Monopar Therapeutics Corporate Presentation
Nasdaq: MNPR

October 2021

Monopar Therapeutics

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Company Overview

Developing proprietary therapeutics designed to extend life or improve the quality of life for cancer patients

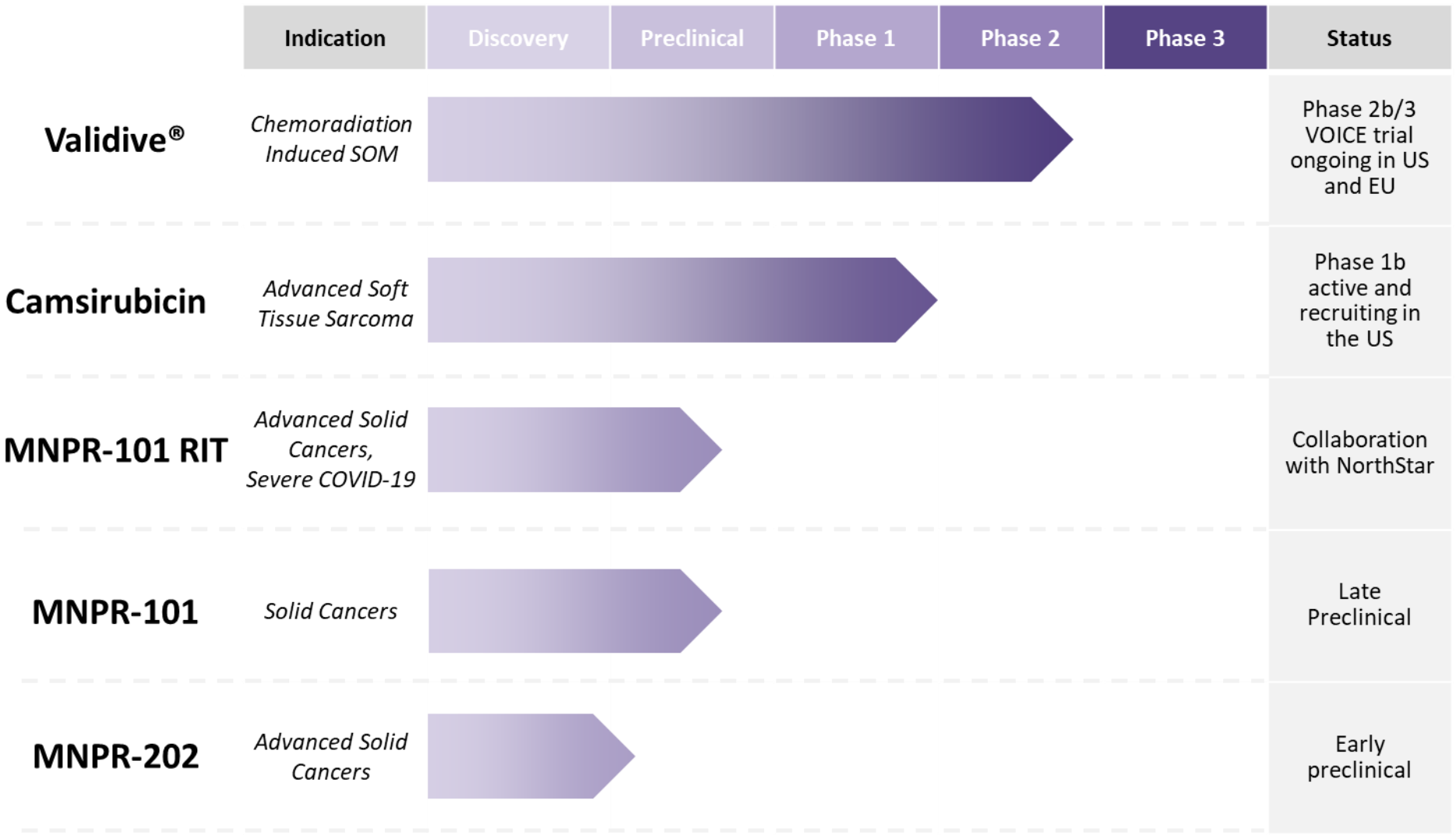
Targeting diseases with high unmet medical need

- Oncology indications with few to no FDA-approved treatments
- FDA Fast Track designation for lead drug candidate, orphan drug designation for 2nd candidate

Diverse pipeline across multiple oncology indications

- Validive®: Active Phase 2b/3 study in severe oral mucositis
- Camsirubicin: Upcoming Phase 1b in advanced soft tissues sarcoma
- MNPR-101, MNPR-101 RIT, and MNPR-202: Preclinical candidates targeting metastatic and solid cancers and severe COVID-19

