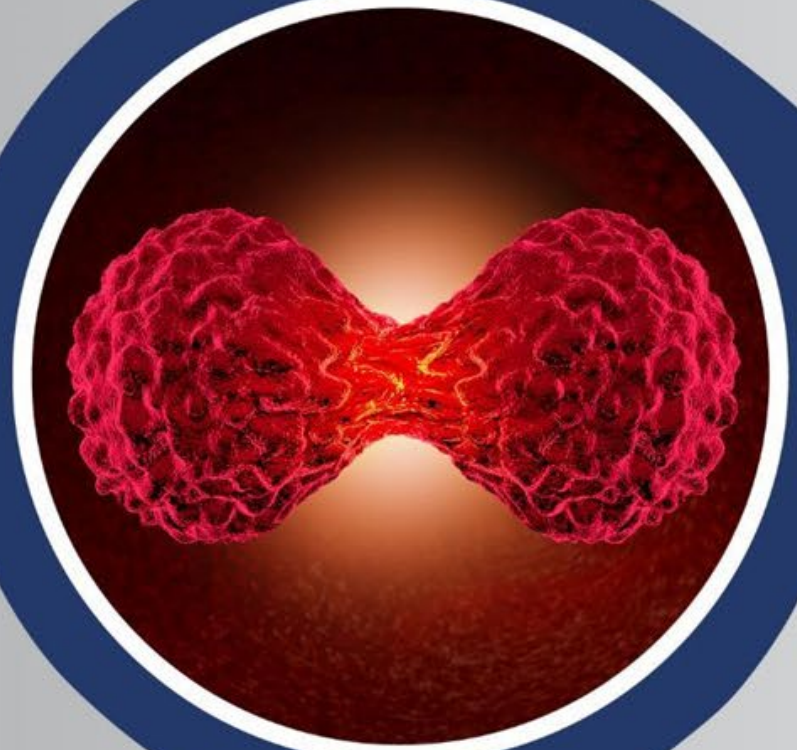

ONCTERNAL therapeutics™

TARGETING CANCER

New Science. New Cancer Therapies. New Hope.

Company Overview – August 2022

FORWARD-LOOKING STATEMENTS

This presentation contains forward-looking statements (including within the meaning of §21E of the U.S. Securities Exchange Act of 1934, as amended, and § 27A of the U.S. Securities Act of 1933, as amended). Forward-looking statements, which generally include statements regarding goals, plans, intentions and expectations, are based upon current beliefs and assumptions of Oncternal Therapeutics, Inc. ("Oncternal") and are not guarantees of future performance. Statements that are not historical facts are forward-looking statements, and include statements regarding the expected timing for achieving key milestones, including the expected initiation of, and elements constituting, the ZILO-301 and ZILO-302 studies, the potential that the ZILO-301 study can serve as a registrational study, submission of an Investigational New Drug application for ONCT-808 and completing and announcing results of clinical trials of Oncternal's other product candidates, the anticipated market potential, duration of patent coverage, ability to obtain and maintain favorable regulatory designations, and potential accelerated approval pathways for Oncternal's product candidates and preclinical programs, and Oncternal's anticipated cash runway.

All forward-looking statements are subject to risks and uncertainties, including risks and uncertainties inherent in Oncternal's business, including risks associated with the clinical development and process for obtaining regulatory approval of Oncternal's product candidates such as potential delays in the commencement, enrollment and completion of clinical trials; the risk that results seen in a case study of one patient likely will not predict the results seen in other patients in the clinical trial; the risk that interim results of a clinical trial do not predict final results and that one or more of the clinical outcomes may materially change as patient enrollment continues, following more comprehensive reviews of the data, as follow-up on the outcome of any particular patient continues, and as more patient data become available; and other risks described in Oncternal's filings with the U.S. Securities and Exchange Commission ("SEC"). Except as required by applicable law, Oncternal undertakes no obligation to revise or update any forward-looking statement. All forward-looking statements in this presentation are current only as of the date on which the statements were made. Additional factors that could cause actual results to differ materially from those expressed in the forward-looking statements are discussed in Oncternal's filings with the SEC.

Zilovertamab, ONCT-808, and ONCT-534 are investigational product candidates or preclinical programs that have not been approved by the U.S. Food and Drug Administration for any indication.

This presentation includes certain information obtained from trade and statistical services, third-party publications, and other sources. Oncternal has not independently verified such information and there can be no assurance as to its accuracy.

Corporate Highlights

ZILOVERTAMAB: POTENTIALLY FIRST-IN-CLASS MONOCLONAL ANTIBODY TARGETING ROR1

- Safety and efficacy results for zilovertamab + ibrutinib in patients with MCL/CLL compare favorably to historical single-agent ibrutinib
- Encouraging efficacy results in patients with p53 mutated CLL, with PFS of 100% at 24 and 30 months
- Agreement with U.S. FDA on Phase 3 global registrational study design for the treatment of patients with R/R MCL

ONCT-808: AUTOLOGOUS CAR-T CELL THERAPY TARGETING ROR1

- Clinical manufacturing agreement with the Dana-Farber Cancer Institute for first-in-human studies
- Research collaborations for next-gen allogeneic CAR-T and CAR-NK cell therapies with Karolinska Institutet & Celularity

ONCT-534: DUAL-ACTION ANDROGEN RECEPTOR INHIBITOR (DAARI)

- Activity in preclinical prostate cancer models of androgen receptor inhibitor resistance, including AR mutations, AR overexpression and AR splice variants, such as AR-V7

MULTIPLE CATALYSTS

- Planned initiation of zilovertamab + ibrutinib global registrational Phase 3 Study ZILO-301 in 3Q 2022
- Clinical data updates in MCL and CLL
- ONCT-808 ROR1 CAR-T cell therapy IND submission planned in August 2022

Clinical Stage Biotech Focused on Hematological Malignancies and Prostate Cancer with Multiple Modalities and Deep ROR1 Expertise

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Hematological Malignancies

Zilovertamab – ROR1 monoclonal antibody

- Demonstrated clinical benefit of combination with ibrutinib compared to historical ibrutinib monotherapy, including in difficult-to-treat p53 mutations
- Expect MCL registrational study initiation in 3Q 2022

ONCT-808 – ROR1 CAR-T Cell Therapy

- Expect IND submission in August 2022

Prostate Cancer

ONCT-534 – Dual Action AR Inhibitor (DAARI)

- First-in-class MOA interacting with both N-terminal Domain and Ligand-Binding Domain of the androgen receptor inducing AR protein degradation
- Active preclinically in AR amplification, splice variant and LBD mutation models

Zilovertamab – ROR1 monoclonal antibody

- Ph1b study open for advanced prostate cancer

Experienced Team

James Breitmeyer, MD, PhD
CEO, Founder, Director

Richard Vincent
CFO

Salim Yazji, MD
CMO

Gunnar Kaufmann, PhD
CSO

Raj Krishnan, PhD
CTO

Chase Leavitt
General Counsel

Pablo Urbaneja
SVP, Corporate Development

Steve Hamburger, PhD
SVP, Regulatory Affairs & Quality Assurance

David Hale
Co-founder
Board Chairman

Michael Carter, MB
Director

Jinzhu Chen, PhD
Director

Daniel Kisner, MD
Director

Rosemary Mazanet, MD, PhD
Director

Bill LaRue
Director

Xin Nakanishi, PhD
Director

Charles Theuer, MD, PhD
Director

Robert Wills, PhD
Director

Robust Pipeline – Novel Product Candidates in Multiple Indications

Modality	Product Candidate	Indication	Preclinical	Phase 1	Phase 2	Phase 3
ROR1 mAb	Zilovertamab	Mantle Cell Lymphoma (MCL)				
		Chronic Lymphocytic Leukemia (CLL)				
		Prostate Cancer				
ROR1 Cell Therapy	ONCT-808 (Autologous CAR-T)	Hematological Malignancies				
	Allogeneic	Hematological Malignancies and Solid Tumors				
Dual-Action AR Inhibitor	ONCT-534	Prostate Cancer				

Table of Contents

ROR1 (Receptor Tyrosine Kinase-Like Orphan Receptor 1)

Compelling Tumor-Specific Target

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- Expressed on **most B-cell malignancies**, including
  - Mantle cell lymphoma (MCL), diffuse large B-cell lymphoma (DLBCL), chronic lymphocytic leukemia (CLL)
- Expressed on **many solid tumors**
  - Increased ROR1 expression associated with more aggressive tumors, shorter PFS and OS
- ROR1 activity associated with **aggressive phenotype**
  - Invasion, metastasis, stem cell-like behavior, and resistance to treatment
- Subject of **large pharma acquisitions**
  - ROR1-ADCs: Merck (VelosBio), Boehringer (NBE)
- **Oncternal ROR1 pipeline differentiated and advancing**
  - Deep target biology expertise & immunotherapy experience

Green 2008 Trends Cell Biol. 2008; Matsuda T 2001 Mech Dev.; Fukuda 2008 PNAS; Hudecek 2010 Blood; Zhang 2012 Am J Pathology; Zhang 2014 PNAS

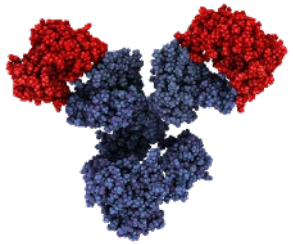
ROR1 Expressed on Multiple Solid and Liquid Tumors

MCL	95%
CLL	95%
Uterus	96%
Lymphoma	90%
Prostate	90%
Skin	89%
Pancreatic	83%
Adrenal	83%
Lung	77%
Breast	75%
Testicular	73%
Colon	57%
Ovarian	54%

Zhang 2012 AJP

Two Development Programs Targeting ROR1

Zilovertamab ROR1 mAb



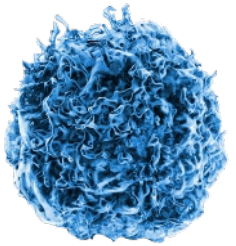
Background

- High-affinity IgG1 humanized ROR1 mAb
- Binds to tumors but not normal adult tissues
- Patent coverage through at least 2033 (CoM); 2037 (MoU)
- Supported by ~$14M non-dilutive CIRM grant and ibrutinib product donation
- Zilovertamab is the mAb used in MK-2140 ADC
  - Merck acquired the ADC from VelosBio for $2.75B in 2020

Development status

- MCL: Agreement with U.S. FDA on Phase 3 study design for ibrutinib combo in patients with R/R MCL
- CLL: Phase 2 with ibrutinib prolonged PFS
- FDA Orphan Drug Designations for MCL and CLL
- mCRPC: P1b IST with docetaxel UC San Diego

ROR1 CELL THERAPY PROGRAM



Background

- ROR1 expression on many tumor types
- Potential safety and efficacy advantages
- MK-2140 ADC data at ASH 2021: no apparent off-tumor, on-target ROR1 toxicities

Development status

- ONCT-808 utilizing zilovertamab scFv is lead autologous CAR-T cell product candidate
- Collaborations with Celularity & Karolinska Institutet
- Process development collaboration with Lentigen and Miltenyi Biotec
- Phase 1 cGMP cell preparation and manufacturing at Harvard/Dana-Farber Cancer Institute
- Productive pre-IND meeting Jan ’22, IND submission expected in August 2022

CoM: Composition of Matter; MoU: Method of Use

Zilovertamab Extensive Preclinical Research

Potential as combination therapy, multiple tumor indications and safety advantage

