



Targeted Therapy *Delivered*

Corporate Presentation | November 6, 2025

Nasdaq: LSTA

www.lisata.com



Forward-looking statements advisory

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A 3D molecular model of a protein complex, likely Lisata, is shown against a dark blue background. The model consists of a large, light blue, textured surface with numerous protrusions and indentations, and several smaller, purple, textured subunits attached to it. The overall appearance is that of a complex, multi-subunit protein structure.

Lisata at a Glance

Company Overview

Lisata Therapeutics (Nasdaq: LSTA)

OVERVIEW

Clinical stage pharmaceutical company developing innovative therapies for the treatment of cancer and other serious diseases.

MISSION

To rapidly develop and commercialize innovative treatments that improve outcomes for patients with cancer or other serious diseases.

Lisata Therapeutics (Nasdaq: LSTA): Key attributes



Seasoned management with successful international drug development experience and expertise



Proprietary field-leading technology with global IP protection extending beyond 2040



Multiple product and business milestones projected over the next 12 months



Platform technology validated by existing partnerships with potential for many others

Cash runway extending into 1Q 2027 with no debt

Seasoned leadership with proven history of drug approvals worldwide

David J. Mazzo, PhD

President and Chief Executive Officer, Member of the Board of Directors



With >40 years of experience, Dr. Mazzo is a global pharmaceutical executive noted for his strategic prowess and his vast experience developing and launching new products across all therapeutical areas. He recently was recognized as a 2024 PharmaVoice Top 100 Standout Leader.



Kristen K. Buck, MD

Executive Vice President of R&D and Chief Medical Officer



Dr. Buck is a board certified and licensed physician with >20 years of strategic global drug development, drug/device safety/epidemiology, FDA, and clinical practice experience.



