on Radiographic Scan

- Clinical responses were observed across KRAS mutations, including the 3 most prevalent in CRC (G12D, G12V, G13D)

- The greatest decreases in KRAS MAF after 1 cycle of treatment were observed in patients achieving a PR
  - All 7 patients with a PR had >75% decrease
  - 5 of the 7 patients with SD had reductions >75%
  - The 2 patients who progressed showed a more modest decrease in KRAS MAF (-55% and -26%)

% KRAS MAF Decrease Following 1 Cycle of Treatment

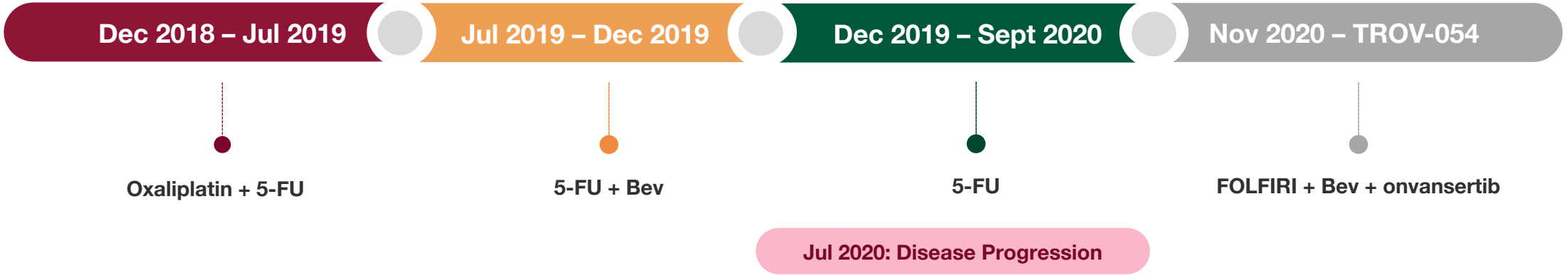


CRC: Colorectal cancer; MAF: Mutant allelic frequency; PR: partial response, SD: stable disease, PD: progressive disease

Phase 1b/2 Trial Patient Case Report – Patient 01-019 Background

Patient Overview: 83-year-old woman with KRAS G12D metastatic colon cancer

Treatment History



Additional Details

- C1D15 – G4 neutropenia (DLT); treatment was held
- C2D1 – 5-FU bolus eliminated
- C3D1 – G3 neutropenia; treatment was held
- C3D15 – Dose level reduction (-1) for irinotecan and 5-FU

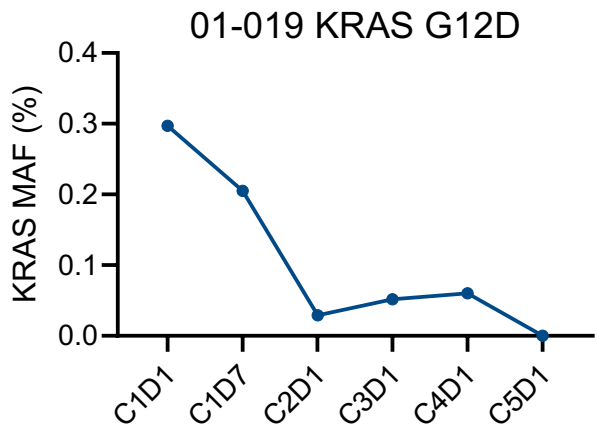
DLT: Dose-limiting toxicity

Phase 1b/2 Trial Patient Case Report – Patient 01-019 Response

Summary

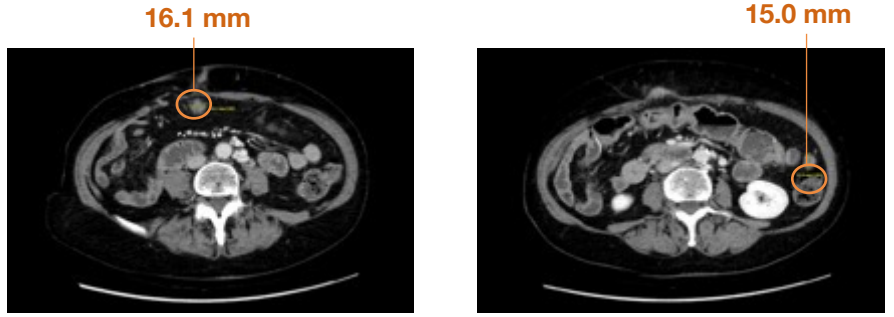
- January 2021 (8-week scan): stable disease [SD] (-16%) with decrease in size of metastatic lesions
- March 2021 (16-week scan): partial response [PR] (-39%) with further decrease in size of metastatic lesions

Changes in KRAS MAF Level

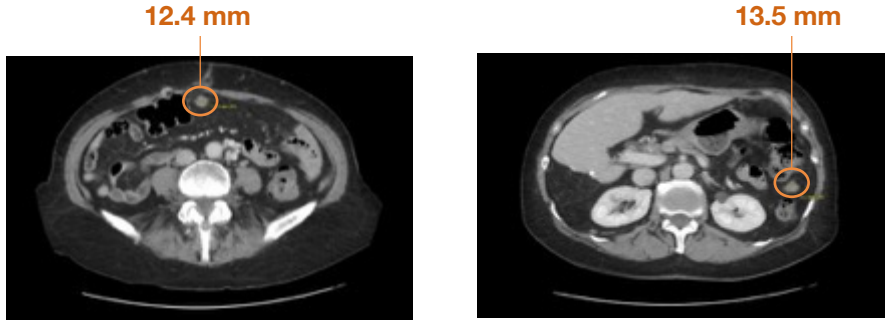


KRAS mutant allelic frequency decreased to non-detectable at C5D1 – March 5, 2021