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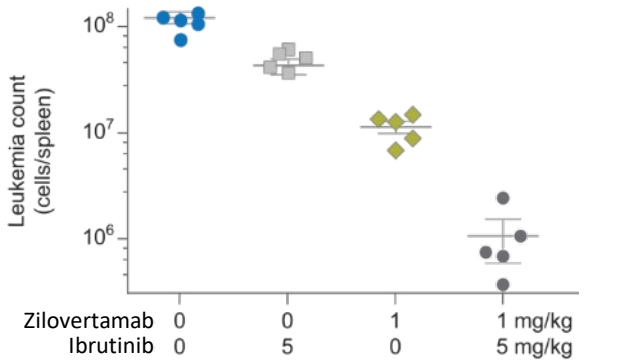
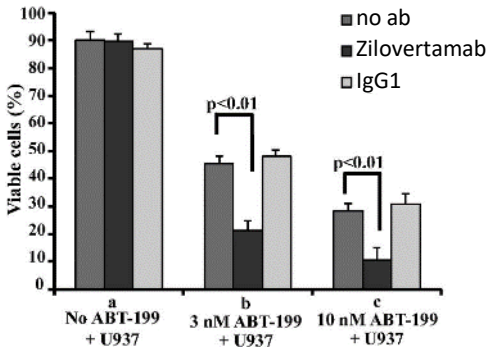
Synergistic with Targeted Agents

- Synergistic with ibrutinib in CLL and MCL



Yu 2017 Leukemia

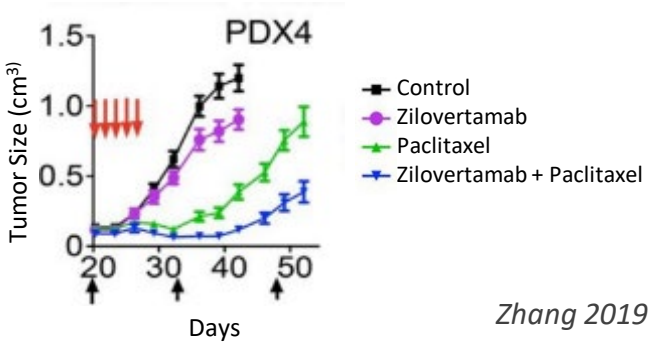
- Synergistic with venetoclax (ABT-199)



Rassenti 2017 PNAS

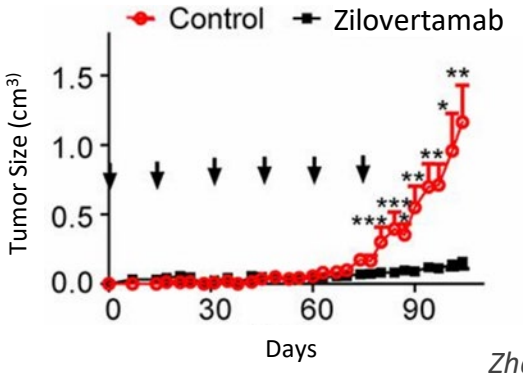
Active in Solid Tumor Models

- Zilovertamab and paclitaxel are at least additive against TNBC PDX growth, and eliminate tumor forming cells



Zhang 2019 PNAS

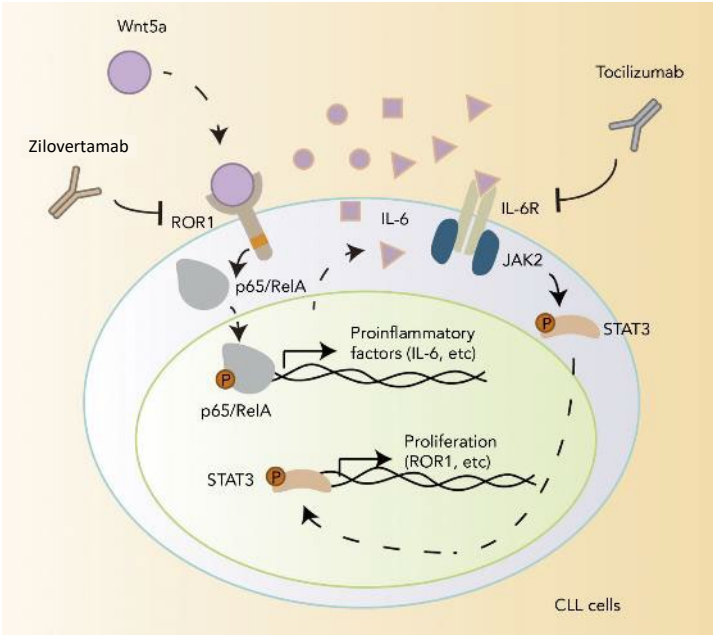
- Anti-tumor activity in PDX models of ovarian cancer



Zhang 2014 PNAS

Inhibits Inflammatory Pathway

- Zilovertamab blocks pro-inflammatory JAK/STAT signaling pathway in CLL cells
- Mechanism for potential safety advantage observed in patients



Chen 2019 Blood

CIRM-0001 Trial – Phase 1/2 Study of Zilovertamab and Ibrutinib in Patients with MCL, CLL and MZL

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STUDY DESIGN

PART 1 (in CLL & MCL)	PART 2 (in CLL, MCL& MZL)	PART 3 (in CLL)
DOSE-FINDING COHORT • Zilovertamab at 2, 4, 8 & 16 mg/kg and 300 & 600 mg doses evaluated • Ibrutinib added after one month	**DOSE-EXPANSION COHORT** • Confirm Recommended Dosing Regimen (RDR) of zilovertamab (600 mg) + ibrutinib at approved dose	**RANDOMIZED EFFICACY** • Zilovertamab + ibrutinib vs. ibrutinib • Primary endpoint: Complete Response rate
Enrolled	*MCL & CLL enrolled* *MZL open soon for enrollment*	*Enrolled*

- Encouraging interim clinical data in MCL and CLL presented at ASCO 2022, especially p53 altered disease
- Data support Phase 3 registrational study design
- Ibrutinib from Pharmacyclics/AbbVie
- Collaboration with UC San Diego and CIRM

MCL = Mantle Cell Lymphoma, CLL = Chronic lymphocytic leukemia, MZL = Marginal zone lymphoma
CIRM = California Institute for Regenerative Medicine

ClinicalTrials.gov Identifier: NCT03088878

CIRM-0001 Trial Summary

Zilovertamab + Ibrutinib Data Update at ASCO 2022

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MCL:

Clinical activity compares favorably to published single-agent ibrutinib data(1)

- ORR 85% (23/27)
- CR rate 41% (11/27)
- CRs durable for up to 35 months
- Median PFS of 35.9 months and OS not reached, regardless of prior # of therapies, after a median follow-up of 15.1 months

Encouraging clinical activity in high-risk sub-populations

- p53 loss of function: Median PFS of 17.3 months
- Prior SCT or CAR-T (n=7): 100% ORR (5 CR, 2 PR)
- Ki-67 levels ≥30% (n=14): 86% ORR (5 CR, 7 PR)
- > 1 prior systemic therapy (n=12): 83% ORR (7 CR, 3 PR)
- Prior ibrutinib (n=5): 80% ORR (2 CR, 2 PR)

CLL:

The combination of zilovertamab plus ibrutinib is a well-tolerated and active regimen in CLL

- Updated Part 1 & 2 results:
  - ORR 91% (31/34)
  - CR rate 9% (3/34)
  - Clinical Benefit 100% (34/34)
  - Median PFS not reached after median follow-up of 32.9 months
- Randomized cohort (Part 3) results
  - Data continue to mature with time
  - ORR 94% (15/16 combo) vs 100% (7/7 mono)
  - Median PFS not reached for either arm after median follow-up of 24.1 months
  - Median PFS of 100% at 24 and 30 months for patients p53 loss of function

No additional toxicity when zilovertamab is combined with ibrutinib

The combination has been well tolerated, with treatment emergent adverse events and hematologic abnormalities consistent with, or slightly lower than those reported for ibrutinib alone. For example, in patients with MCL, Grade 3-4 neutrophil decrease was documented in **9.1%** of patients with zilovertamab plus ibrutinib, compared to **29%** for ibrutinib alone from its registration study

There have been no dose-limiting toxicities and no serious adverse events attributed to zilovertamab alone

Data Cut: 8Apr2022, (1) Historical data with single-agent ibrutinib in MCL population reported overall ORR 66% and CR rate 20% (Rule et al. 2017 Br J Haem); such data may not be directly comparable due to differences in study protocols, conditions and patient populations.

R/R MCL: Tumor Reduction and Progression-Free Survival

Zilovertamab + Ibrutinib Data Update at ASCO 2022

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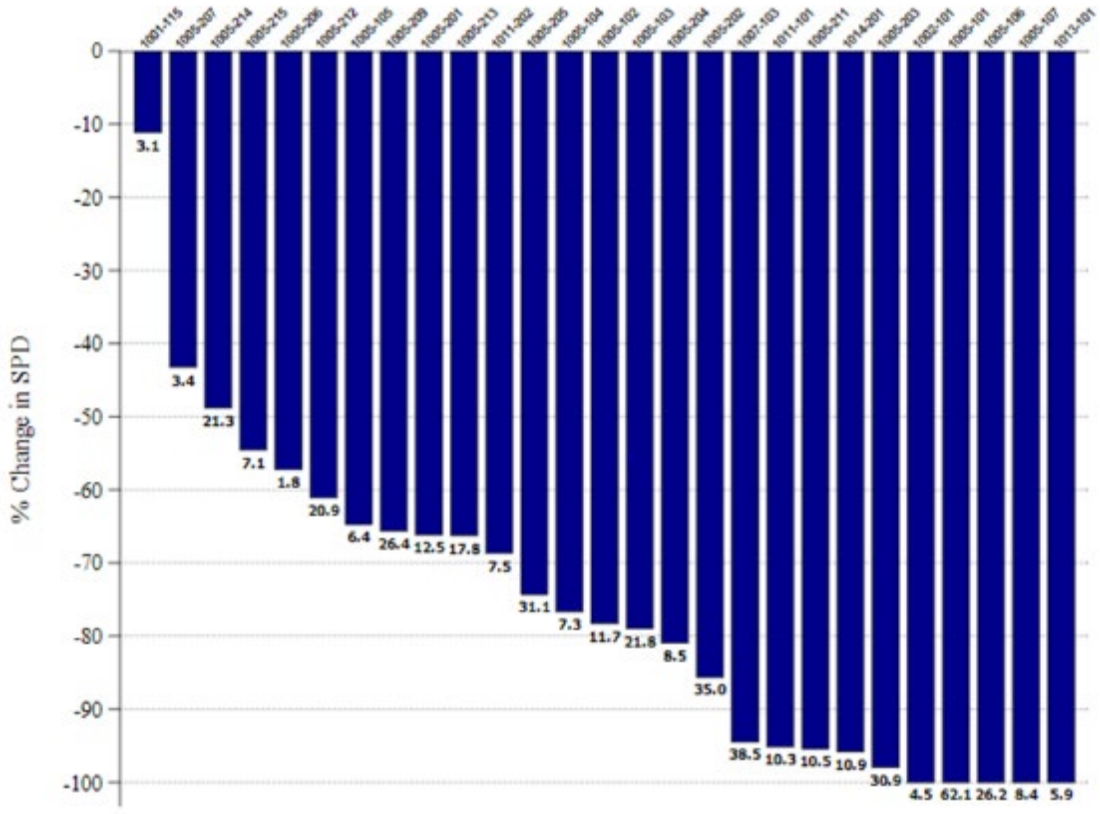
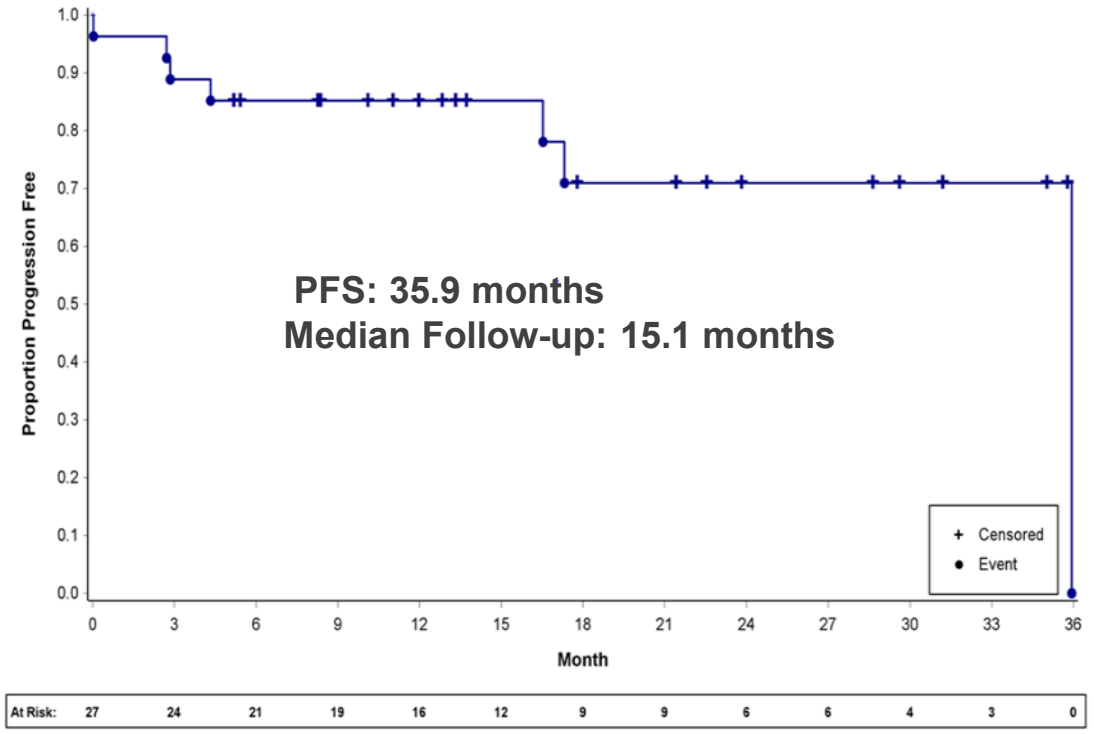
85% ORR and median PFS of 35.9 months