Gregory Berkin

Chief Information Officer and Data Protection Officer



James Nisco

SVP of Finance and Treasury and Chief Accounting Officer



Tariq Imam

SVP of BD and Operations and General Counsel



John Menditto

VP of Investor Relations and Corporate Communications



Bill Sietsema, PhD

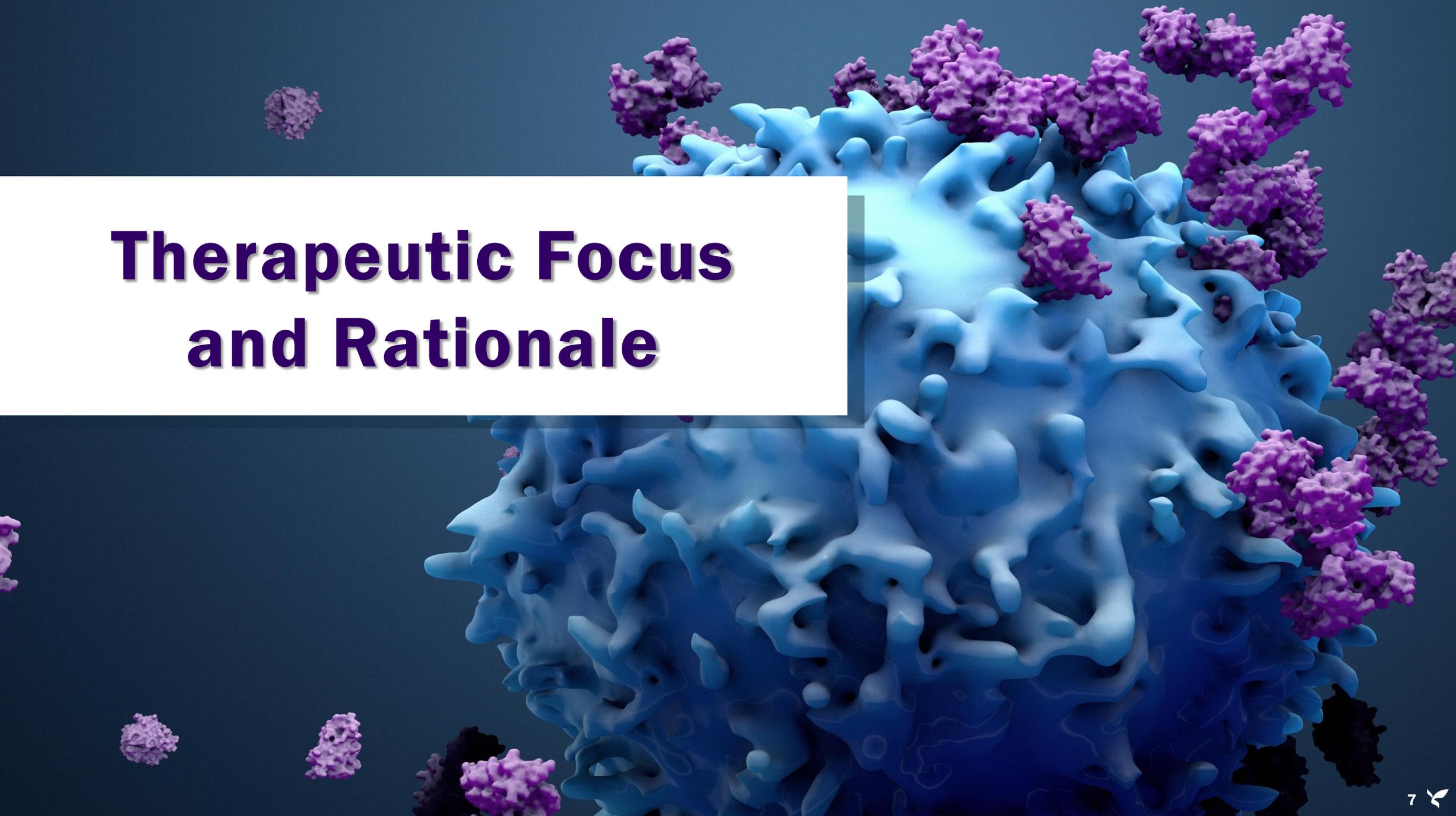
VP of Global Regulatory Affairs



Ryan Quick

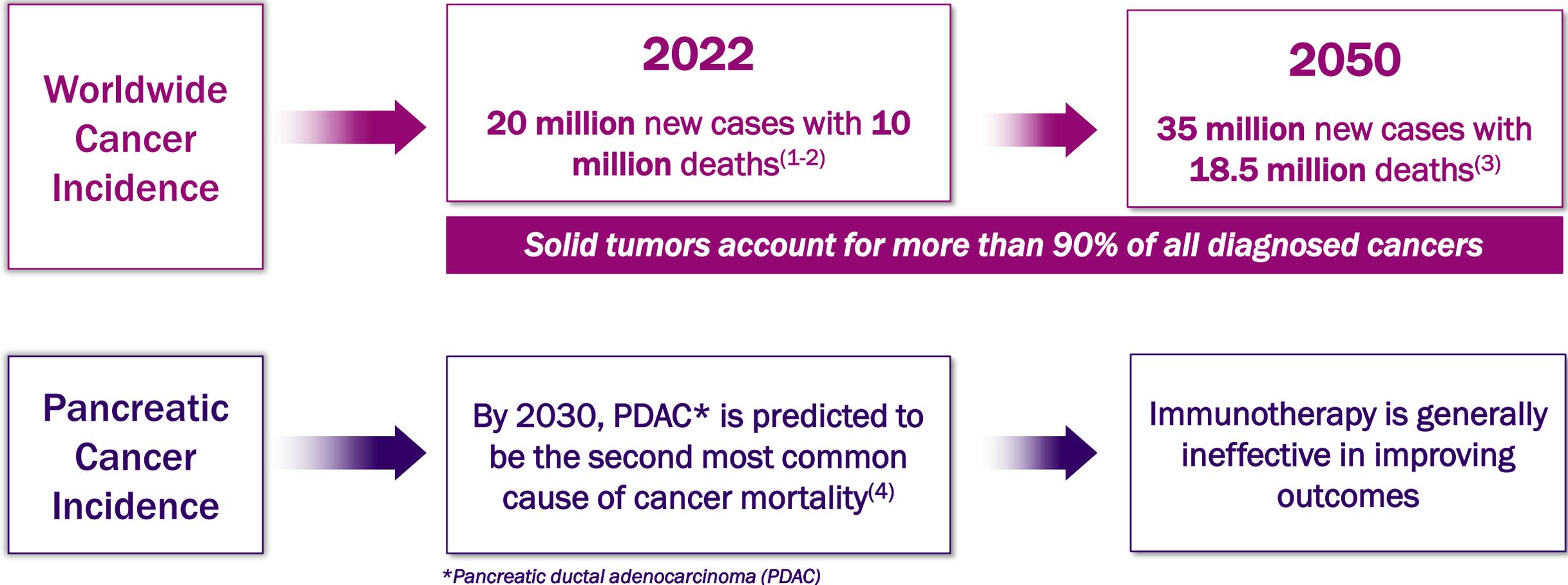
VP of Chemistry, Manufacturing and Controls



A 3D molecular model of a protein surface, rendered in blue and purple. The surface is highly textured and irregular, with many protrusions and indentations. The blue color is dominant, with purple clusters scattered across the surface. The background is a dark blue gradient.