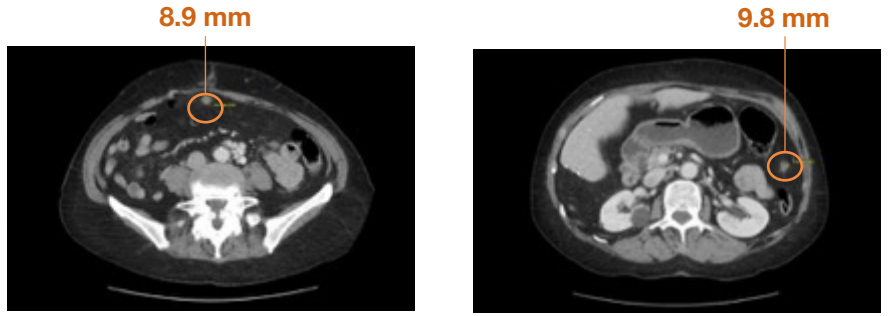
Baseline Scan
05-Nov-2020



8-week Scan
08-Jan-2021
-16% (SD)



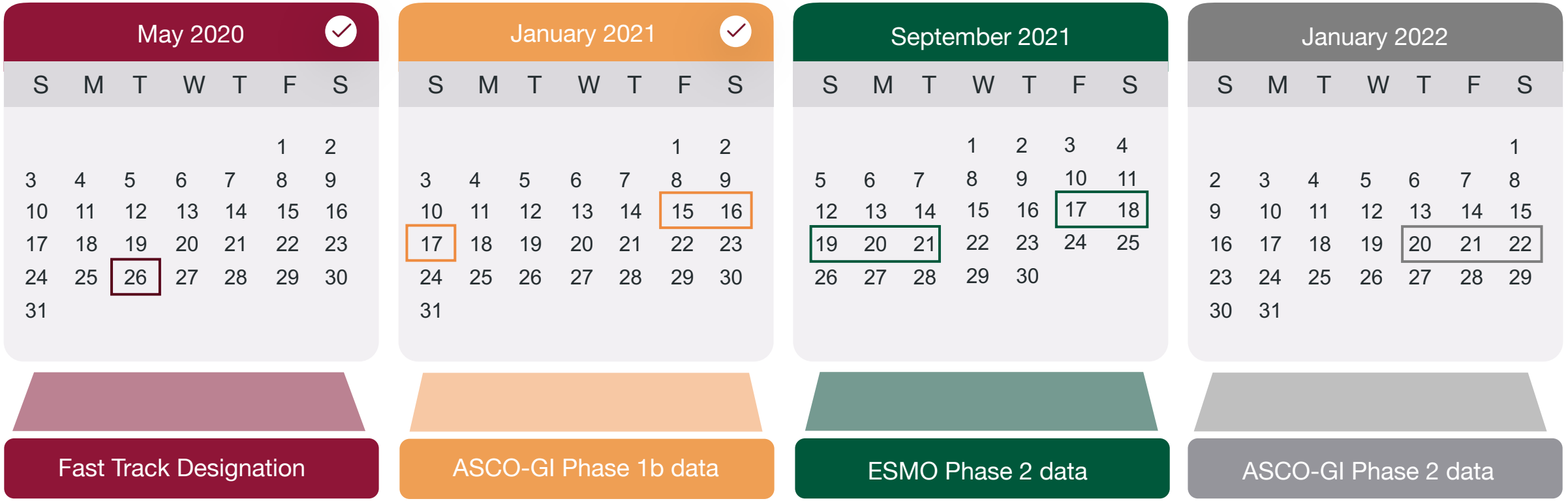
16-week Scan
04-Mar-21
-39% (PR)



MAF: Mutant Allelic Frequency; SD: Stable disease; PR: Partial response

Recent and Upcoming Milestones: KRAS-Mutated mCRC

Fast Track Designation enables more frequent interaction with the FDA and may facilitate an accelerated regulatory path



Second-Line Treatment of Metastatic PDAC

Phase 2 open label trial of onvansertib + nanoliposomal irinotecan, 5-FU and leucovorin

Trial Sites: Mayo Clinics (Arizona, Minnesota, Florida), Kansas University Medical Center, Inova Schar Cancer Institute, University of Nebraska Medical Center

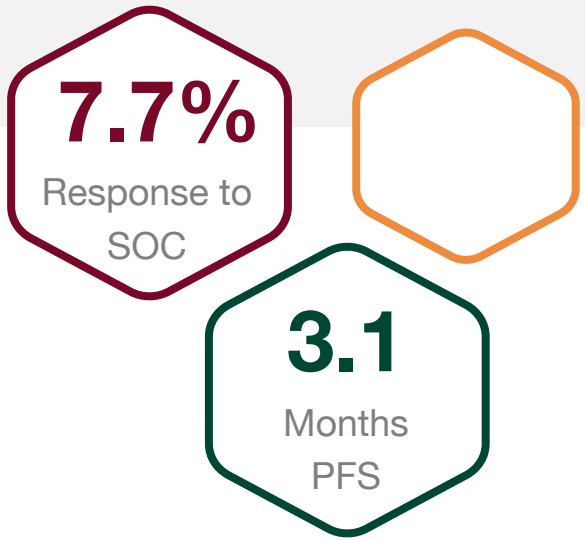
Principal Investigator: Dr. Daniel H. Ahn

New Second-Line Therapies are Needed for Metastatic Pancreatic Ductal Adenocarcinoma (PDAC) Patients

Second-line treatment with SOC irinotecan + 5-FU/leucovorin has a response rate of **only 7.7%**[1]

Second-line treatment with SOC irinotecan + 5-FU/leucovorin offers a mOS benefit of **only 6.1 months**[2]

Mutant KRAS contributes to treatment resistance and metastases **and is essential for PDAC growth**[3]