Best Tumor Reduction (SPD)



Progression-Free Survival



Median PFS: 35.9 (95% CI: 17.3, NE)

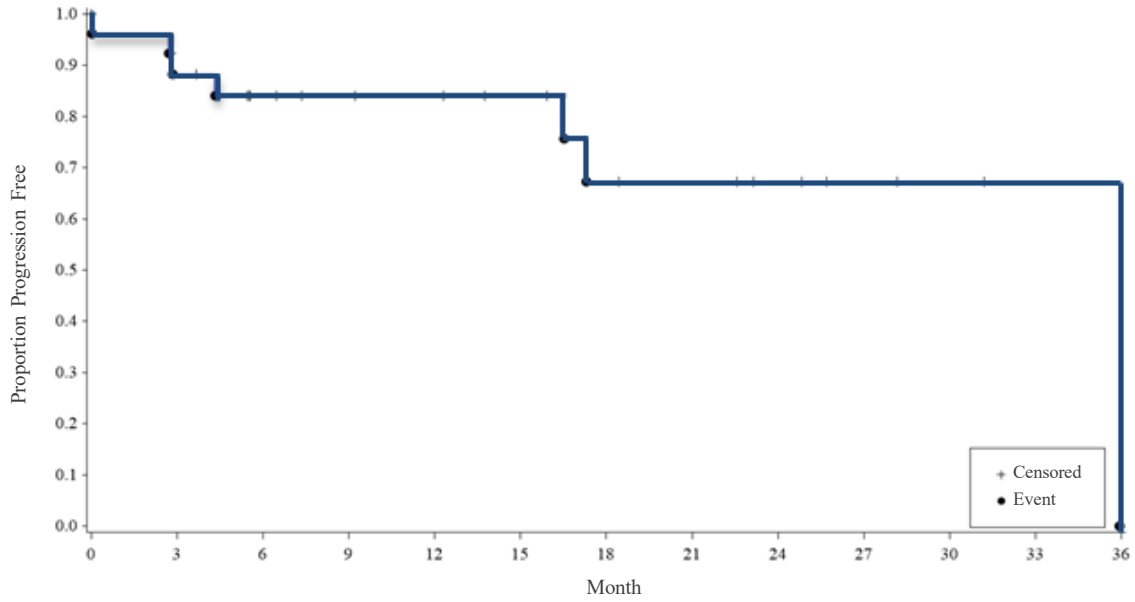
Data Cut: 8Apr2022; Evaluable MCL Part 1 & 2 patients (n=27); Patients were considered evaluable for response if they had 1-dose of zilovertamab and had 1-post baseline tumor assessment; SPD= sum of product of diameters; Number under bars represent baseline SPD; NE= not estimable

R/R MCL: Compares Favorably to Historical Single-Agent Ibrutinib Data

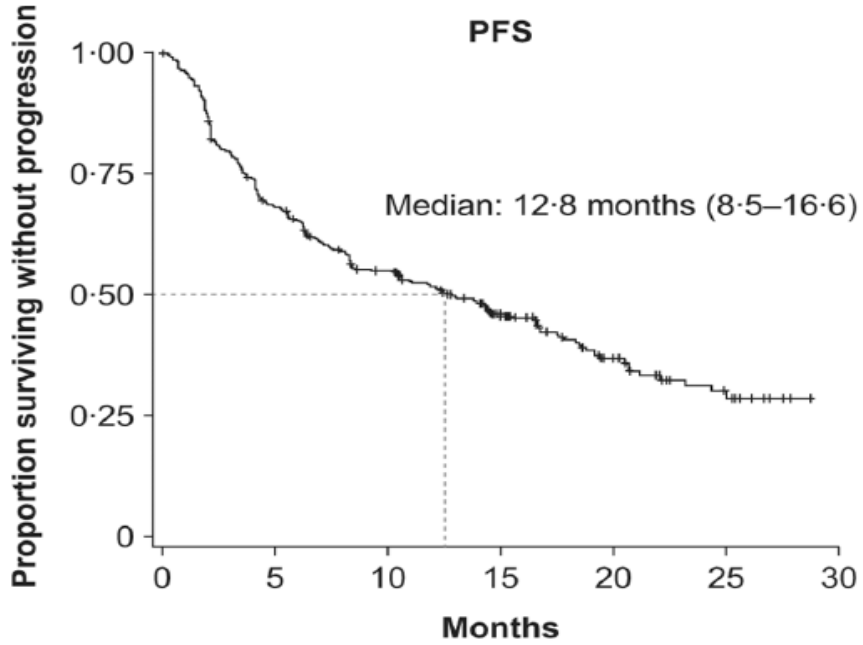
Zilovertamab + Ibrutinib Data Update at ASCO 2022

Zilovertamab + ibrutinib (Oncternal Data Apr 2022)

PFS



Single-agent ibrutinib (Rule 2017 Br J Haematol)



Baseline characteristics	**Median follow-up**	15.1 months	24-25 months
Clinical outcomes	**Median PFS**	35.9 months 95% CI: (**17.3 – NE months**)	12.8 months. 95% CI: (**8.5 – 16.6 months**)
	ORR	**85.2%**	**66%**
	CR	**40.7%**	**20%**

Data Cut: 8Apr2022; Note: Data presented are from separate studies and such data may not be directly comparable due to differences in study protocols, conditions and patient populations. Accordingly, cross-trial comparisons may not be reliable predictors of the relative efficacy or other benefits of the combination of zilovertamab and ibrutinib compared to single-agent ibrutinib; NE= not estimable

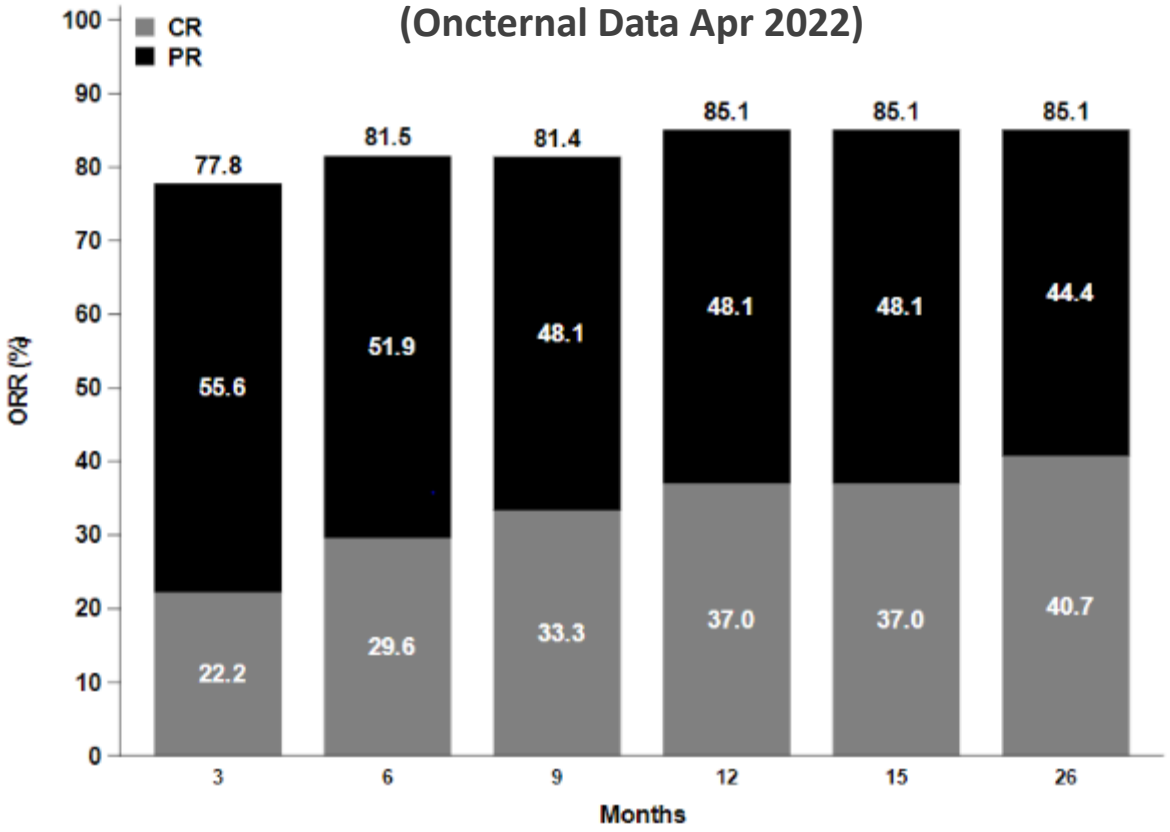
R/R MCL: Compares Favorably to Historical Single-Agent Ibrutinib Data