Pipeline


Indication
Discovery
Preclinical
Phase 1
Phase 2
Phase 3
Status
Validive®
Chemoradiation Induced SOM
Phase 2b/3 VOICE trial ongoing in US and EU
Camsirubicin
Advanced Soft Tissue Sarcoma
Phase 1b active and recruiting in the US
MNPR-101 RIT
Advanced Solid Cancers, Severe COVID-19
Collaboration with NorthStar
MNPR-101
Solid Cancers
Late Preclinical
MNPR-202
Advanced Solid Cancers
Early preclinical

Experienced Management

Strong management team with industry expertise in all phases of drug development

Christopher M. Starr, PhD – Co-Founder, Executive Chairman

- Co-Founder & Former CEO, Raptor Pharma (Nasdaq: RPTP), acquired by Horizon for $800M
- Co-Founder, Former SVP/CSO, BioMarin (Nasdaq: BMRN)

raptor pharmaceutical corp. BIOMARIN®

Kim R. Tsuchimoto – Chief Financial Officer

- Former CFO, Raptor Pharma
- Former VP, Treasurer at BioMarin

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Chandler D. Robinson, MD, MBA, MSc – Co-Founder, CEO

- Co-Founder, Former CEO, Tactic Pharma; lead drug Decuprate ultimately acquired by Alexion for $764M
- Stanford MD, UK Fulbright Scholar and Gates Scholar, published in *Science*

ONYX PHARMACEUTICALS Tactic Pharma, LLC

Andrew J. Cittadine, MBA – Chief Operating Officer

- Co-Founder, Former CEO, American BioOptics, acquired by Olympus
- Former CEO, SonarMed, acquired by Medtronic

americanbio optics Sensant

Andrew P. Mazar, PhD – Co-Founder, Chief Scientific Officer

- Co-Founder, Former CSO, Tactic Pharma; invented and developed Decuprate (now ALXN1840)
- 30+ years translational oncology experience, co-author on 126 peer-reviewed publications

Abbott Tactic Pharma, LLC

Patrice Rioux, MD – Acting Chief Medical Officer

- Former Chief Medical Officer, Raptor Pharmaceuticals
- Responsible for securing regulatory approval of PROCYSBI® in the US and EU

raptor pharmaceutical corp. Biogen

Validive®

Phase 2b/3 – Severe Oral Mucositis

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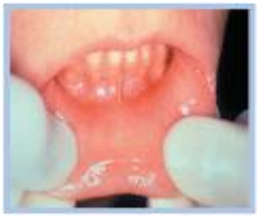
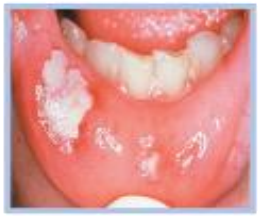
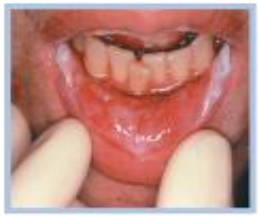
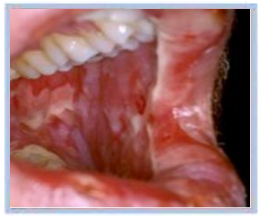
Severe Oral Mucositis (SOM) in Oropharyngeal Cancer

SOM (grade 3-4 oral mucositis) is a very painful, debilitating side effect of chemoradiotherapy

- Caused by chemoradiation used to treat oropharyngeal cancer (OPC)
- Results in the painful destruction of the mouth and oropharynx causing inability to eat and/or drink
- Diminishes quality of life – complications include interrupted treatment, increased hospitalization, and long-term post-radiation toxicities

Grade 0	Grade 1	Grade 2	Grade 3	Grade 4
No change				
	Soreness/erythema	Ulcers; can eat and drink	Ulcers; liquid diet only	Nothing by mouth possible

Validive® Market Opportunity

Approximately 40,000 OPC cases in the US in 2020 and increasing

- OPC is the fastest growing head and neck cancer subtype, driven by the HPV epidemic
- Potential to expand to additional head and neck cancer subtype – nasopharyngeal cancer

Patients incur significant medical costs, reduced quality of life, and ongoing therapy

- Complications include trismus, dysphagia, and lung injury from frequent aspiration

No FDA approved preventions or treatments for SOM, only palliative remedies, presenting a large unmet medical need