Therapeutic Focus and Rationale

Improved solid tumor treatment remains a vital, growing global need



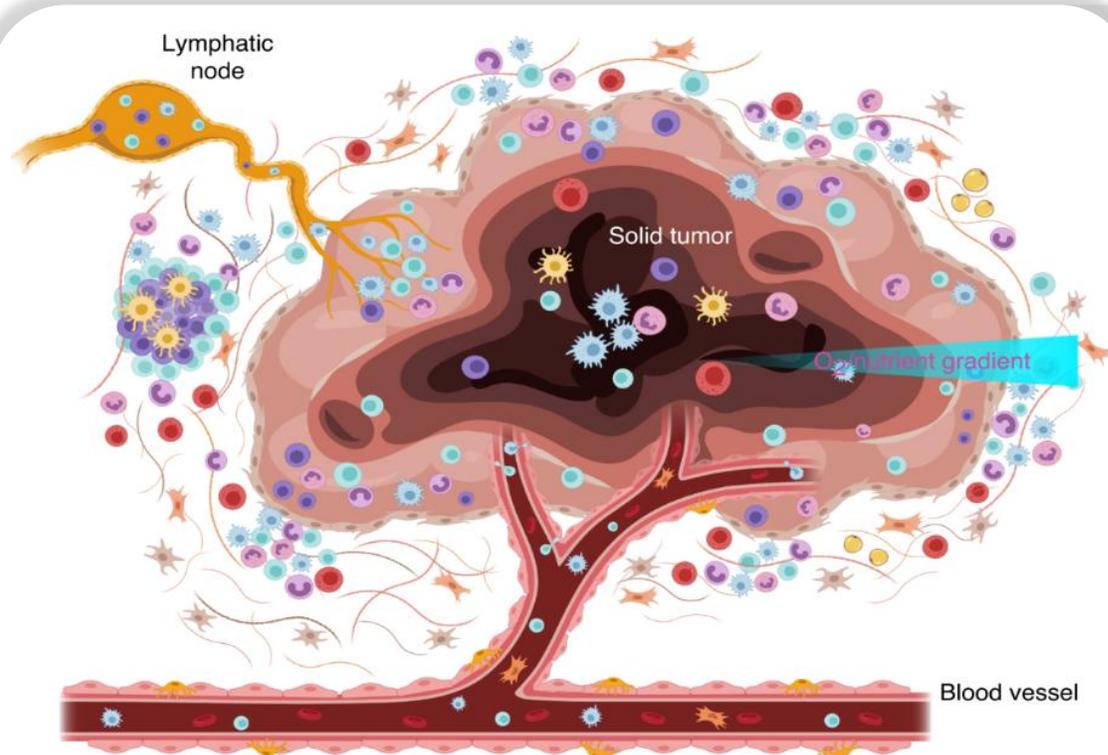
¹ https://gco.iarc.who.int/tomorrow/en/dataviz/tables?mode=population&years=2050&types=1&populations=903_904_905_908_909_935_900; data retrieved Feb 12, 2024.

² <https://seer.cancer.gov/statfacts/html/common.html>; data retrieved Nov 2, 2023.

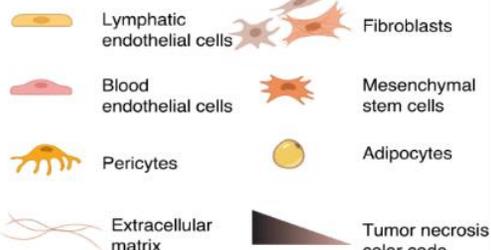
³ <https://www.who.int/news/item/01-02-2024-global-cancer-burden-growing-amidst-mounting-need-for-services>; data retrieved Oct 14, 2024.

⁴ Europe Is Facing a Pancreatic Cancer Emergency - Medscape - January 25, 2024.