Zilovertamab + Ibrutinib Data Update at ASCO 2022

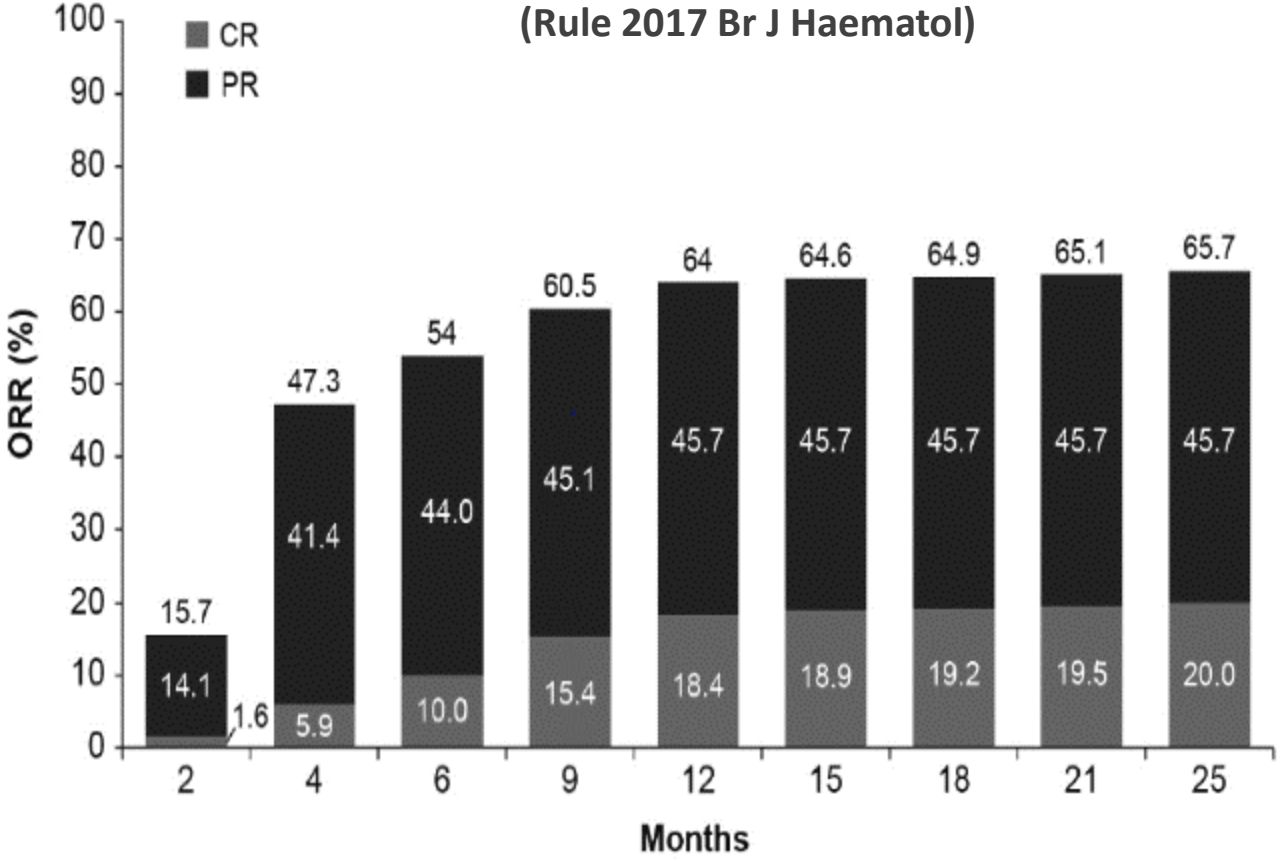
Zilovertamab + ibrutinib combination shows encouraging response rates over time when compared to historical ibrutinib

Clinical Response Rates Over Time in MCL

Zilovertamab + ibrutinib[a] (Oncternal Data Apr 2022)



Single-agent ibrutinib[b] (Rule 2017 Br J Haematol)

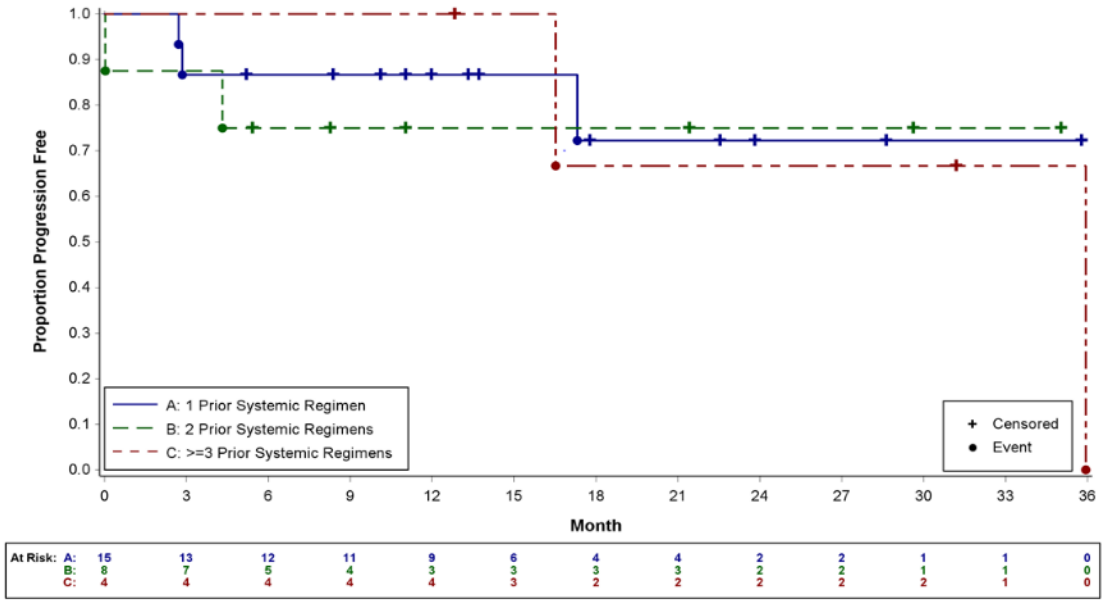


Data Cut: 8Apr2022; MCL Efficacy in Parts 1 & 2; (a) – includes 1 unconfirmed CR; (b) - Patient-level data from three single-agent ibrutinib studies, N = 370 from Rule, Br J Haematol., 2017

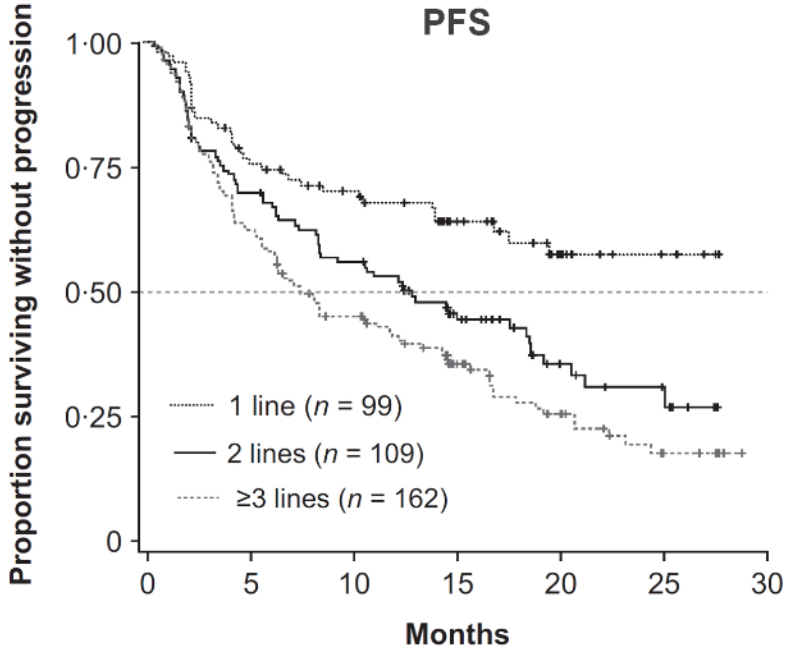
R/R MCL: Encouraging PFS Observed Based on Prior Line of Therapy Compared to Historical Ibrutinib Alone

Zilovertamab + Ibrutinib Data Update at ASCO 2022

Zilovertamab + ibrutinib (Oncternal Data Apr 2022) PFS



Single-agent ibrutinib (Rule 2017 Br J Haematol)



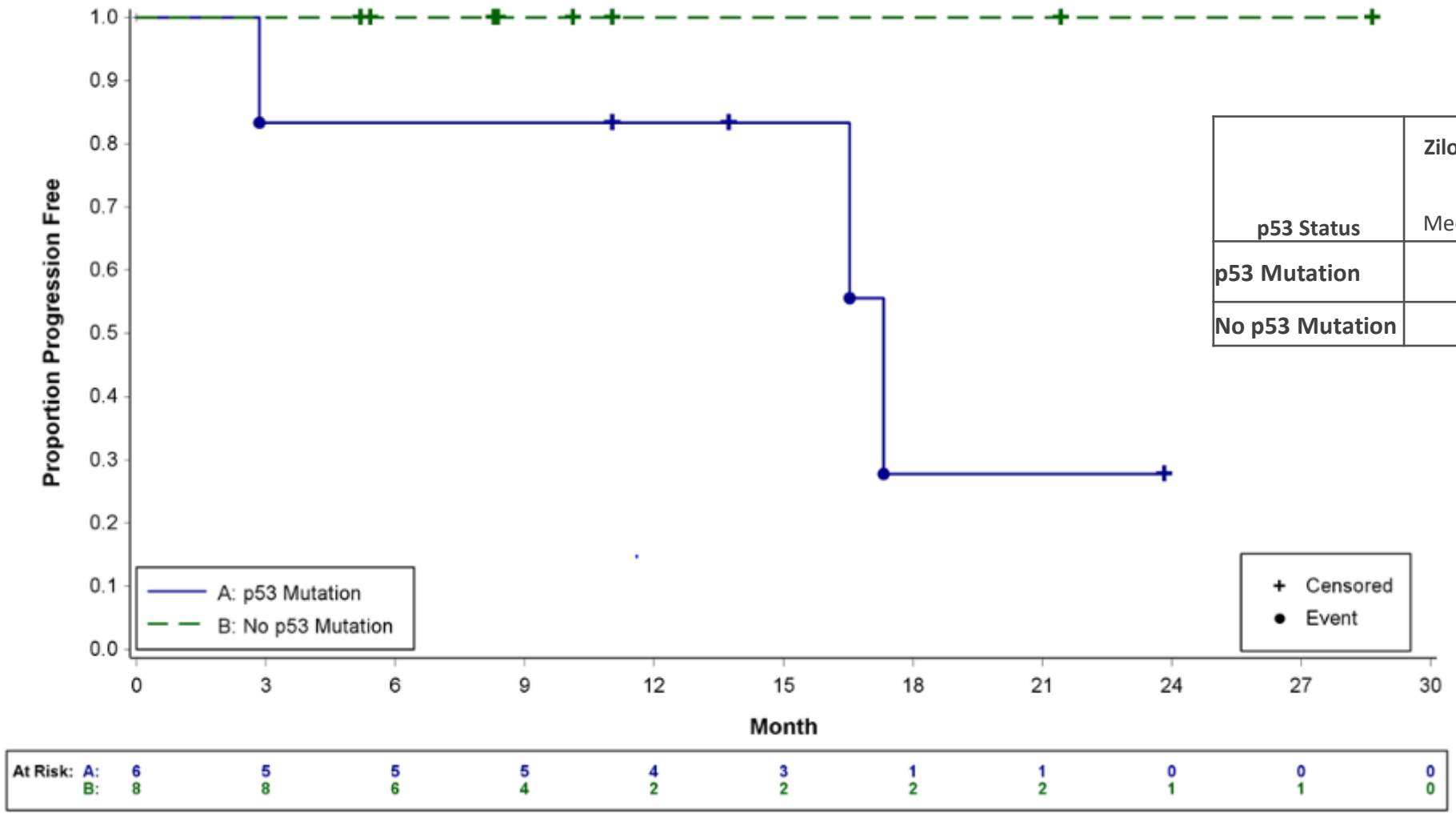
PFS by Subtypes – Prior Systemic Therapy (months)

Prior sys. therapy	Zilovertamab + Ibrutinib PFS , median (95% CI)	Ibrutinib PFS median
1	NR (17.3, NE)	NR
2	NR (0.03, NE)	~12
≥ 3	35.9 (16.5, NE)	~8

Data Cut: 8Apr2022 ;Note: Data presented are from separate studies and such data may not be directly comparable due to differences in study protocols, conditions and patient populations. Accordingly, cross-trial comparisons may not be reliable predictors of the relative efficacy or other benefits of the combination of zilovertamab and ibrutinib compared to single-agent ibrutinib; NE= not estimable

R/R MCL: Progression-free Survival by p53 Mutation Compares Favorably to Historical Single-Agent Ibrutinib Data

Zilovertamab + Ibrutinib Data Update at ASCO 2022



p53 Status	Zilovertamab + ibrutinib (N=6) Median PFS (95% CI), mo	Historical Ibrutinib, Rule 2019[a] (N=20) Median PFS (95% CI), mo
p53 Mutation	17.3 (2.85, NE)	**4.0 (2.1, 8.3)**
No p53 Mutation	NR	12.0 (7.1, 15.6)