Validive® is currently being tested in a Phase 2b/3 as a preventative for SOM

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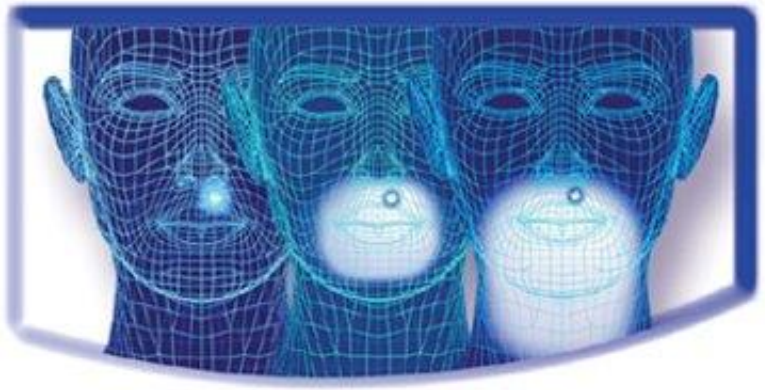
Convenient, Easy Administration

Validive's ease of use and self-administration are highly convenient for patients and healthcare providers

- Active ingredient of Validive®, clonidine, has a well-established safety profile
- Sustained exposure in the oral cavity with reduced systemic absorption

Self-administered by affixing to upper gums



Dissolves slowly over several hours, resulting in the extended release of clonidine into the oropharynx

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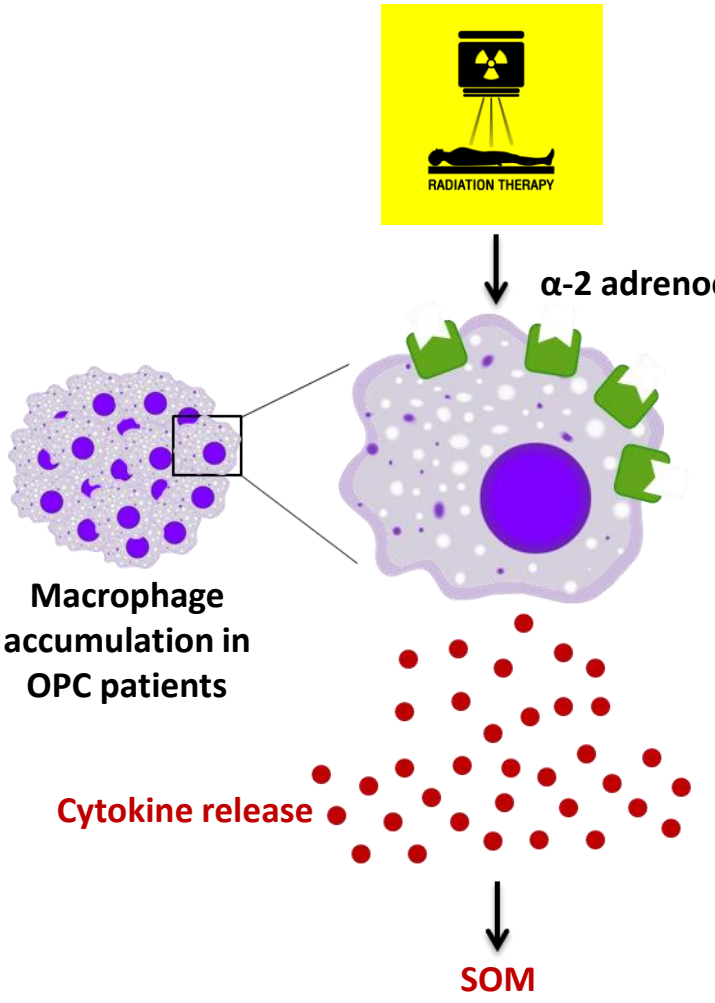
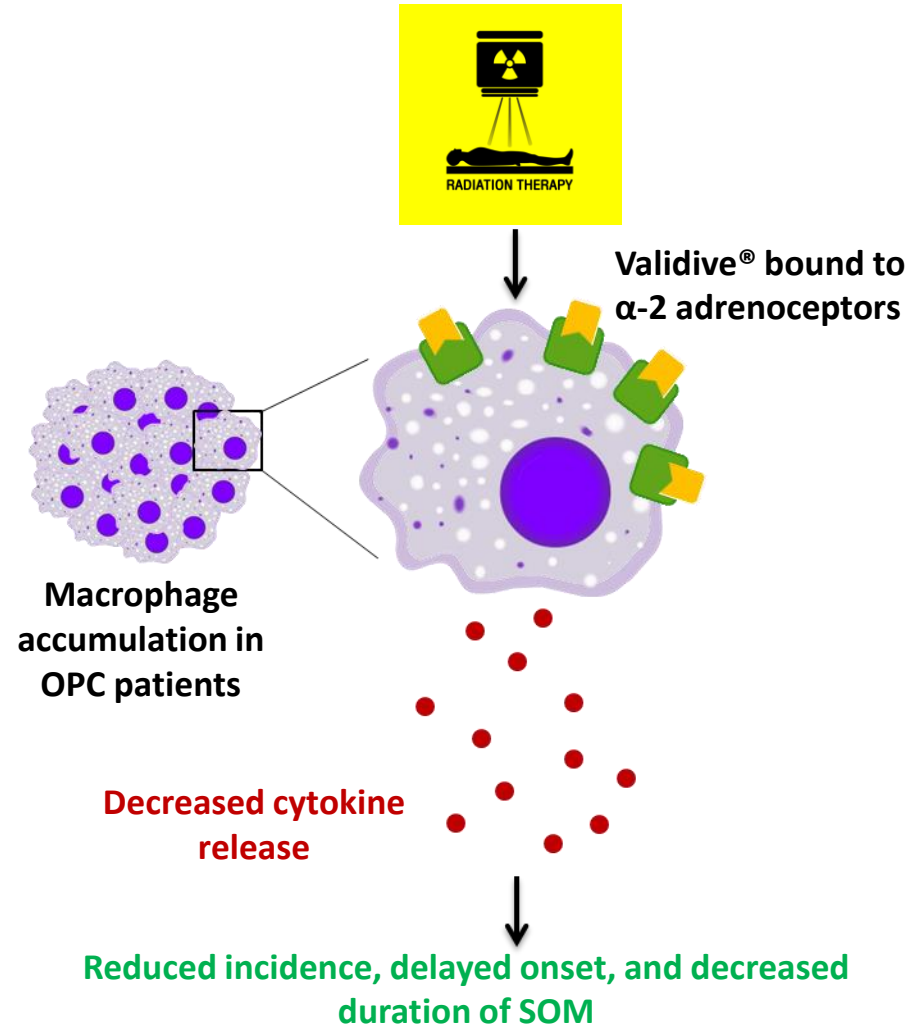
Validive® Mechanism of Action Targets Cause of SOM in OPC