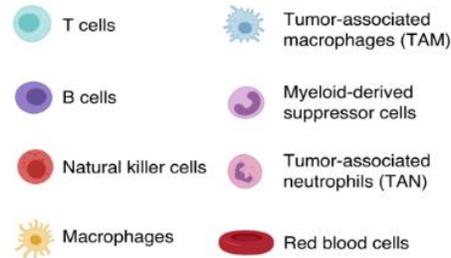
Current solid tumor treatments & patient outcomes are suboptimal



Legend: Stroma



Legend: Immune cells



Challenging tumor morphology and tumor microenvironment (TME) pose significant barriers to effective treatment and outcomes

Tumor stroma acts as a physical barrier to anti-cancer agents

An immunosuppressive TME contributes to tumor resistance and/or metastases

Prolonged or escalated dosing of non-targeted anti-cancer therapies generally leads to intolerable off-target side effects

Certepetide is designed to optimize solid tumor treatment

Certepetide: a proprietary internalizing RGD (iRGD) cyclic peptide adjuvant with tumor specific targeting & penetration activity and tumor microenvironment modifying properties*

- Converts tumor stroma from a barrier to a conduit for anti-cancer drugs
- Selectively reduces TME immunosuppressive T cells and recruits cytotoxic T cells⁽¹⁾
- Inhibits the metastatic cascade⁽²⁾
- Applicable with any modality of anti-cancer therapeutic
 - Via co-administration or molecular tethering
- Poised for Phase 3 in mPDAC**
 - In mid-stage clinical development in multiple solid tumors

*internalizing RGD: arginyl-glycyl-aspartic acid or iRGD

**mPDAC: metastatic pancreatic ductal adenocarcinoma

¹Sugahara, et al. Mol Cancer Ther; 14(1) January 2015; Hamilton, et al., J MolMed. April 2015; and Miyamura, et al., bioRxiv. May 2023.

²Yuan, D., Duda, D., et al. CCA Foundation Conf. 2024 Poster. *Enhancing the efficacy of standard therapy in intrahepatic cholangiocarcinoma using LSTA1, a novel tumor targeting and penetration agent.*

Certepetide possesses a strong Intellectual Property portfolio

- Eight families, comprising 25 granted patents (6 U.S.), 26 pending patents, and two families in PCT phase
- Orphan Drug Designations provides for 7 and 10 years of market exclusivity post-approval in the U.S. and EU, respectively
- Composition of matter patent through March 2040, with subsequent opportunity for patent term extension
- Claims cover composition of matter, method of use, and therapeutic combinations
- Pending claims cover methods of making certepetide (via peptide synthesis), specific combinations in the treatment of PDAC, and combinations with immunotherapies, specifically, durvalumab, resulting from the iLSTA study data
- Exclusive option to granted patent relating to the ability of certepetide altering the immune cell landscape, thus better sensitizing cancers to use of checkpoint inhibitors

A 3D molecular model of a protein surface, rendered in a light blue color. The surface is highly textured with various protrusions and indentations. Several clusters of smaller, purple-colored protein subunits are attached to the main surface, particularly on the right side and top. The background is a dark blue gradient.

Partnerships

Noteworthy existing relationships and potential for many more

Existing partnerships support certepetide's promise and broad applicability



R&D alliances contribute resources with minimal commercial interest in certepetide

- *Australasian Gastro-Intestinal Trials Group* - Clinical Trialists Consortium (Australia & New Zealand) and *WARPNINE* - Foundation (Australia)



Existing strategic partnerships

Catalent, Inc.

- Lisata granted Catalent a worldwide non-exclusive license to develop and commercialize antibody-drug conjugate (ADC) products containing certepetide and its analogs
- Catalent will evaluate certepetide as a SMARTag® payload with multiple ADCs targeting difficult-to-treat diseases
- Lisata is eligible to receive >\$10 million in tiered development milestone payments, plus revenue sharing on future sales and partnerships

GATC Health Corp.