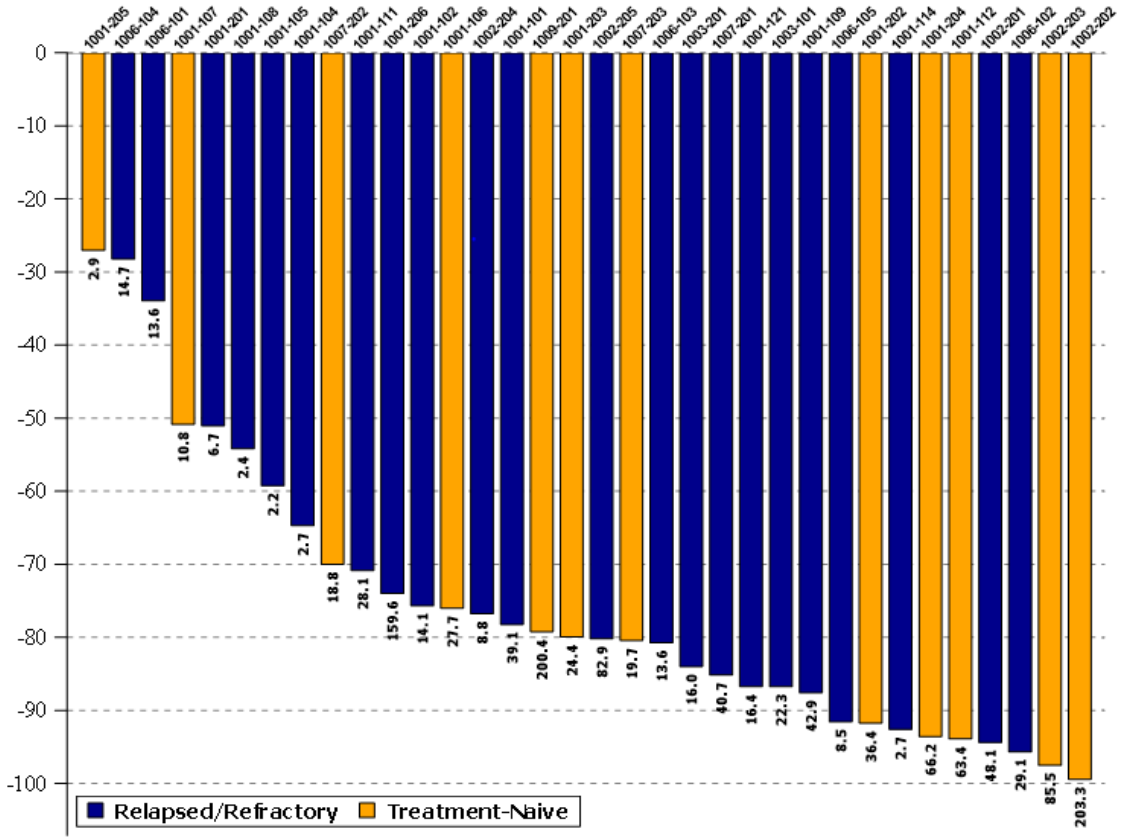
Data Cut: 8Apr2022; MCL Efficacy in Parts 1 & 2; PFS is defined as the time from the first dose to the time of disease progression of death from any cause, whichever comes first; NE = not evaluable; NR = not reached; a - Rule, Hematologica, 2019

CLL: Tumor Reduction and Progression-Free Survival

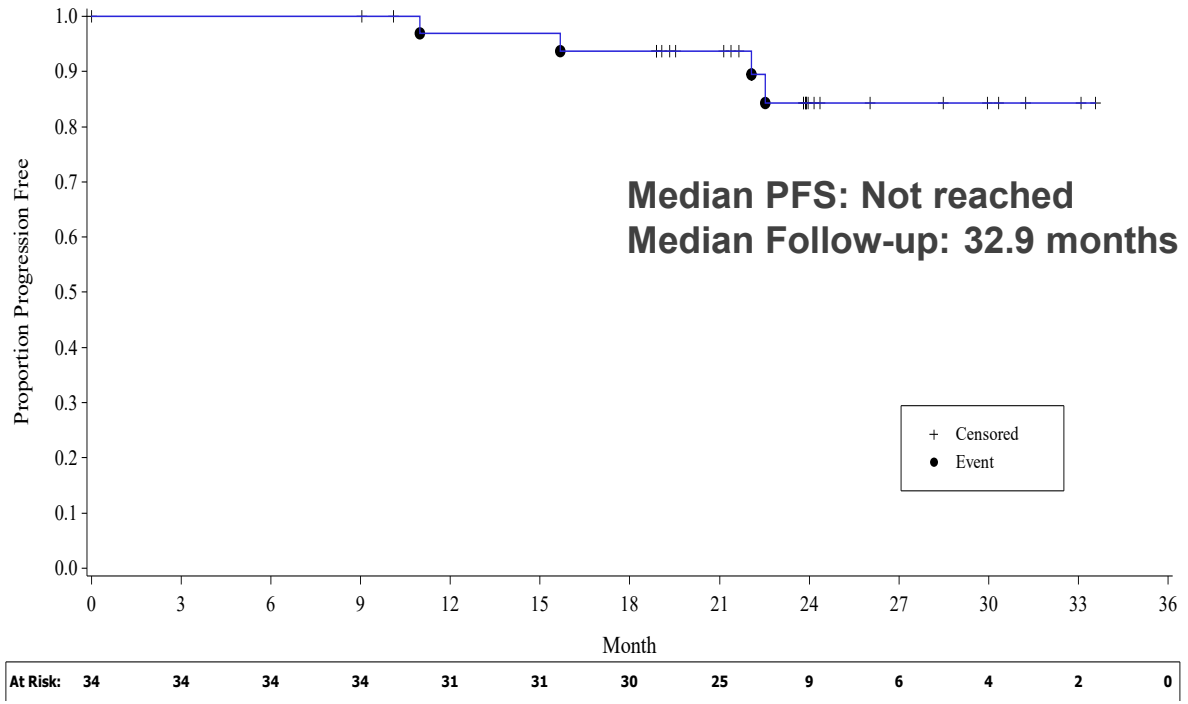
Zilovertamab + Ibrutinib Data Update at ASCO 2022

91% ORR and median PFS was not reached in CLL

Best % Tumor Reduction
CLL Parts 1 & 2



Progression-Free Survival
CLL Parts 1 & 2



Median PFS: NE (95% CI: 36.26, NE)

Data Cut: 8Apr2022; Evaluable CLL Part 1 & 2 patients (n=34); Patients were considered evaluable for response if they had 1-dose of zilovertamab and had 1-post baseline tumor assessment; SPD= sum of product of diameters; Number under bars represent baseline SPD; NE= not estimable

CLL: Encouraging Landmark PFS Based on Number of Prior Lines of Therapy

Zilovertamab + Ibrutinib Data Update at ASCO 2022

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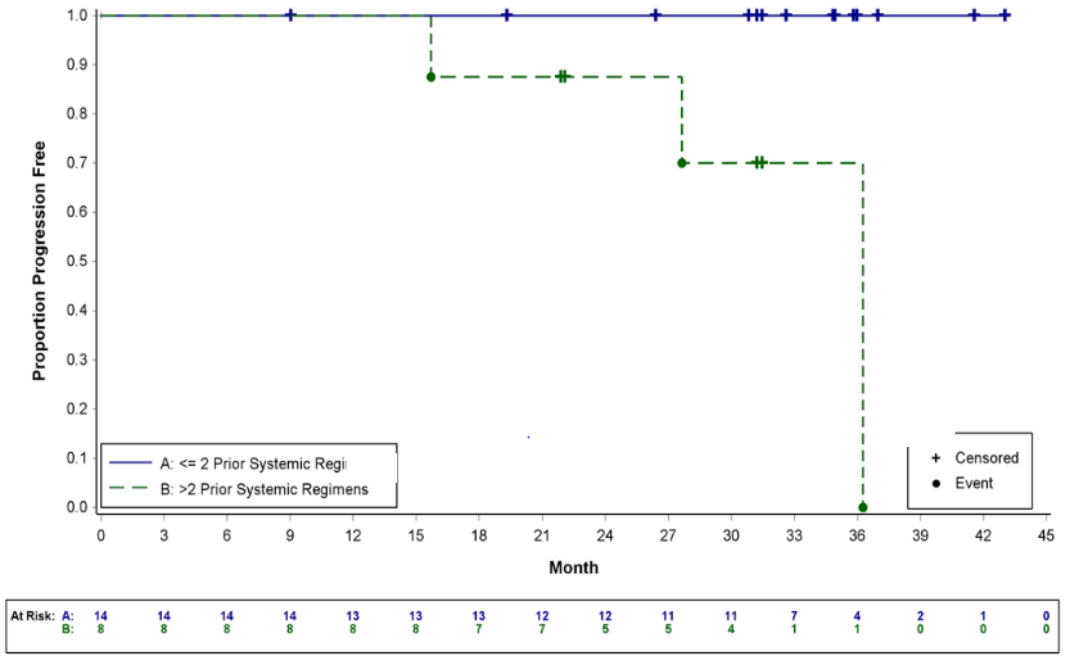
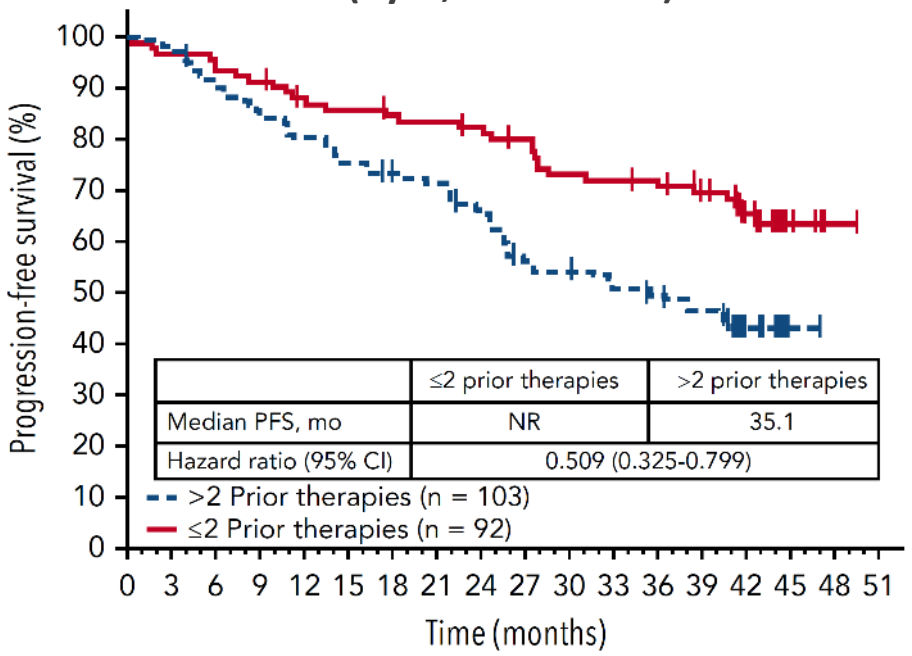
Zilovertamab + ibrutinib (Oncternal Data Oct 2021) PFS



PFS by prior therapies from single-agent ibrutinib treatment in high-risk, relapsed patients with CLL (Byrd, Blood 2019)



PFS by Subtypes – Prior Systemic Therapy

Prior sys. therapy	Landmark PFS 24 months	Landmark PFS 36 months	Landmark PFS 24 months	Landmark PFS 36 months
1 or 2	~100%	~100%	~82%	~73%
> 2	~85%	~65%	~65%	~50%