Without Validive®



With Validive®



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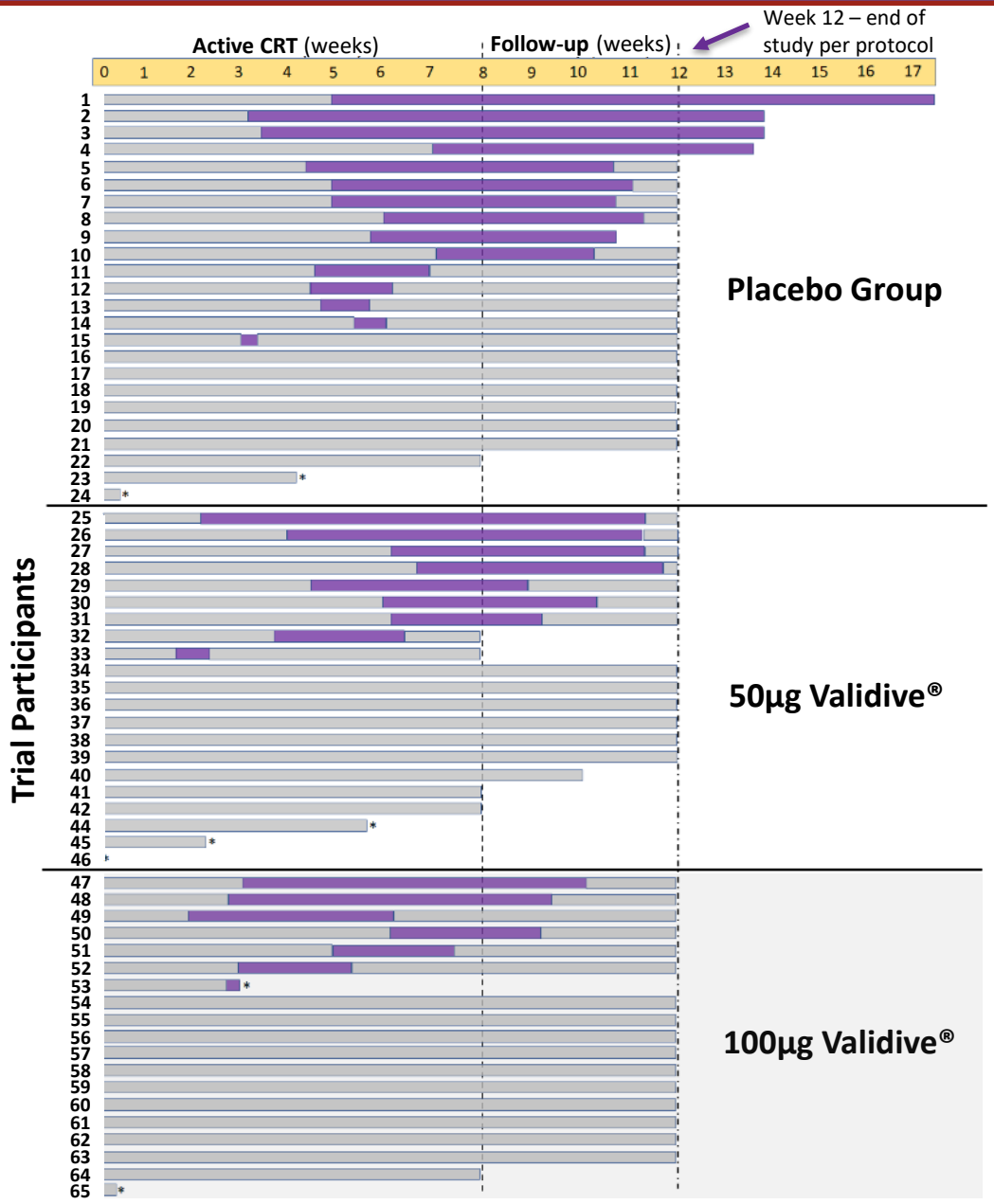
Completed Phase 2 Dose Response in Oropharyngeal Cancer