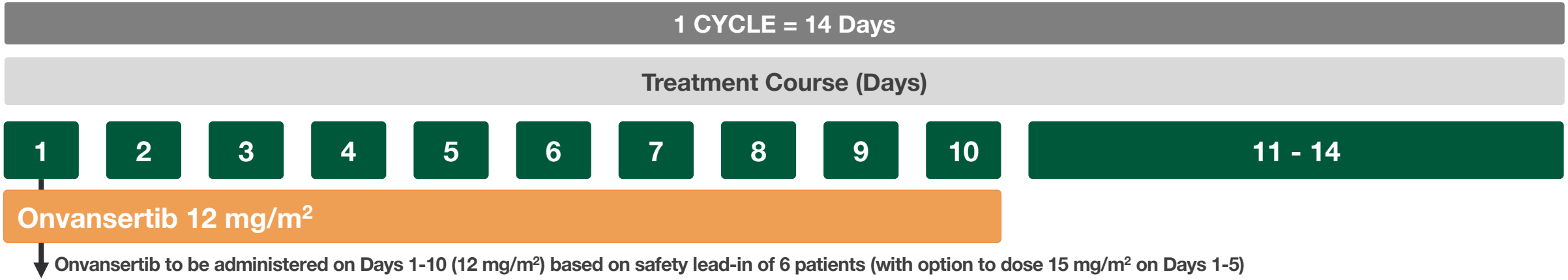
Leveraging the synergy of onvansertib combined with either irinotecan or 5-FU

The promising response rates and impressive durability seen in KRAS-mutated mCRC with the combination of onvansertib + irinotecan + 5-FU support onvansertib's potential in PDAC, where ~95% of patients have a KRAS mutation

[1]Onyvide Package Insert: https://www.accessdata.fda.gov/drugsatfda_docs/label/2015/207793lbl.pdf; [2]Wang-Gillam A, Li C-P, Bodoky G, et al. Lancet 2016;387:545-57. [3]Waters AM, Der CJ. Cold Spring Harb Perspect Med 2018;8(9). SOC: Standard-of-care; mOS: Median overall survival; PFS: Progression free survival; mCRC: metastatic colorectal cancer

Trial Design: Phase 2 Open Label Study of Onvansertib + Nanoliposomal Irinotecan + 5-FU in Metastatic PDAC

Trial Design (~45 patients):



Eligibility Criteria

- Prior abraxane/gemcitabine and no prior irinotecan, nanoliposomal irinotecan or investigational PLK1 inhibitor

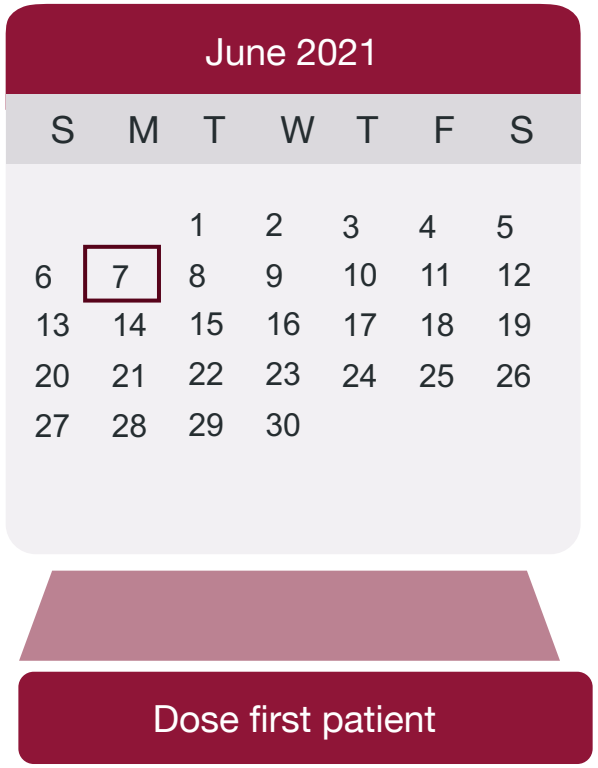
Primary Efficacy Endpoint

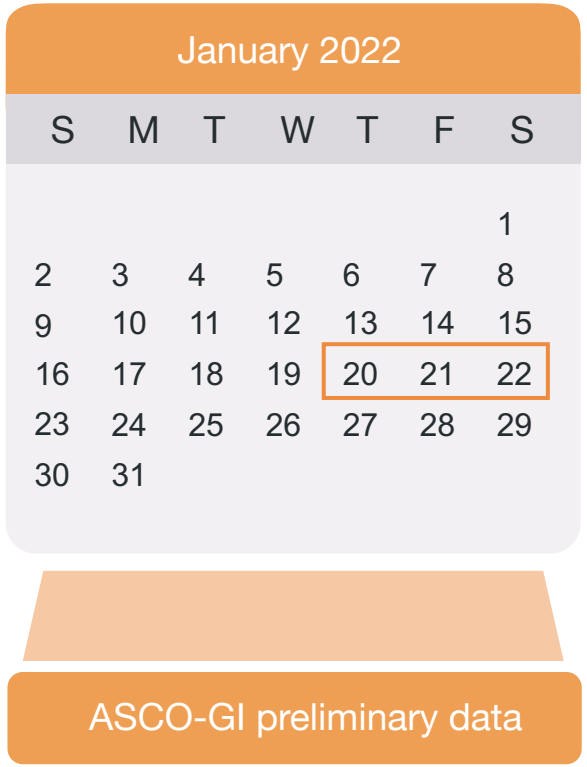
- Objective response rate (ORR)

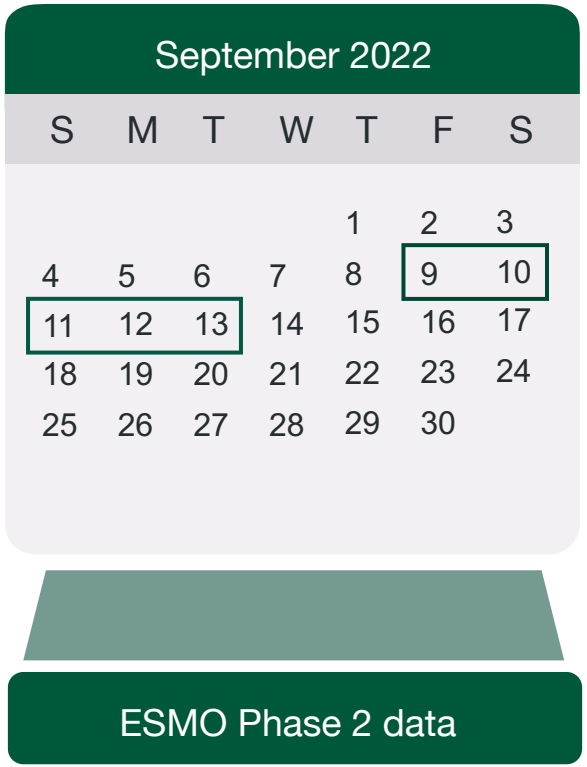
Criteria for Clinical Proof of Concept

- 20% (8/39) patients) Objective Response Rate

Upcoming Milestones: Metastatic PDAC







Cardiff Oncology™

Dana-Farber/Harvard Cancer Center

DF/HCC

NCI Comprehensive Cancer Center

A Cancer Center Designated by the National Cancer Institute

Metastatic Castrate-Resistant Prostate Cancer

Phase 2 open-label trial of onvansertib + abiraterone in abiraterone-resistant mCRPC