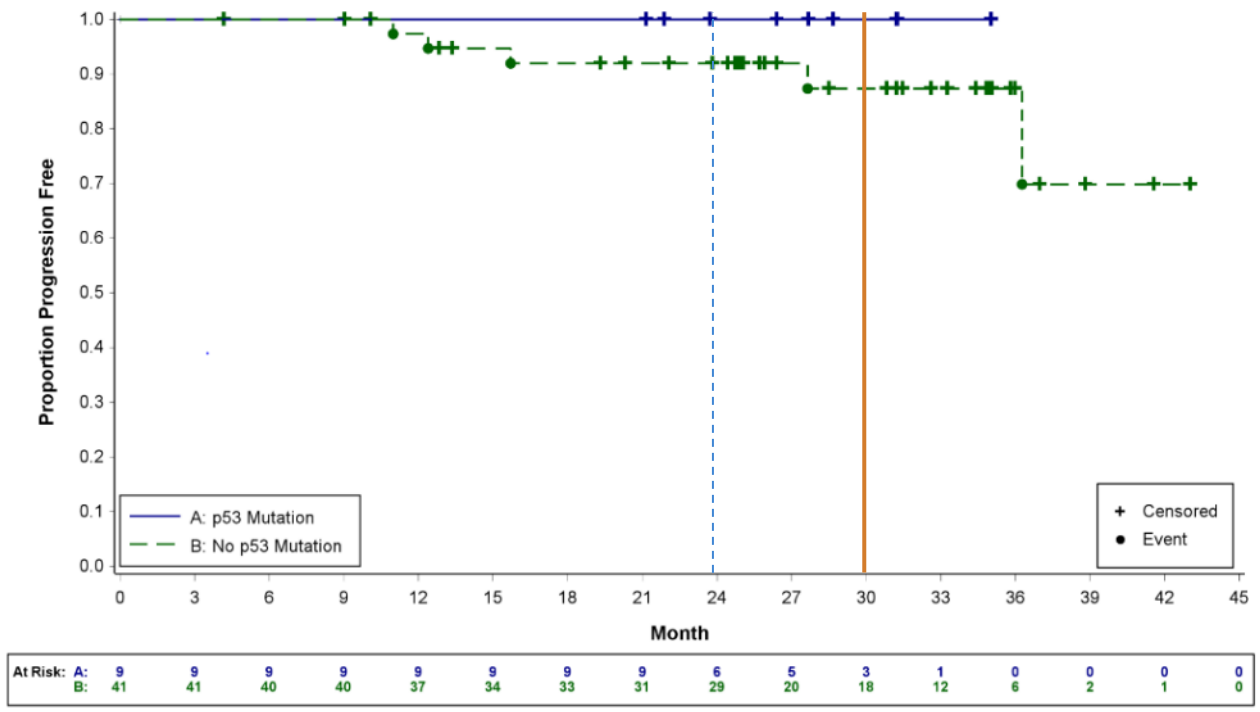
Data: 8Apr2022; PFS is defined as the time from the first dose to the time of objective disease progression or death from any cause, whichever occurs first; NR- not reached. NE – not evaluable

CLL : Progression-free Survival in p53 Altered CLL patients

Zilovertamab + Ibrutinib Data Update at ASCO 2022

ONCTERNAL therapeutics™

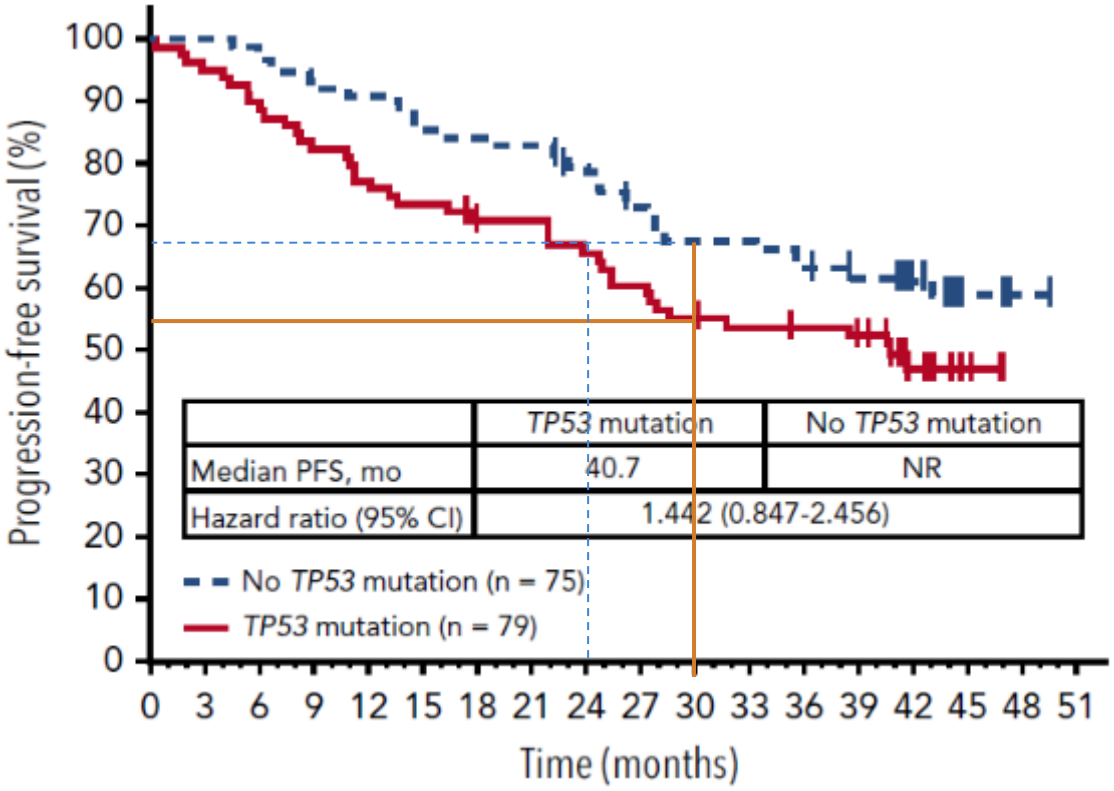
Zilovertamab + Ibrutinib (ASCO 2022)



PFS in p53 altered CLL patients

- **100% at 24 months**
- **100% at 30 months**

Historical Ibrutinib, Byrd, 2019



- **68% at 24 months**
- **55% at 30 months**

Data Cut: 8Apr2022; PFS is defined as the time from the first dose to the time of disease progression of death from any cause, whichever comes first; a – Pooled analysis includes all part 1 and 2 CLL patients + Part 3 CLL patients randomized to treatment with zilovertamab + ibrutinib

Agreement with U.S. FDA on Phase 3 Registrational Study Design for Zilovertamab in the Treatment of Patients with Mantle Cell Lymphoma

ONCTERNAL therapeutics™

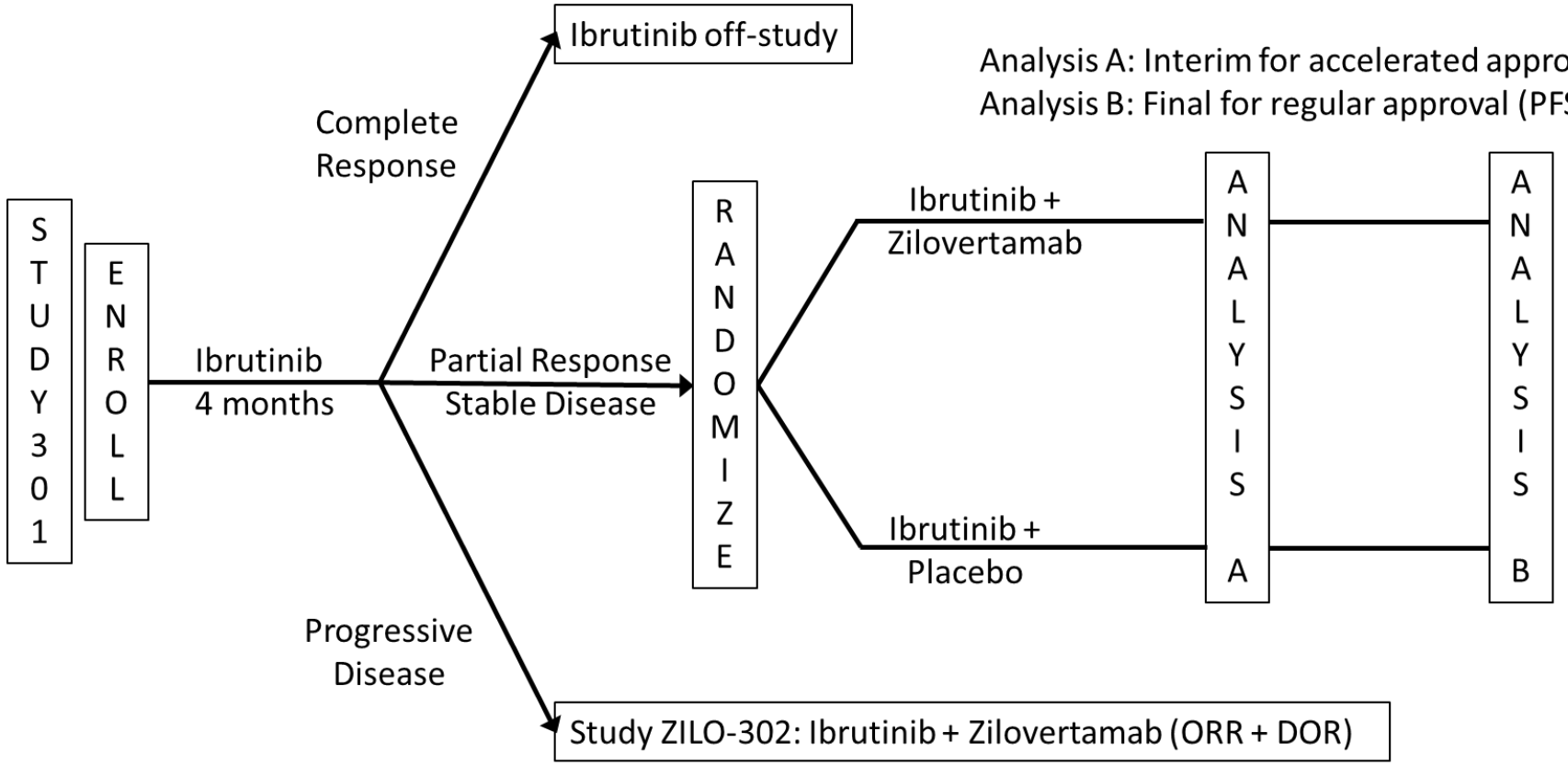
Successful End-of-Phase 2 FDA meeting (December 2021)

- Reached consensus on design and major details of Phase 3 Study ZILO-301, to treat patients with R/R MCL with zilovertamab plus ibrutinib
- Positive feedback on the proposed key clinical and regulatory requirements of our development program for zilovertamab in MCL
- Agency previously provided positive feedback on the sufficiency of the preclinical and pharmacology studies of zilovertamab needed to support a BLA submission

Zilovertamab Registrational Study Plan

ZILO-301: Randomized, Double-blind, Placebo-controlled, Multi-center Phase 3 Study of Zilovertamab (A ROR1 Antibody) Plus Ibrutinib Versus Ibrutinib Plus Placebo in Patients with Relapsed or Refractory Mantle Cell Lymphoma

ZILO-302: Open-label companion study of zilovertamab plus ibrutinib for rescue of patients refractory to ibrutinib during 4-month run-in



- Plan to randomize 250 patients
- Interim data as early as 2 years from first-patient-in (85% power)
- Final data as early as 3 years from first-patient-in (>90% power)

Global registrational study planned to be initiated in 3Q 2022

Established ibrutinib product donation from Pharmacyclics/AbbVie

Zilovertamab Opportunities Beyond MCL
Prostate Cancer (PC)

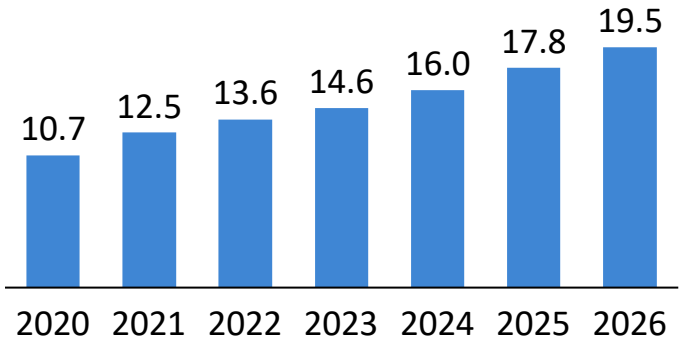
ONCTERNAL therapeutics™

Market Opportunity

High Unmet Medical Need

- Second most frequently diagnosed cancer among men in the U.S. behind skin cancer
- 5-year survival of 30% in the metastatic setting
- >34,000 deaths per year in the US