- Each line is a patient
- Purple bars show onset and resolution of SOM
- Visually, from placebo to Validive® 100µg, SOM decreases in incidence and duration

No SOM

SOM

*** = study discontinuation**

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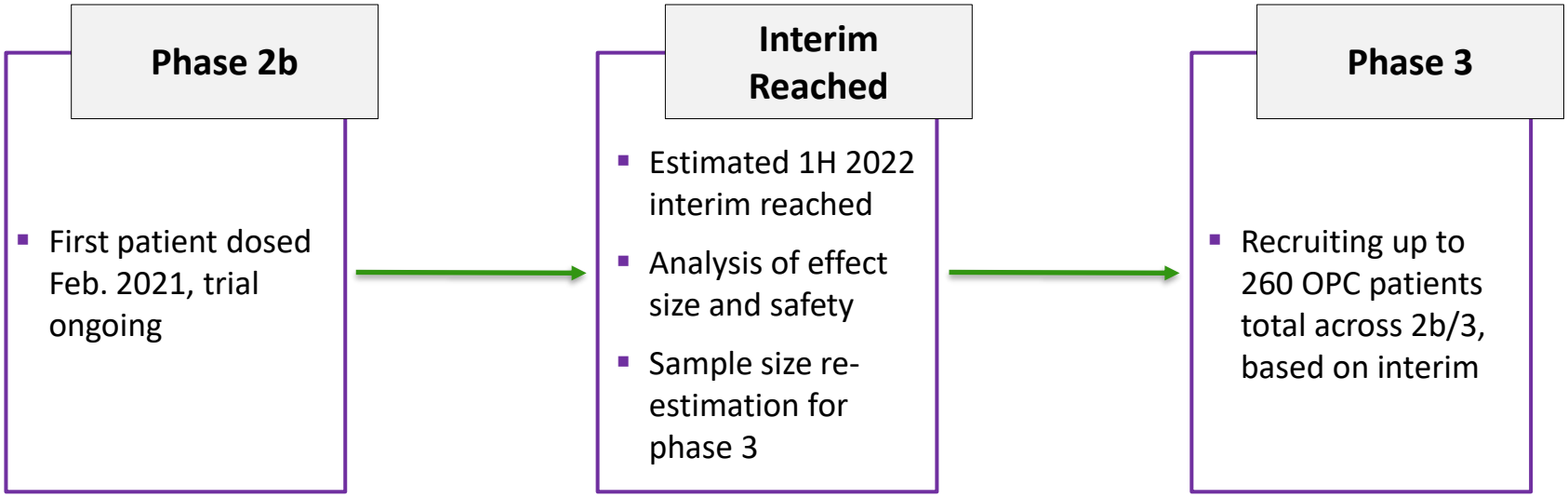
Validive® Trial Design

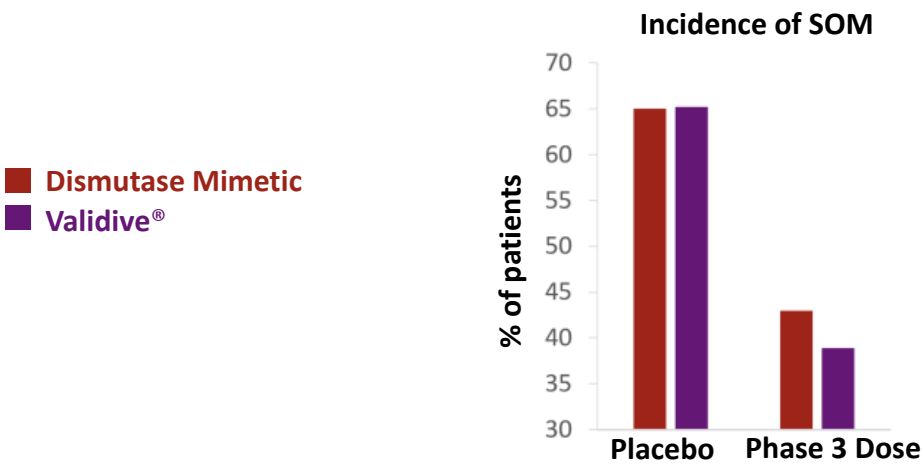
Phase 2b/3 VOICE trial is an adaptive trial design