Trial Sites: Beth Israel Deaconess, Dana Farber, Mass General Hospital

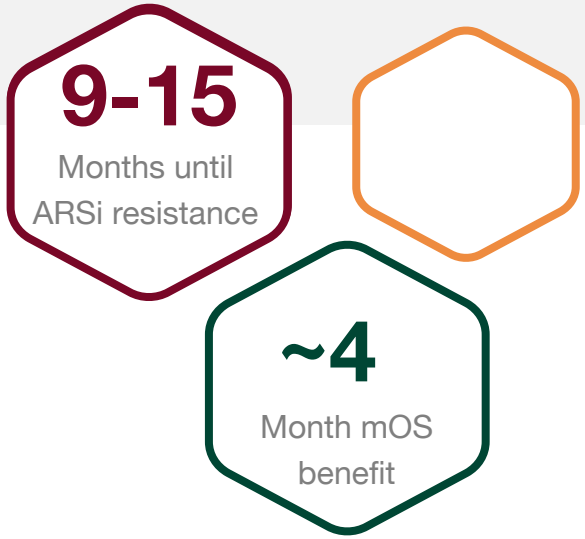
Principal Investigator: Dr. David Einstein

New Therapeutic Options are Needed to Overcome Resistance to SOC Androgen Receptor Signaling Inhibitors (ARSi)

Resistance develops to treatment with standard of care ARSi's within 9-15 months[1]

ARSi's offer a median overall survival (mOS) benefit of **only ~4 months**[1]

No effective treatment options are available for the up to 40% of mCRPC patients with an AR-V7 mutation[2]



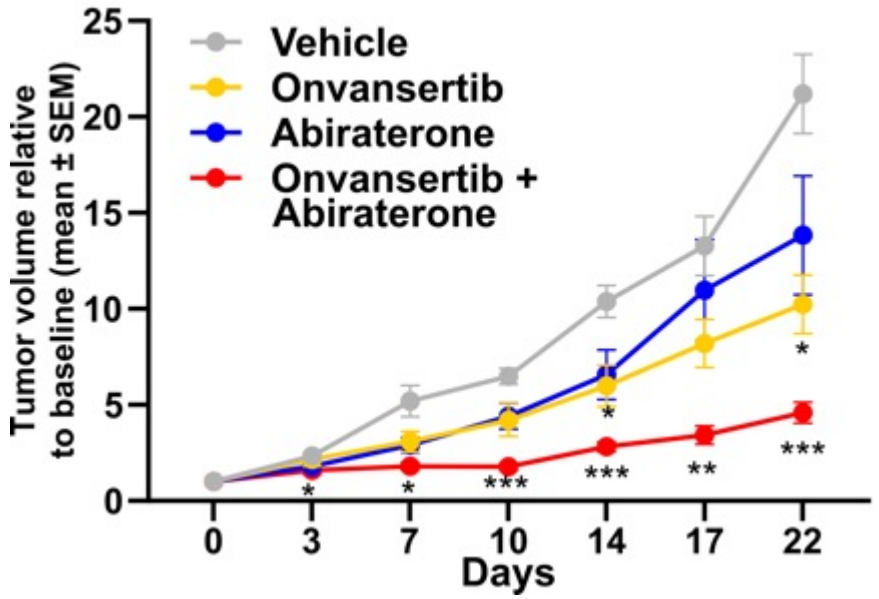
Limited options for patients once resistant to abiraterone

New treatment options are needed to extend the duration of response to ARSi's and increase overall survival

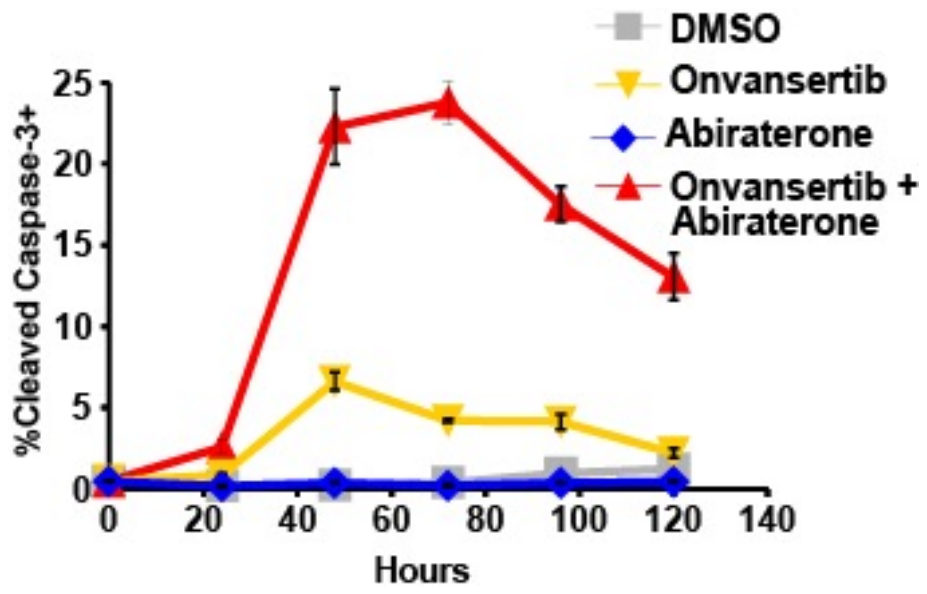
[1]Antonarakis, Emmannel – Current Understanding of Resistance to Abiraterone and Enzalutamide in Advanced Prostate Cancer; Clinical Advances in Hematology & Oncology – May 2016 – Volume 14, Issue 5; [2]Armstrong et al., 2019, JCO 37: 1120-1129; SOC: Standard-of-care; mCRPC: Metastatic castrate-resistant prostate cancer