Prostate Cancer Global Sales Projections
$ billion; Evaluate Pharma



Clinical/Scientific Rationale

- ROR1 is expressed by ~90% of prostate cancers
- ROR1 expression has also been demonstrated on neuro-endocrine prostate cancer cells
- Wnt5a signaling pathway is activated in patients with advanced PC progressing while on AR inhibitor treatment
- Expression of Wnt5a in patients with mCRPC has been associated with poor OS

Clinical Strategy

Ongoing Phase 1b Study in Metastatic Castration-Resistant Prostate Cancer (UCSD IST)

Patient Population:
- Metastatic CRPC
- Prior abiraterone and/or next generation anti-androgen

Design:
- 3+3 dose escalation design with expansion (n=32)
- Docetaxel + ZILO (every 3 weeks x 6)

Primary End Points:
- RP2D

Secondary End Point:
- Clinical benefit rate

UC San Diego Health System

ClinicalTrials.gov Identifier: NCT05156905

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Oncternal's Two-Stage ROR1 Cell Therapy Development Strategy

1 ONCT-808 autologous ROR1 CAR-T cell therapy

- Quick path to demonstration of safety and efficacy
- Reduced technology risk: autologous CAR-T cells
- Reduced indication risk: B-cell malignancies, including failures to prior CD19 CAR-T cell therapy
- Harvard/Dana-Farber Cancer Institute collaboration for Phase 1 manufacturing
- US IND on track for submission in mid 2022

2 Next-generation allogeneic cell therapies targeting ROR1

- Incorporate technologies to overcome immunosuppression & cell therapy resistance
- Partnerships with Celularity and Karolinska Institutet
- Allogeneic CAR-T and CAR-NK cell therapies
- Hematologic and solid tumor indications

Cell Therapy Scientific Advisory Board

Supporting ONCT-808 development and next-gen ROR1 Cell Therapies

ONCTERNAL therapeutics™

Michael Wang, MD

Endowed Professor in the Department of Lymphoma & Myeloma at MD Anderson Cancer Center

- Director of the Mantle Cell Lymphoma Program of Excellence and Co-Director of the B-Cell Lymphoma Moon Shot Program at MD Anderson Cancer Center
- Lead PI in Tecartus® registrational study
- Over 200 peer-reviewed publications

Angela Shen, MD, MBA

Clinical and Translational Market Sector Leader Mass General Brigham

- Deep clinical, regulatory, and strategic expertise in autologous and allogeneic cell therapies
- Experienced CMO in the cell therapy biotech space
- Led clinical team responsible for designing and launching Kymriah® registrational study

Marcela Maus, MD, PhD

Associate Professor, Medicine, Harvard Medical School
Director of Cellular Immunotherapy, Cancer Center, Massachusetts General Hospital

- Translational physician-scientist in cancer immunology
- Lab focuses on the design, generation, and use of innovative forms of immune cell engineering
- Trained in the laboratories of Katherine High, Michel Sadelain, and Carl June

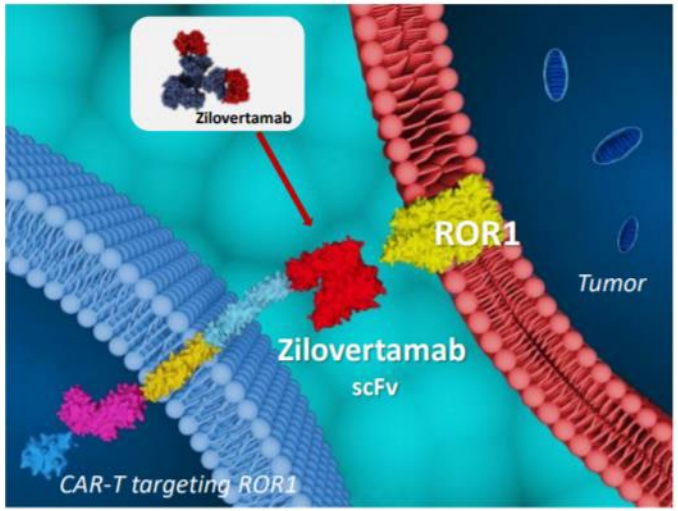
Sadik Kassim, PhD

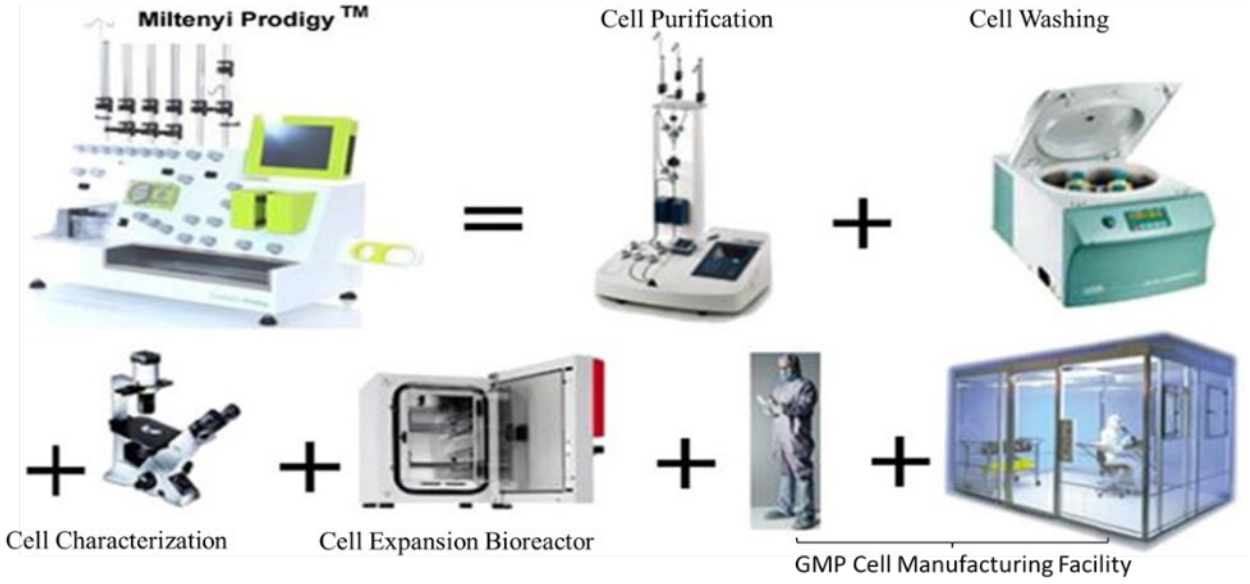
CTO (Genomic Medicines) · Danaher Corporation

- Chief Technology Officer at Vor Biopharma
- Chief Scientific Officer at Mustang Bio
- Led the BLA and MAA CMC efforts for Kite's Tecartus®
- Former Head of Early Analytical Development for Novartis' Cell and Gene Therapies Unit

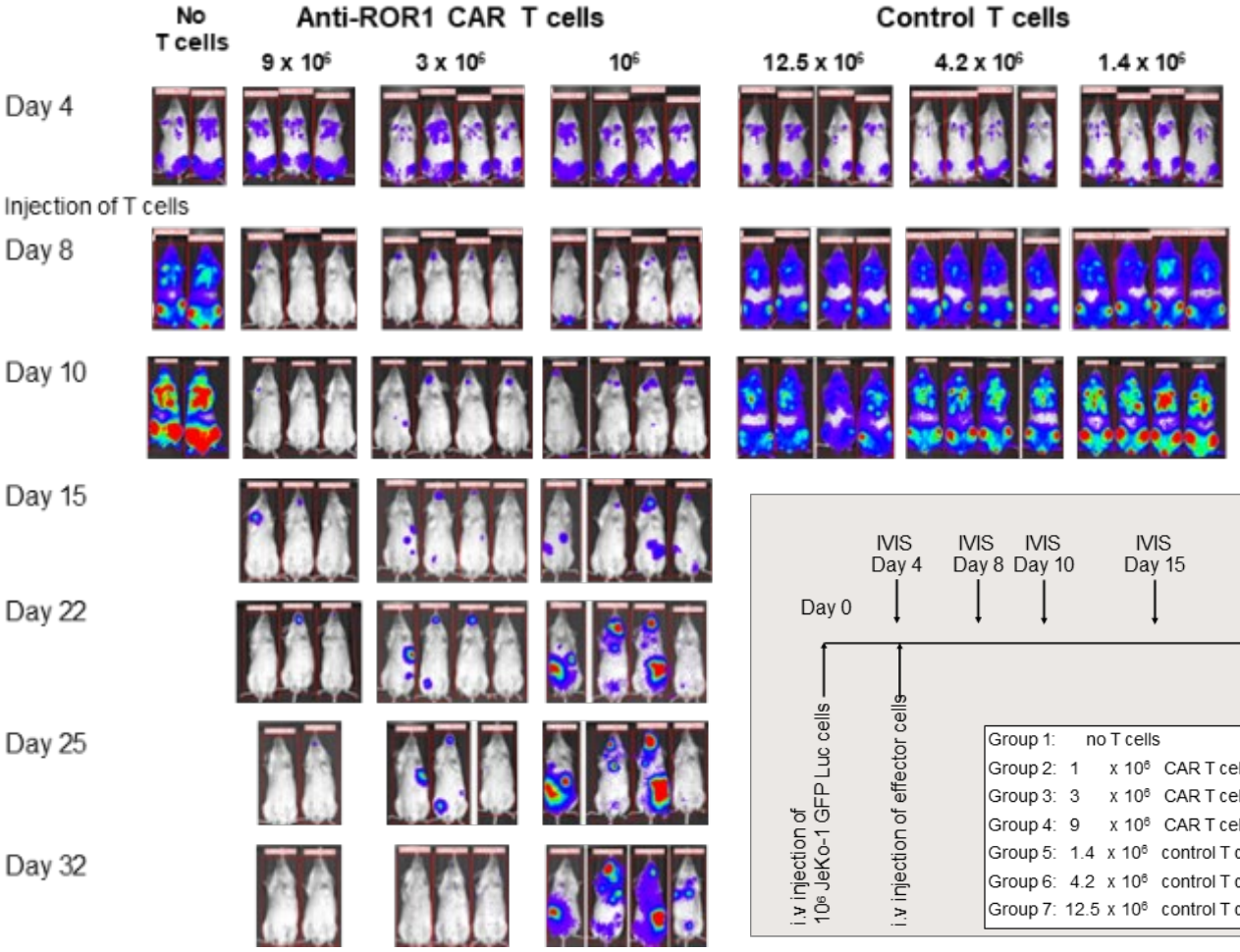
ONCT-808 – CMC and Manufacturing

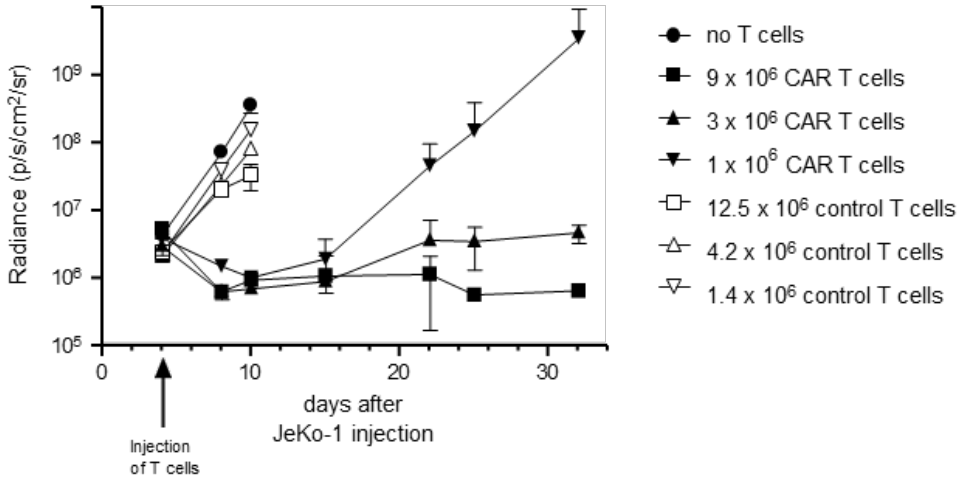
1. **Lead ROR1 CAR construct optimized and selected with demonstrated high potency against ROR1+ cancer cell lines**
2. **Lentivirus production process confirmed**
3. **Oncternal ROR1 CAR-T cell product process optimized and confirmed**
   - Leveraging a flexible, closed fully-automated platform
   - 8-day production process post-activation
   - Greater than 2 billion CAR+ T cells produced with over 60% CAR+ expression
   - Majority of CAR T cells with juvenile phenotypes (CD4 and CD8 stem central memory T cells)
4. **Harvard/Dana Farber CMCF (Cell Manipulation Core Facility) agreed for Phase 1 manufacturing**





ONCT-808 – Strong Anti-tumor Activity in Preclinical Xenograft Model





Data generated in collaboration with Dr. Evren Alici (Karolinska Institutet).