- Lisata & GATC formed a strategic alliance to develop GATC's AI-derived drug candidates, including combinations with certepetide
- Lisata will receive an upfront payment and increasing asset equity upon development milestone achievement
- Lisata will have an option to license future AI-derived assets for a nominal fee

Kuva Labs

- Lisata granted Kuva exclusive worldwide rights to certepetide for use with Kuva's NanoMark technology for diagnostic tumor imaging
- Kuva assumes all development and commercialization responsibilities/costs
- Includes a \$1 million upfront fee and potential ~\$20 million in milestones plus royalties on sales

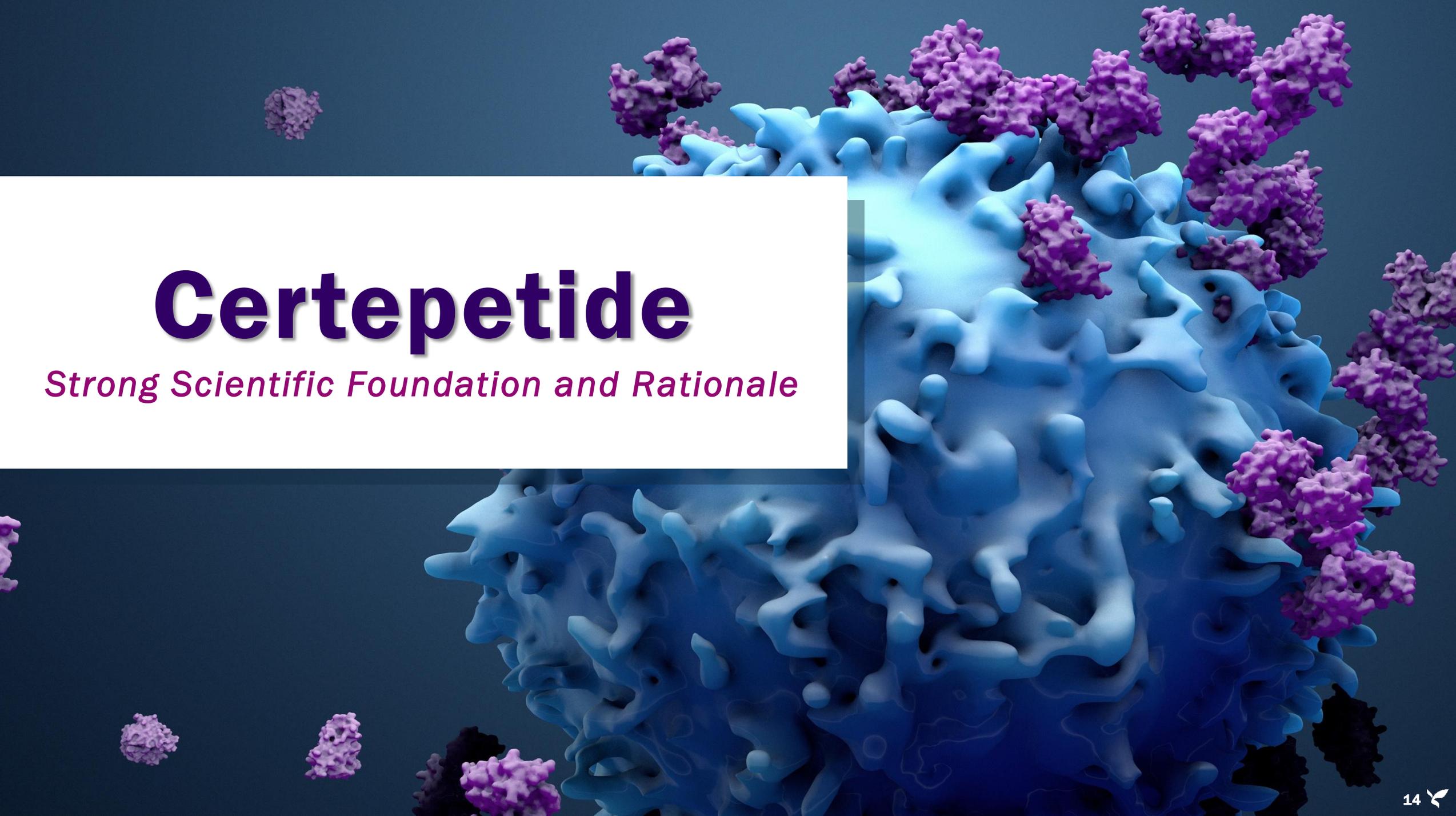
Qilu Pharmaceutical

- Lisata granted Qilu exclusive rights in China, Taiwan, Hong Kong and Macau
- Qilu assumes all development and commercialization responsibilities/costs in licensed territories
- Potential for additional \$221 million in milestones plus royalties on sales (\$15 million collected to date)



Additional partnership opportunities exist for many combinations with certepetide

- By indication, modality of co-administered drug(s), and/or geography

A 3D molecular model of a protein surface, rendered in light blue, with a ligand molecule bound to it, rendered in purple. The background is dark blue with several smaller, floating purple ligand molecules.