Onvansertib Extends Response to Androgen Receptor Signaling Inhibitors

Onvansertib + Abiraterone (Zytiga®) Demonstrate Synergy in Abi-Resistant Model (LVCaP2CR)[1]



Onvansertib + Abiraterone (Zytiga®) Significantly Increases Apoptotic Cell Death[1]



- PLK1 is overexpressed in prostate cancer and linked to higher tumor grades[2]
- PLK1 inhibition + abiraterone demonstrated synergy in CRPC in vitro and in vivo models: combination induced increased mitotic arrest and apoptosis in comparison with single agents alone
- Ongoing preclinical studies suggest that abiraterone sensitizes cells to onvansertib through regulation of mitotic processes

[1]Patterson & Yaffe, 2019, MIT; [2]Weichert et al., Prostate 2004;60(3):240-5; Abi: Abiraterone; CRPC: Castrate-resistant prostate cancer

Identifying an Onvansertib-Abiraterone Response Gene Signature

Onvansertib/Abiraterone

Synergy study
RNA-sequencing

Abiraterone induces expression of mitotic genes in prostate cancer cells synergistic for Onv+Abi

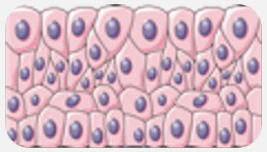
Identification of an Abi/Onv synergy gene signature

DECIPHER BIOSCIENCES

Transcriptome analysis of 32,000 prostate cancer specimens

Identified 4 molecular subtypes:
Luminal A
Luminal Proliferating
Basal
Basal Immune

Abi/Onv synergy gene signature is enriched in the Basal subtype, a subtype representing ~30% of CRPC patients and associated with lower response to androgen deprivation therapy (ADT)



Currently analyzing archived tissue from patients enrolled in the trial

Transcriptome analysis with Decipher Biosciences

Correlate clinical response with Basal molecular subtype

Onv: Onvansertib; Abi: Abiraterone; CRPC: Castrate-resistant prostate cancer

Trial Design: Phase 2 Open Label Study of Onvansertib + Abiraterone in Metastatic Castrate-Resistant Prostate Cancer

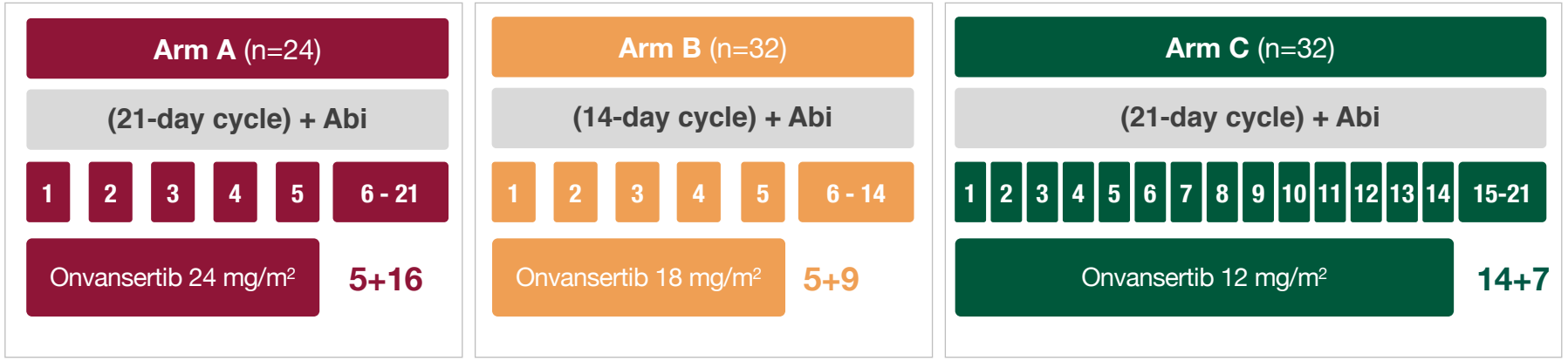
Key Eligibility Criteria:

- Initial signs of abiraterone resistance defined as 2 rising PSAs; one rise of ≥0.3 ng/mL separated by one week

Key Exclusion Criteria:

- Prior treatment with either enzalutamide or apalutamide
- Rapidly progressing disease or significant symptoms related to disease progression

Treatment Schedules for Each Study Arm



Enrollment as of January 11th, 2021

Number of patients (N)	Arm A (5+16)	Arm B (5+9)	Arm C (14+7)
Treated	24	17	10
Completing 12-weeks	14	8	6
Currently on Treatment	0	4	7

Efficacy Endpoints

- Primary: Disease control evaluated as PSA decline or stabilization (PSA rise <25% over baseline) after 12 weeks of treatment
- Secondary: Radiographic response per RECIST v1.1 criteria, time to PSA progression, and time to radiographic response

Criteria for Clinical Proof of Concept

- 30% (10/32 patients) disease control rate (DCR) following 12 weeks of treatment

Cardiff Oncology™ mCRPC: Metastatic castrate-resistant prostate cancer; PSA: Prostate specific antigen

Phase 2 mCRPC Trial Baseline Characteristics and Safety

Baseline Characteristics

Total patients N=51	Median [range] or n (%)
Age, years	72 [51-87]
Nonwhite ethnicity	7 (14%)
ECOG	
0	43 (84%)
1	7 (14%)
Years since diagnosis	4 [1-28]
Grade groups 4 and 5	29 (57%)
De novo metastatic disease	19 (37%)
Presence of bone metastasis	42 (82%)
Presence of visceral metastasis	18 (35%)
Baseline PSA, ng/mL	11.4 [0.6-515]
AR-V7+ at baseline*	10 (20%)
Baseline CTC/7.5 mL of blood**	15.8 [0-653]

*AR-V7 status was evaluated using the EPIC and Johns Hopkins University testing platforms **CTC count was performed by EPIC