Data were presented at EHA 2022.

- **Strong anti-tumor activity of ROR1 CAR-T cells demonstrated in MCL xenograft mouse model**
- **Data from additional IND-supporting in vivo studies will be presented at upcoming scientific conferences**

Collaboration with Celularity will Explore Synergies between ROR1 Targeting and Novel Placental-Derived Allogeneic Cell Therapy Platform

ONCTERNAL therapeutics™

ONCTERNAL therapeutics™

First-in-class, clinically proven, ROR1-targeting monoclonal antibody and CAR construct

+

celularity®

Off-the-shelf placental-derived allogeneic CAR-NK and CAR-T cell therapy platform

- Research collaboration to develop and evaluate stem cell-derived cellular therapies targeting ROR1
- Will explore use of Oncternal's ROR1-targeting mAb and chimeric antigen receptor (CAR) constructs in combination with Celularity's natural killer (NK) and T cell therapies
- Will leverage advantages of placental-derived cellular therapies and specificity of ROR1 targeting to address significant unmet need in a wide range of cancers

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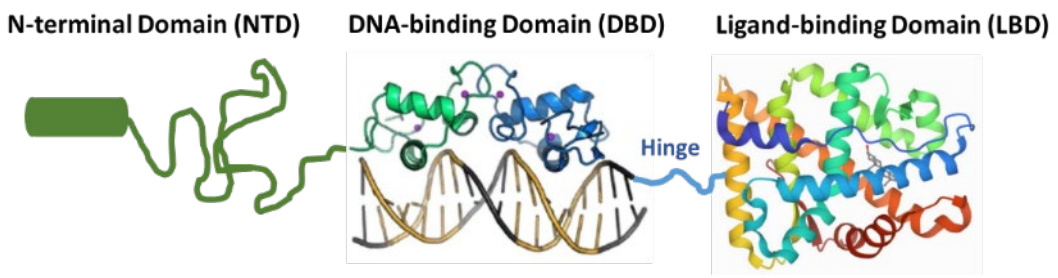
ONCT-534: Dual-Action Androgen Receptor Inhibitor (DAARI)

Differentiated Mechanism of Action

- ONCT-534 binds to both N-terminal Domain (NTD) and Ligand-Binding Domain (LBD) of the androgen receptor (AR) and induces AR degradation
- NTD binding potentially relevant to activity against splice-variants
- Current standard of care treatment options, such as enzalutamide or apalutamide, bind to LBD only



Potential to address unmet needs in prostate cancer

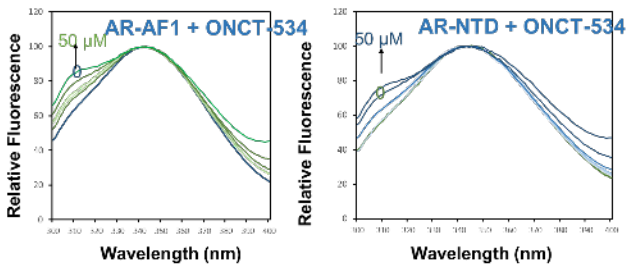
- Potential next-generation treatment option for patients with advanced prostate cancer
  - Focus on addressing emerging unmet medical need related to resistant androgen receptor splice variant (AR-SV)-expressing tumors(1)
- Strong preclinical efficacy in vitro and in vivo
  - Activity against enzalutamide-sensitive and enzalutamide-resistant models, including AR-SV-expressing tumors
- Potential in other AR-driven disease, including luminal AR-triple negative breast cancer (LAR-TNBC) and non-oncology indications

(1) Antonarakis NEJM 2014

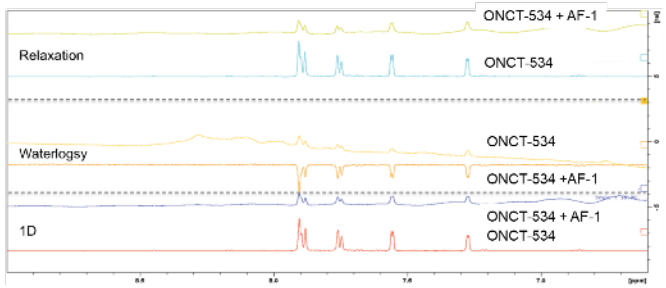
ONCT-534 In-Vivo Data Show Potential as Treatment Option for Enzalutamide Resistant Cancers

Biophysical studies suggest ONCT-534 interacts with AR N-terminus (AF-1)

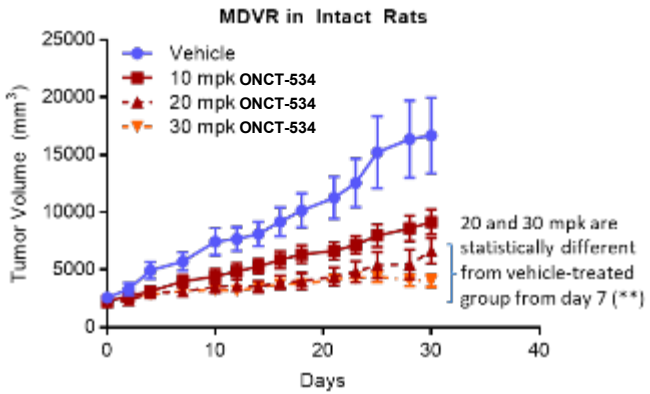
Fluorescence polarization studies with purified AR AF-1

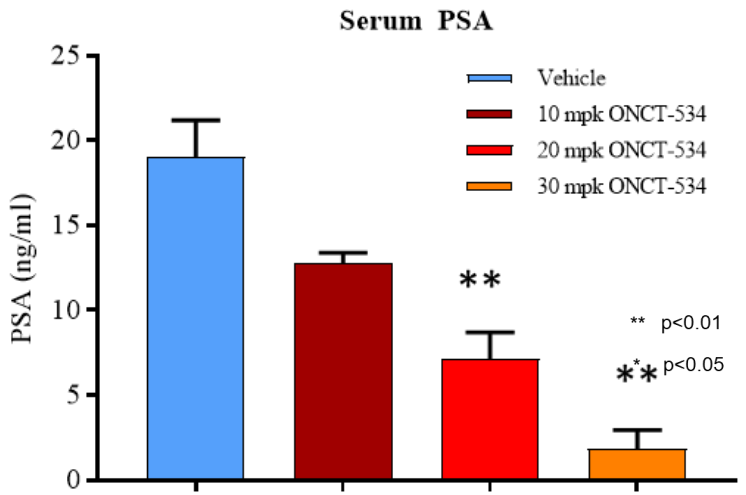


NMR with purified AR AF-1 protein in the presence or absence of ONCT-534



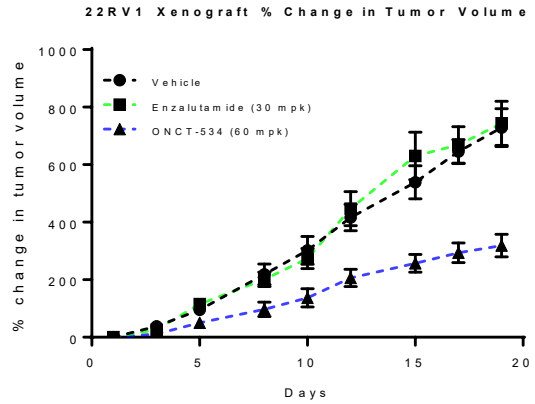
Inhibition of enzalutamide-resistant PCa xenograft in non-castrated animals



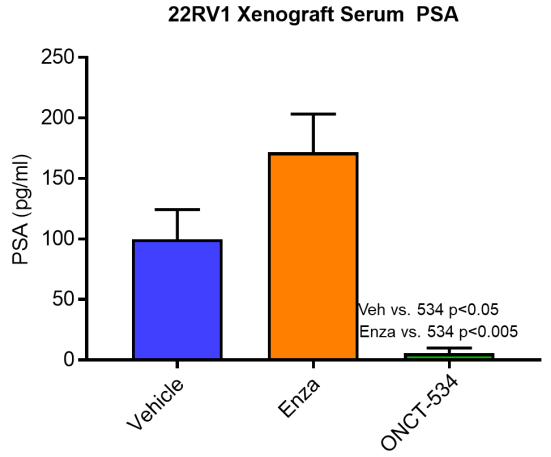


Activity against AR-Splice Variant 7 (AR-V7) xenografts in castrated animals

Inhibition of AR-V7-positive 22RV1 CRPC xenograft



Lowering of serum PSA levels in 22Rv1 tumors



Source: Narayanan, Virtual Poster Presentation at 2021 AACR-NCI-EORTC Virtual International Conference on Molecular Targets

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Financial Information: ONCT (Nasdaq)

Cash & Cash Investments @ June 30, 2022 Cash Runway into 1H 2024	$78.9M
Debt	$0M
Capitalization:	
Common Shares Outstanding	52.2M
Options / Warrants in the Money @ June 30, 2022(1)	1.1M
Fully Diluted in the Money	53.3M
Non-Dilutive Support	
• CIRM Grant for CIRM-0001 Study thru March 2022	$14.6M
• NIH Grants MOA, indication expansion	$2M
• Ibrutinib donation for Phase 3 Study ZILO-301	Supply Agreement

(1) Excludes out-of-the-money stock options and warrants totaling ~11.8M

Anticipated Pipeline Milestones

Zilovertamab

- MCL global registrational Phase 3 Study ZILO-301 initiation — **September 2022**
- MCL & CLL clinical data update for ongoing Phase 2 — **4Q 2022**

ONCT-808 ROR1 CAR-T cell therapy

- B-Cell malignancies U.S. IND submission — **August 2022**

ONCT-534

- Prostate cancer FDA pre-IND interaction — **4Q 2022**

Corporate Highlights

ZILOVERTAMAB: POTENTIALLY FIRST-IN-CLASS MONOCLONAL ANTIBODY TARGETING ROR1

- Safety and efficacy results for zilovertamab + ibrutinib in patients with MCL/CLL compare favorably to historical single-agent ibrutinib
- Encouraging efficacy results in patients with p53 mutated CLL, with PFS of 100% at 24 and 30 months
- Agreement with U.S. FDA on Phase 3 global registrational study design for the treatment of patients with R/R MCL

ONCT-808: AUTOLOGOUS CAR-T CELL THERAPY TARGETING ROR1

- Clinical manufacturing agreement with the Dana-Farber Cancer Institute for first-in-human studies
- Research collaborations for next-gen allogeneic CAR-T and CAR-NK cell therapies with Karolinska Institutet & Celularity

ONCT-534: DUAL-ACTION ANDROGEN RECEPTOR INHIBITOR (DAARI)

- Activity in preclinical prostate cancer models of androgen receptor inhibitor resistance, including AR mutations, AR overexpression and AR splice variants, such as AR-V7

MULTIPLE CATALYSTS

- Planned initiation of zilovertamab + ibrutinib global registrational Phase 3 Study ZILO-301 in 3Q 2022
- Clinical data updates in MCL and CLL
- ONCT-808 ROR1 CAR-T cell therapy IND submission planned in August 2022