Certepetide

Strong Scientific Foundation and Rationale

Certepetide mechanism of action: Unique, multi-step approach

1 Integrin binding

Certepetide is a 9-amino acid cyclic iRGD peptide with high binding specificity and affinity for $\alpha\beta 3$ and/or $\alpha\beta 5$ integrins that are upregulated on target cells.

*Tumor cells and tumor vascular endothelial cells (components of the tumor stroma)

2 Proteolytic cleavage

Bound certepetide is proteolytically cleaved in the tumor microenvironment (TME) resulting in a C-end Rule (CendR) linear peptide fragment.

3 Neuropilin-1 binding

The CendR fragment binds with high affinity and specificity to neuropilin-1 (NRP-1), an adjacent receptor on the same or nearby cell, activating the CendR active transport pathway⁽¹⁾ and triggering tumor penetration.

4 Resulting tumor penetration

CendR pathway actuation triggers encapsulation of circulating co-administered anti-cancer drugs, ferrying them through the stroma into the tumor. Note: *Microvesicles can fuse to form channels across single cells.*⁽²⁻⁶⁾

[Not pictured] Certepetide depletes immunosuppressive T cells and enhances cytotoxic T cells in the TME, while inhibiting metastases.

Illustration is a simplified rendition of MOA

¹ Ding et al., *Nature Comm*, 2019.

² Ruoslahti E. *The Journal of clinical investigation*. 2017;127(5), 1622–1624.

³ Liu, X., et al. *J Clin Invest*. 2017;127(5):2007-2018.

⁴ De Mendoza, T. H., Suzuki, K., et al. *Nature Comm*, 2021;12, 1541.

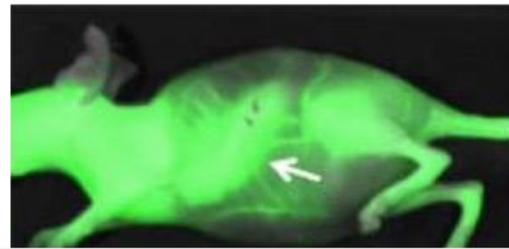
⁵ Wang, C., et al. *International Journal of Nanomedicine*, 2024;19, 12633–12652.

⁶ Saifi, M. A., et al. *Biochimica Et Biophysica Acta (BBA) - Reviews on Cancer*, 2023; 1878(3), 188895.

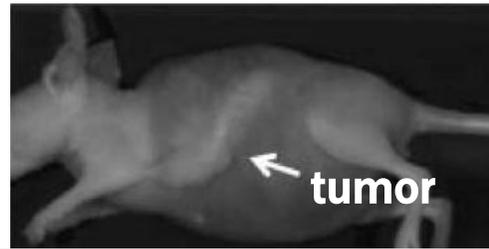
Certepetide/iRGD selectively promotes intratumoral penetration

Whole body imaging of mice with pancreatic ductal adenocarcinoma (arrow) dosed with Fluorescent Quantum Dots (FQDs) with and without certepetide^{(1),(2)}

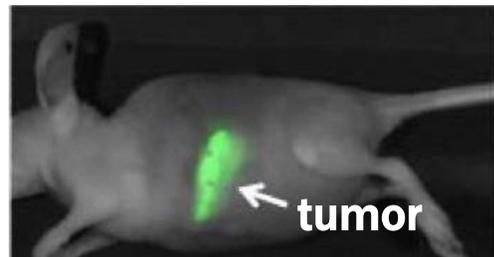
- Circulating FQDs result in whole body fluorescence
- Etching solution quenches fluorescence in circulation