Safety Assessment

- Most frequent Grade 3 and 4 adverse events (AEs) were expected, on-target, reversible hematological (anemia, neutropenia, thrombocytopenia and WBC decrease), associated with the mechanism of action of onvansertib
- Hematological AEs were reversible and effectively managed by dose delay, dose reduction and/or growth factor support

Most Common Treatment-Emergent Adverse Events in Treated Patients (≥10% of patients)

Adverse Events	Grade 1	Grade 2	Grade 3	Grade 4	All Grades
Anemia	10 (20%)	6 (12%)	1 (2%)		17 (33%)
Fatigue	10 (20%)	3 (6%)			13 (25%)
Thrombocytopenia	11 (22%)	1 (2%)			13 (25%)
Neutropenia	1 (2%)	1 (2%)	7 (14%)		12 (24%)
Hypophosphatemia	3 (6%)	3 (6%)	4 (8%)		10 (20%)
WBC decrease	3 (6%)	2 (4%)	3 (6%)	2 (4%)	10 (20%)
Back pain	4 (8%)	3 (6%)			7 (14%)
Hypokalemia	3 (6%)	1 (2%)	1 (2%)		5 (10%)

n= number of patients (total N=51)

mCRPC: Metastatic castrate-resistant prostate cancer; ECOG: Eastern Cooperative Oncology Group; PSA: Prostate specific antigen; AR-V7: androgen receptor variant 7, CTC: circulating tumor cells; WBC: white blood cells; AE: Adverse event;

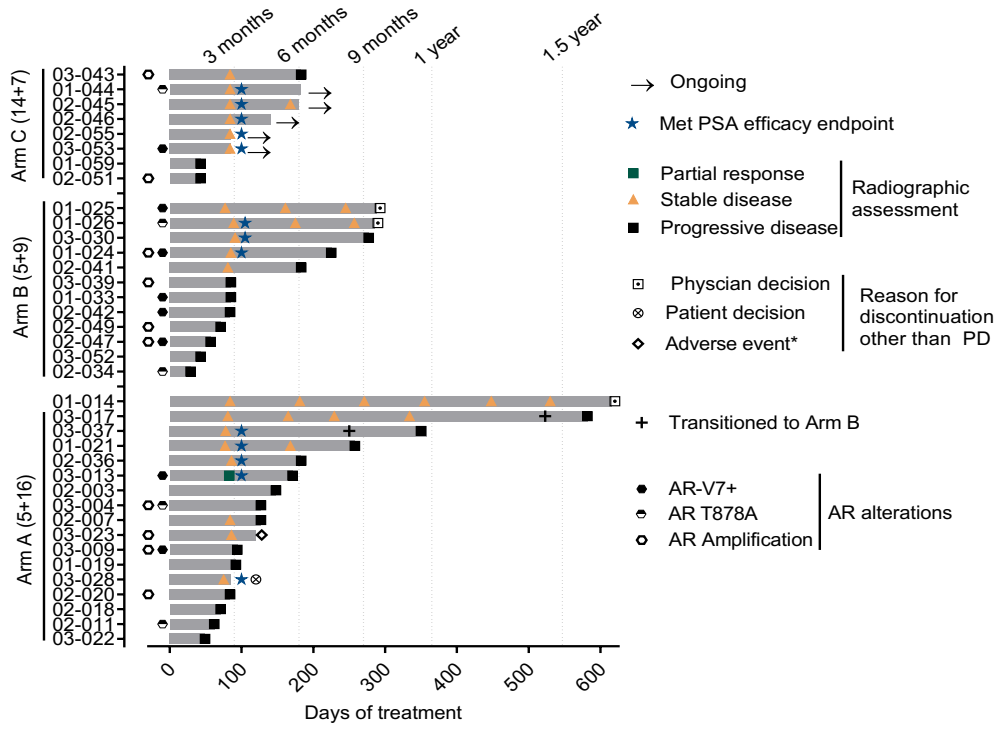
Assessment of Preliminary Efficacy and Duration of Response

Preliminary Data Summary for Evaluable Patients

	Arm A (5+16)	Arm B (5+9)	Arm C (14+7)
Evaluable for efficacy*	17	12	8
Completed ≥ 12 weeks of treatment	14	8	6
Had radiographic or clinical progression within 12 weeks	3	4	2
Disease control at 12 weeks**	5 (29%)	3 (25%)	**5 (63%)**
Radiographic SD at 12 weeks	9 (53%)	5 (42%)	**6 (75%)**
Durable response (≥6 months)	5 (29%)	5 (42%)	3 (37%)

Two-fold increase in **disease control** achieved with greater dose-density schedule in **Arm C**