Validive® granted FDA Fast Track designation

Validive® Compares Favorably to Other Late-Stage SOM Therapy

	Validive®	Dismutase Mimetic
Active Ingredient	FDA approved, in use for decades	Not approved; in development since 2002
Administration & Dosing	Oral adhesive tablet; self-administered once daily	1-hour IV infusion; given daily 60 min prior to radiation treatment
Safety	Local delivery→ low dose; Limited systemic exposure	Systemic treatment is of potential concern
505(b)(2) Pathway Possible	Yes	No



Data from separate randomized, double-blind, placebo-controlled Phase 2 studies for Dismutase Mimetic and Validive®

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Camsirubicin

Phase 1b – Advanced Soft Tissue Sarcoma

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The Need for an Improved Version of Doxorubicin

Doxorubicin is one of the most widely used cancer drugs but has major limitations

Doxorubicin is effective and used annually by >1.2M cancer patients worldwide[1], but lifetime dose is restricted to prevent severe heart damage

Cardiac toxicity significantly limits the benefit of doxorubicin

- Higher doses increase anticancer efficacy but also increase the rate of irreversible heart damage
- Patients must stop treatment after 6-8 cycles, even if disease control is observed
- Cumulative dose restriction negatively affected response rates in multiple cancer indications by as much as half

[1]*Grand View Research 2017 Doxorubicin Market Report*

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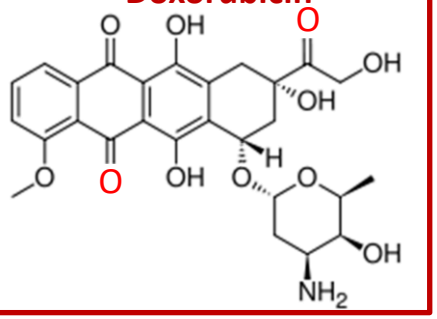
Camsirubicin: A Potential Improvement of Doxorubicin

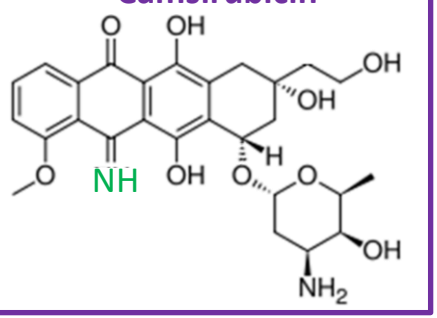
Camsirubicin is a novel proprietary analog of doxorubicin

- Doxorubicin modified at the 5 and 13 positions, with the aim of retaining anti-cancer activity without the irreversible heart toxicity

Doxorubicin



Camsirubicin



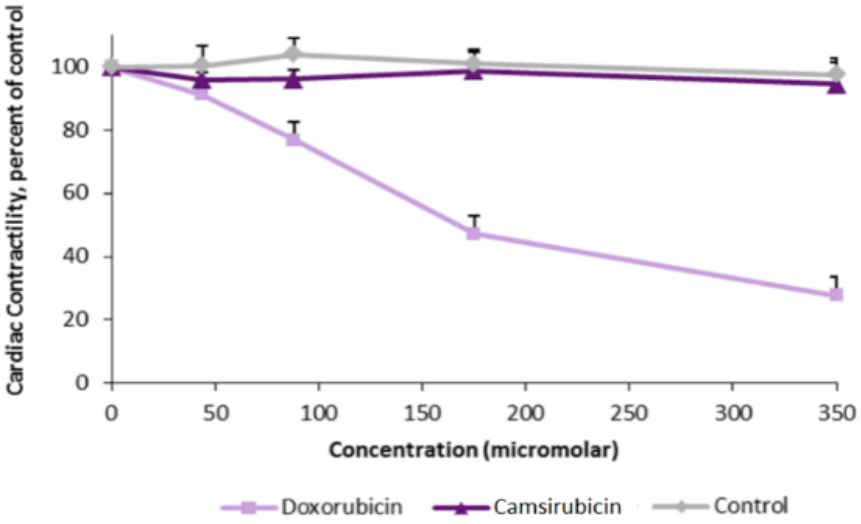
Development hypothesis: Modifying doxorubicin to reduce cardiac damage may enable higher and longer dosing, resulting in better patient outcomes