FQDs

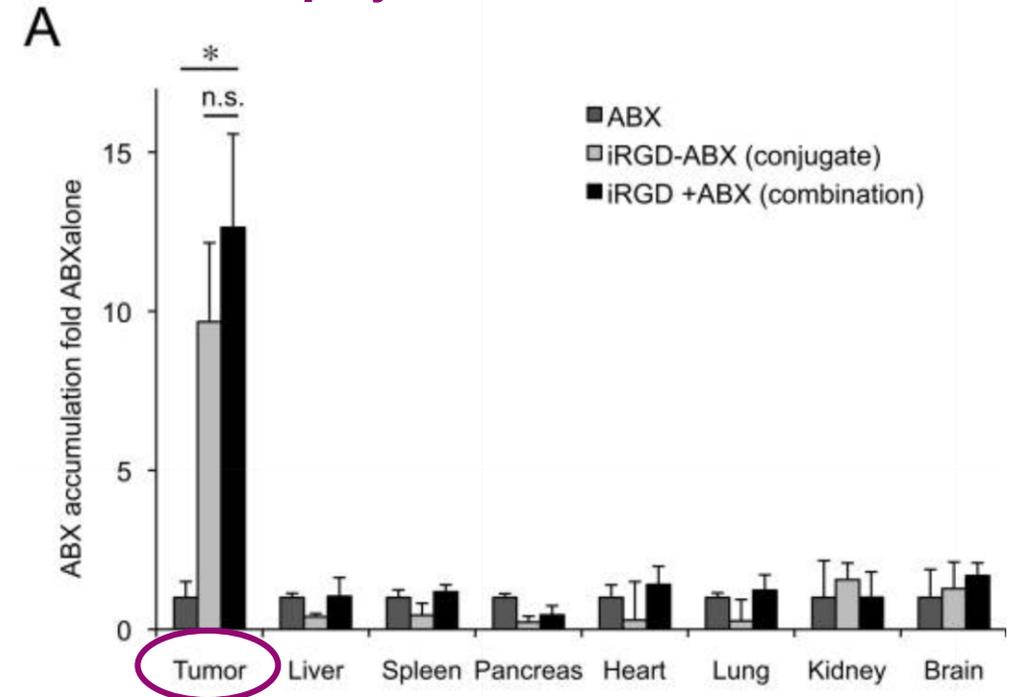


FQDs + Etching solution
tumor



Certepetide + FQDs
+ Etching solution
tumor

When co-administered with iRGD, nab-paclitaxel (Abraxane or ABX) is preferentially taken up by tumor tissue in mice⁽³⁾

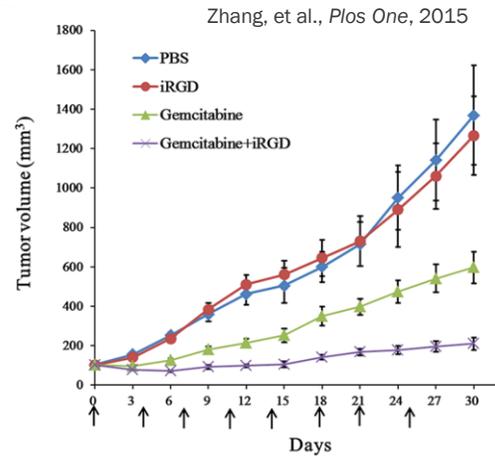


¹Braun et al., Nature Mater. 2014.
²Liu, Braun et al., Nature Comm. 2017.
³Sugahara et al 2010.

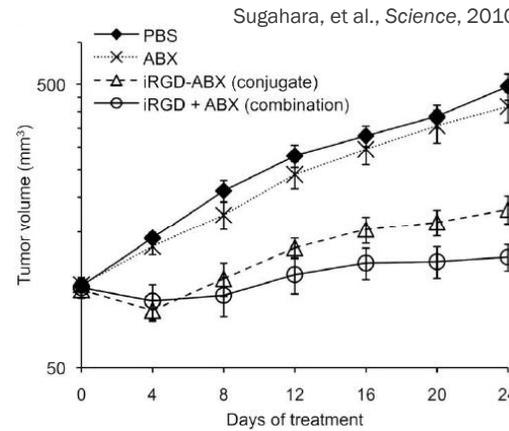
Broad applicability & activity of certepetide/iRGD consistently demonstrated