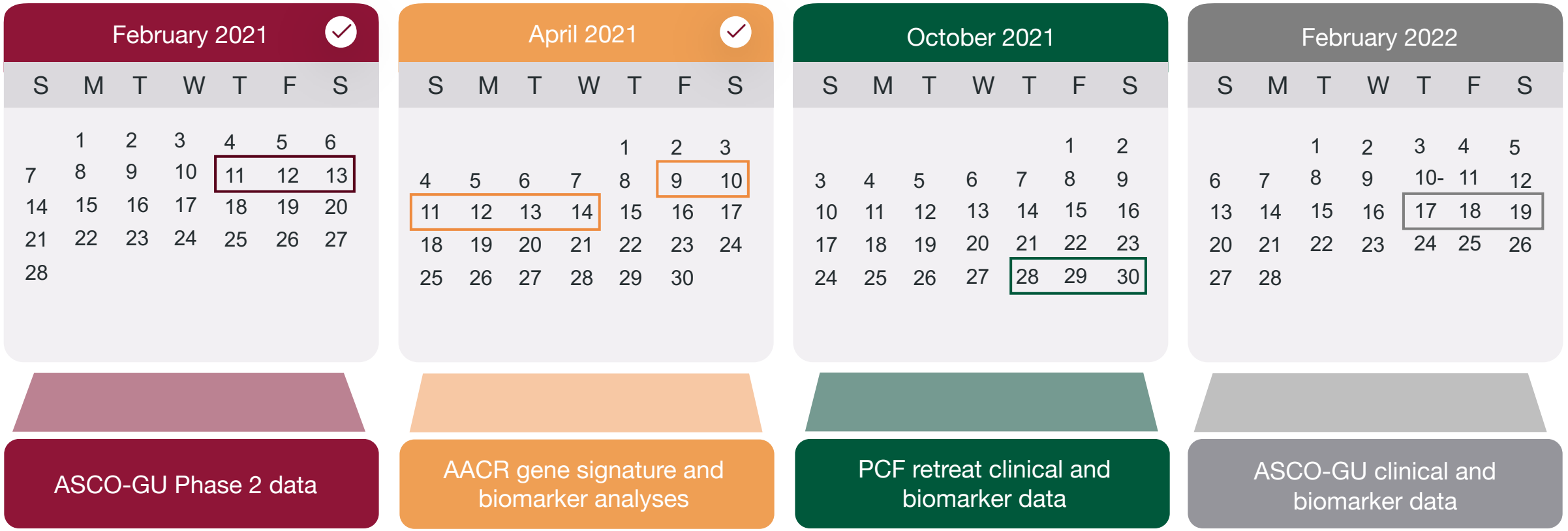
Treatment Response and Duration



26% (5/19) DCR at 12 weeks in patients with at least 1 AR alteration associated with abiraterone resistance

*Completed at least 12 weeks of treatment or had radiographic/clinical progression within 12 weeks; **Defined as prostate specific antigen (PSA) stabilization or decline (PSA rise <25% over baseline); SD: Stable disease; DCR: Disease control rate; AR: Androgen receptor

Recent and Upcoming Milestones: mCRPC



mCRPC: Metastatic castrate-resistant prostate cancer; PCF: Prostate cancer foundation

Expanding Target Indications

Preclinical Programs to Expand Onvansertib Pipeline of Indications

Prostate
PARP Inhibitors

Beth Israel Deaconess Medical Center

CRC
Erbitux (EGFR) KRAS WT
G12C Inhibitors KRAS

THE UNIVERSITY OF TEXAS MD Anderson Cancer Center

TNBC
PARP Inhibitors,
Paclitaxel

Dana-Farber Cancer Institute

PANC
Onvansertib single agent
Exploratory combinations

OREGON HEALTH & SCIENCE UNIVERSITY

Ovarian
PARP Inhibitors

Dana-Farber Cancer Institute

Pediatric Medulloblastomas
Combination with radiation

UNIVERSITY of DENVER

SCLC
Irinotecan
Onvansertib single agent

UPMC

Cardiff Oncology™

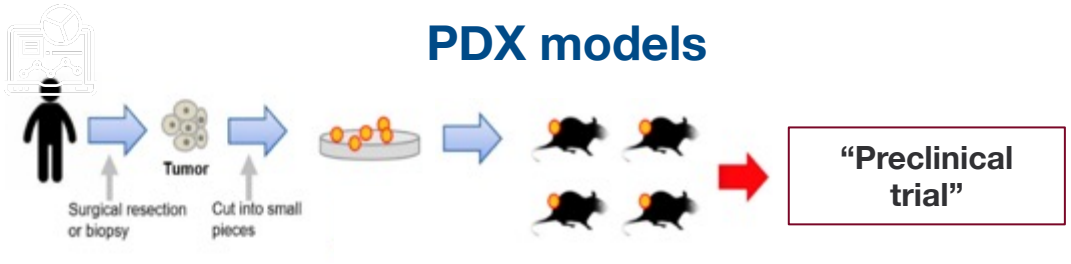
SCLC: Small cell lung cancer; TNBC: Triple negative breast cancer; PANC: Pancreatic cancer; CRC: Colorectal cancer; WT: Wild-type

Onvansertib is a Platform Molecule

Cancer Indication	**Inhibit Ability of PLK1 to Repair DNA** *DNA Damaging Agent*			**Inhibit Ability of PLK1 to Promote Cell Division (Mitosis)** *Microtubule (MT) Targeting Agents (Disruption of Mitosis)*		
	Chemo: Irinotecan & 5-FU	PARP Inhibitors	Radiation	Paclitaxel-MT Stabilizer	Abiraterone	DM4-MT Destabilizer
mCRC	✓					
mCRPC		✓			✓	
PDAC	✓	✓		✓		
Breast (TNBC and ER+)		✓		✓		
Ovarian		✓		✓		✓
SCLC	✓	✓		✓		
Medulloblastoma			✓			

Identifying Novel Effective Combinations of Onvansertib in CRC

PDX models



PDX models from CRC patient biopsies with clinical and molecular features available

Proposed Combinations

KRAS MUTANT TUMORS

- Oxaliplatin + 5-FU
- SHP2 inhibitor
- G12C mutant
  - G12C inhibitor
- Irinotecan-resistant tumors
  - Irinotecan and TAS-102