Camsirubicin: Evidence of Activity with Minimal Cardiotoxicity

Preclinical and clinical data: no irreversible cardiotoxicity observed to-date

- Administered for up to 16 cycles* (doxorubicin limited to 6-8 cycles)
- Clinical benefit correlated to higher doses and higher cumulative doses
- Phase 2 trial in patients with advanced soft tissue sarcoma (ASTS) showed comparable effect to Doxorubicin at a dose potentially substantially *below the max tolerated dose*

Rabbit Atria Model of Cardiotoxicity



Phase 1	Result
% patients with clinical benefit (PR+SD)	55.0%

Single-Arm Phase 2	Result
% patients with clinical benefit (PR+SD)	52.6%
Progression free survival at 6 months	38%
Doxorubicin progression free survival at 6 months†	23-33%

*One patient received 20 cycles on compassionate use
†Results pulled from 3 separate studies | "PR + SD" = Partial Response or Stable Disease

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Advanced Soft Tissue Sarcoma: Initial Indication to Evaluate Camsirubicin

1st line standard of care in ASTS is doxorubicin monotherapy, which allows for a direct comparison to camsirubicin

Clinical Strategy – Evaluate Potential Benefit of Higher Dose & Longer Use

- Clean setting, no previous treatment for ASTS, not pretreated as in 2nd or 3rd line
- Prior Phase 2 dose was identified based on a dose-limiting toxicity of neutropenia in the absence of growth factor support
- Phase 1b will evaluate the effect of higher doses with growth factor support present, which prevents neutropenia and could enable much higher dosing
- Randomized Phase 2 trial planned to test camsirubicin vs. doxorubicin head-to-head and could serve as the basis for accelerated approval
- Very high unmet medical need; median overall survival 12-15 months

Trial Design for Phase 1b and Anticipated Phase 2

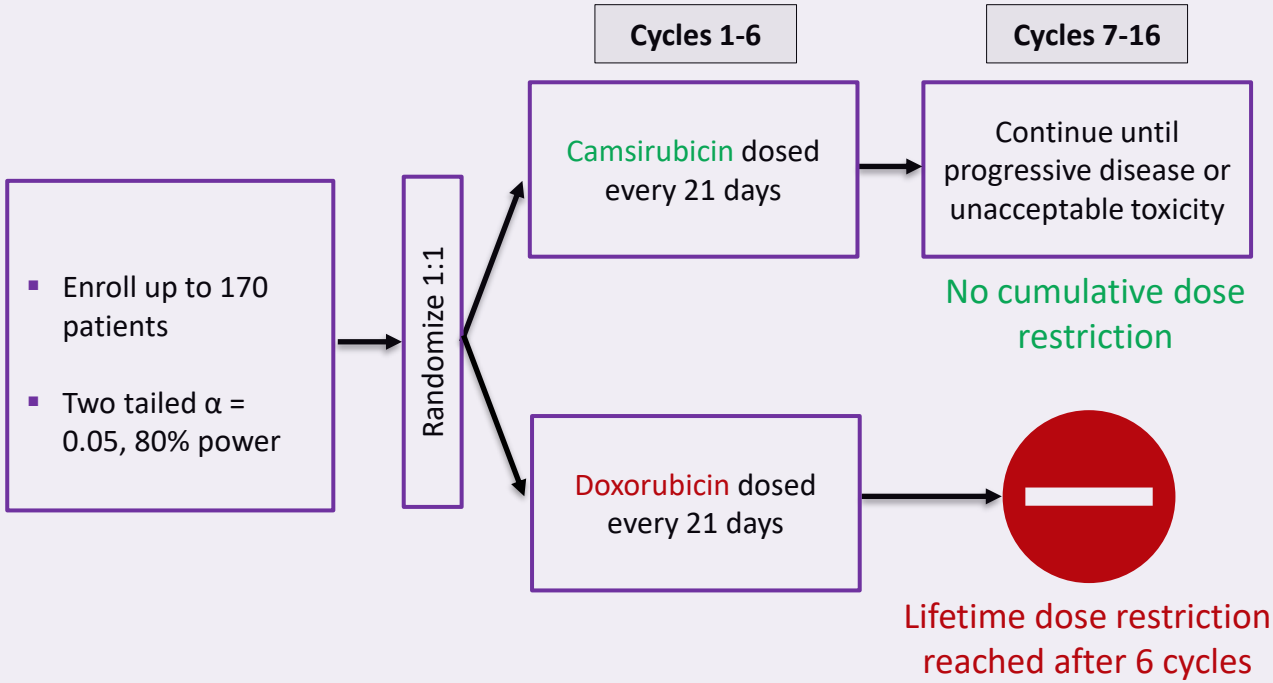
Phase 1b

Aim is to determine the strongest acceptable anticancer dose to evaluate in a Phase 2 trial

- Camsirubicin + prophylactic pegfilgrastim
- Dose escalate to establish RP2D/MTD
- May provide early indication of antitumor activity