KRAS WILD TYPE TUMORS

- EGFR inhibitor

CRC: Colorectal cancer; PDX: Patient derived xenograft

Combining Onvansertib and PARP Inhibitors

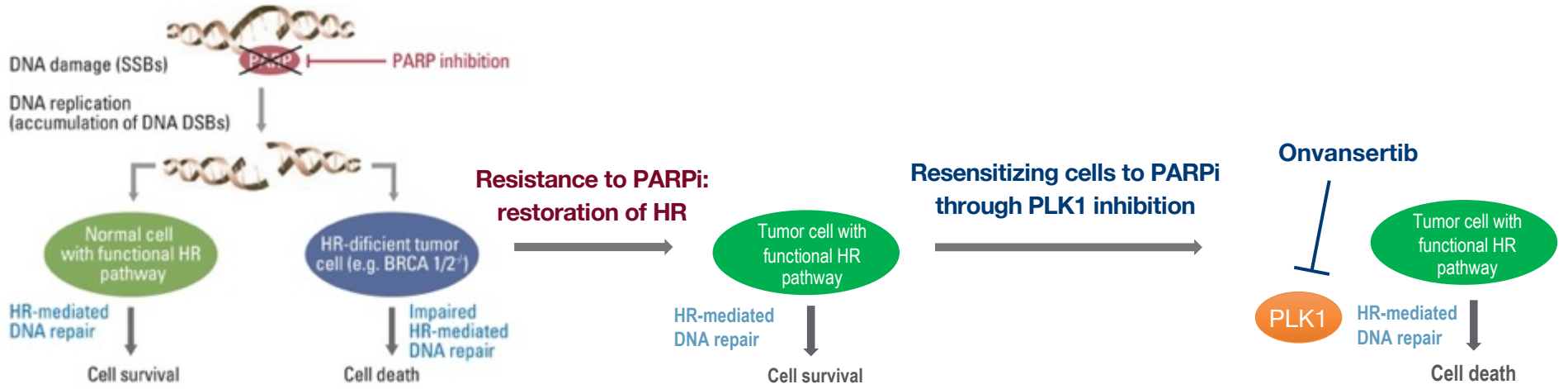
PARP Inhibitors

- PARP inhibitors are approved for BRCA1/2 mutant ovarian, breast, prostate and pancreatic cancer patients
- Although initial response to PARP inhibitors is high, patients will eventually develop resistance
- Mechanisms of resistance to PARP inhibitors include restoration of homologous recombination (HR)

PLK1 Facilitates HR during Double Strand DNA Break (DSB) Repair

- PLK1 phosphorylates Rad51 and BRCA1, facilitating their recruitment to DSB sites and thereby HR-mediated DNA repair[1,2]

PARP is essential for repair of single strand DNA breaks (SSBs). Failure to repair SSBs through PARP inhibition results in double strand DNA breaks (DSBs). In cells with functional homologous recombination (HR) pathway, the DSB are repaired. In cells with a dysfunctional HR pathway, such as BRCA 1/2 mutant cells, the lesions cannot be adequately repaired resulting in cell death.

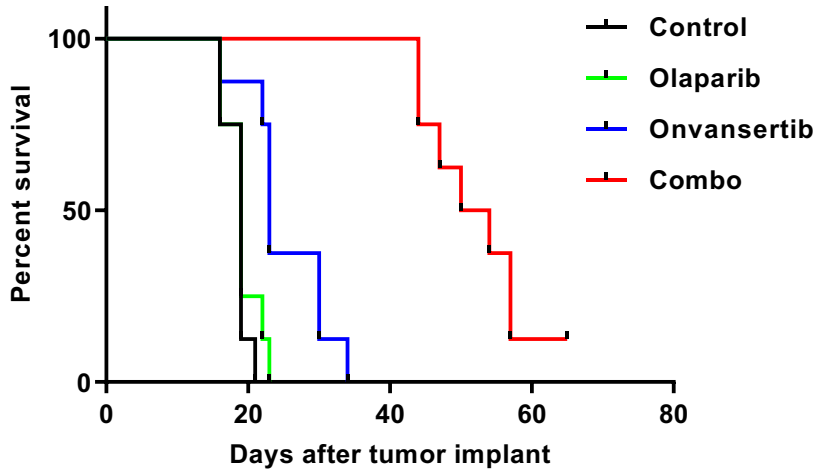


[1]Yata et al. Mol. Cell 45, 371-383, 2012; [2]Chabalier-Taste et al., Oncotarget 2016 Jan 19; 7(3): 2269-83

PLK1 Inhibition Sensitizes Cancer Cells to PARP Inhibitors

- In vitro preclinical studies showed that PLK1 inhibition sensitized cells to genotoxic stresses (i.e. radiation) and to PARP inhibitors through impairment of HR[1,2]
- Onvansertib sensitizes tumor cells to PARP inhibition **in vivo**:
  - In an ovarian BRCA1-mutant PDX model resistant to olaparib, the combination of onvansertib and the PARP inhibitor olaparib significantly increased the survival of mice (2.7-fold vs control or olaparib single agent)[3]
- Onvansertib has the potential to sensitize tumors resistant to PARP inhibitors and thereby expand the use of PARP inhibitors in the clinic

Ovarian BRCA1-mutant PARP-Resistant PDX model



Median survival (days)	Fold-increase in survival vs control
19	
19	0
23	1.2
52	**2.7**

[1]Yata et al. Mol. Cell 45, 371-383, 2012; [2]Chabalier-Taste et al., Oncotarget 2016 Jan 19; 7(3): 2269-83; [3]Data on file; PDX: Patient derived xenograft

Investment Highlights and Strategy

Fully leverage onvansertib in combination with targeted therapeutics and chemotherapies across multiple cancer indications

Onvansertib	The only oral and highly selective PLK1 inhibitor. Optimized product profile overcomes the shortcomings of prior PLK inhibitors. Broadly applicable MOA enables synergy with a wide range of therapeutic classes
Lead program: KRAS-mutated mCRC	Supported by **strong preliminary Phase 2 data** (ORR: 39%; mPFS: 9.4 months), which **compare very favorably to historical controls** (ORR: 5-13%; mPFS: 4.5-5.7 months). Program has FDA fast track designation. Updated data anticipated in Q3'21
Broad Portfolio of Indications	Ongoing **Phase 2** programs in abiraterone-resistant metastatic castrate-resistant prostate cancer and metastatic pancreatic ductal adenocarcinoma with **data readouts anticipated in Q4'21 and Q1'22**, respectively. Extensive preclinical programs have identified additional target indications
Strong Patent Portfolio	Three issued patents with anticipated extension to 2035. Evergreening of portfolio via combination therapy and methods associated with biomarker technology
Strong Balance Sheet	$125.6M in cash as of 3/31/21 with a Q1'21 spend of $5.9M. Additional $20M equity investment Q2'21 to-date
High-quality Shareholder Base	Includes institutional investors such as Acorn Bioventures[1], Caxton, Avidity, Janus, Corriente and Eventide[2]

MOA: Mechanism of action; mCRC: Metastatic colorectal cancer; ORR: Objective response rate; mPFS: Median progression free survival; [1]Acorn Bioventures 13D filed on July 2, 2020; [2]As of March 31, 2021, filed 13F - Caxton, Avidity, Janus, Corriente and Eventide

Cardiff Oncology™

Thank You

for more information contact:

ir@cardiffoncology.com