Anticipated Phase 2

Primary endpoint: Progression Free Survival (PFS)
Secondary endpoints: Overall Survival (OS) and Overall Response Rate (ORR)



'RP2D' = Recommended Phase 2 Dose
'MTD' = Maximum Tolerated Dose

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ASTS Initial Market, with Significant Clinical Expansion Opportunities

ASTS represents a promising market with a $300M+ 2nd year sales precedent[2]

- Estimated 15,000+ patients per year in the US and Europe

Demonstrating camsirubicin superiority over doxorubicin in ASTS may enable expansion into numerous other cancer indications

Additional indications where doxorubicin is FDA approved:

- ALL
- AML
- Hodgkin Lymphoma
- Metastatic Bladder
- Metastatic Bone Sarcomas
- Metastatic Brain
- Metastatic Breast
- Metastatic Gastric
- Metastatic Lung
- Metastatic Ovarian
- Metastatic Thyroid
- Metastatic Wilms' Tumor
- Non-Hodgkin Lymphoma

Emerging opportunity when combined with checkpoint inhibitors:

- 2nd line ASTS
- Neoadjuvant Triple Negative Breast
- Neoadjuvant HER2+ Breast
- Muscle Invasive Bladder

[2]Sales precedent based on Eli Lilly's 2nd year sales of Lartruvo for ASTS, which was pulled from the market in 2019

MNPR-101

Preclinical – Advanced Solid Cancers

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MNPR-101 Overview

MNPR-101 is a monoclonal antibody that targets uPAR, a well-credentialed target in metastatic solid cancer

MNPR-101:

- Preclinical humanized monoclonal antibody
- Highly selective to urokinase plasminogen activator receptor (uPAR)
- Therapeutic potential as a:
  - Naked antibody
  - Radio-immuno-therapeutic/ targeted alpha therapy
  - Imaging agent

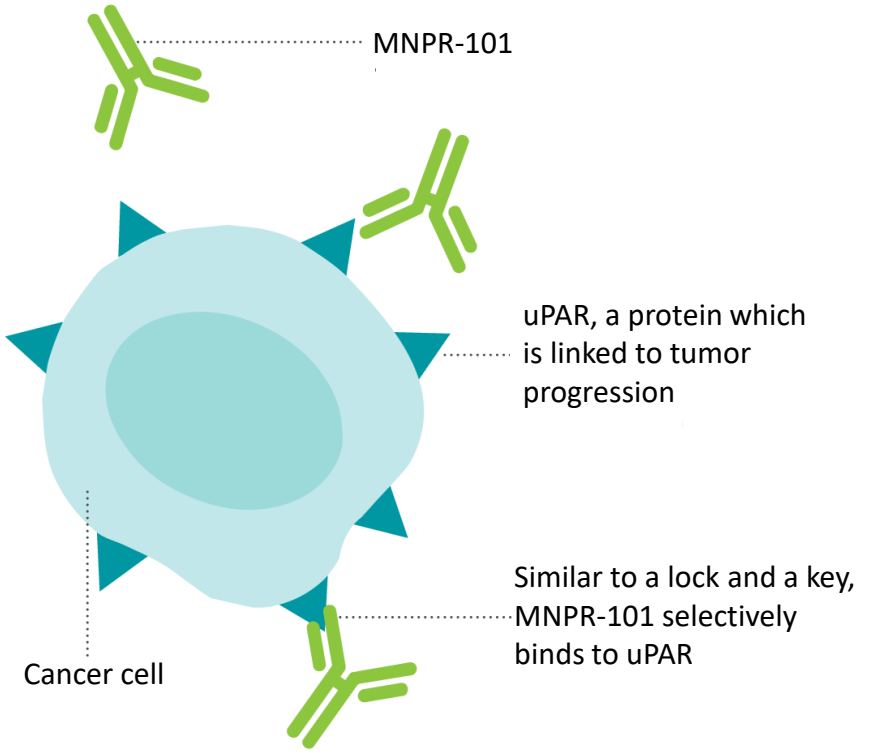

Image source: Cancer.gov

MNPR-101 Development Strategy

Aim to develop a highly selective radio-immuno-therapeutic and companion diagnostic targeting tumors expressing uPAR

Radio-Immuno-Therapeutic

- Targeted alpha therapy combining MNPR-101 with Ac^{225} (an α-emitting radioisotope) for potential treatment of advanced solid cancers and inflammatory diseases, including severe COVID-19

Radio-Diagnostic Cancer Imaging

- Radio-diagnostic imaging may determine cancer patients whose tumors demonstrate uPAR overexpression, which may help identify patients likely to respond to treatment
- Preclinical work nearly complete with aim to advance to human clinical studies

Thank you!

October 2021

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