Sampling extensive scientific literature showing improved survival

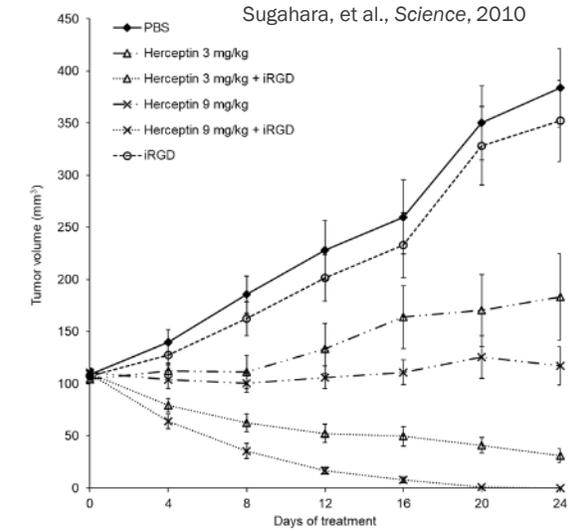
Lung cancer + gemcitabine



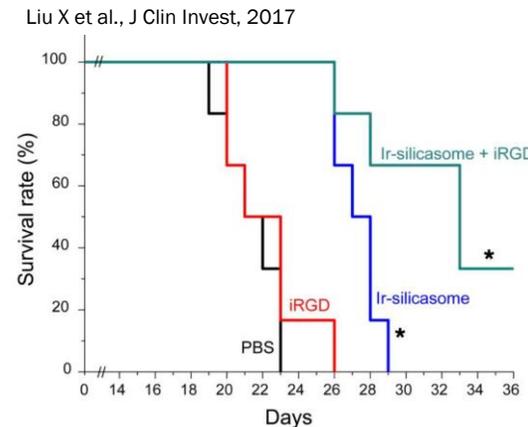
Breast cancer + nanoparticle nab-paclitaxel



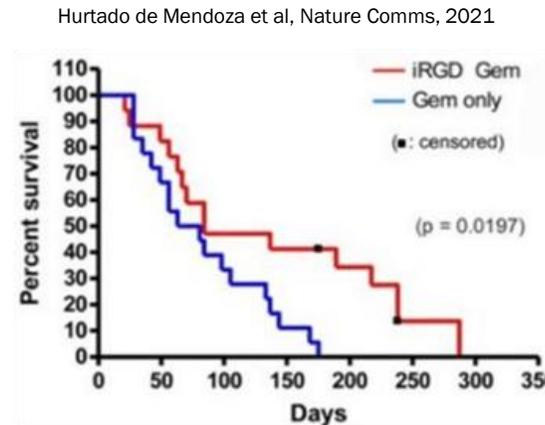
Breast cancer + Herceptin®



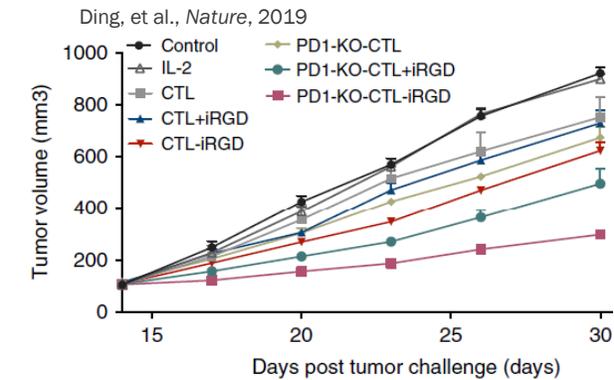
PDAC + irinotecan nanoparticles



PDAC + gemcitabine



GI cancer + adoptive cell therapy



Certepetide/iRGD consistently improves *immunotherapy* efficacy in multiple preclinical solid tumor models

Solid Tumor Types

- Intrahepatic cholangiocarcinoma
- Pancreatic adenocarcinoma
- Prostate cancer
- Breast cancer
- Non-Small Cell Lung Cancer
- Gastric cancer
- Hepatocellular carcinoma



Preclinical Observations

- Improved overall survival
- Reduced tumor size
- Reduced and/or inhibited metastases

AACR 2025 Abstracts:

- Kim, M., Sugahara, K., et al. *iRGD peptide therapy transforms immunosuppressive microenvironment to immune-favorable state in pancreatic ductal adenocarcinoma* (<https://www.abstractsonline.com/pp8/#!/20273/presentation/5422>).
- Miyamura, N., Sugahara, K., et al. *A cytotoxic peptide designed for tumor-targeted delivery of co-injected molecules* (<https://www.abstractsonline.com/pp8/#!/20273/presentation/3881>).
- Kuroda, Y., Sugahara, K., et al. *The iRGD tumor-penetrating peptide inhibits TGF-β activation mediated by an αβ5 integrin-rich tumor microenvironment in pancreatic cancer* (<https://www.abstractsonline.com/pp8/#!/20273/presentation/5404>).
- Choi, Y., Sugahara, K., et al. *Altered collagen morphology in pancreatic cancer treated with the iRGD tumor-penetrating peptide* (<https://www.abstractsonline.com/pp8/#!/20273/presentation/5419>).

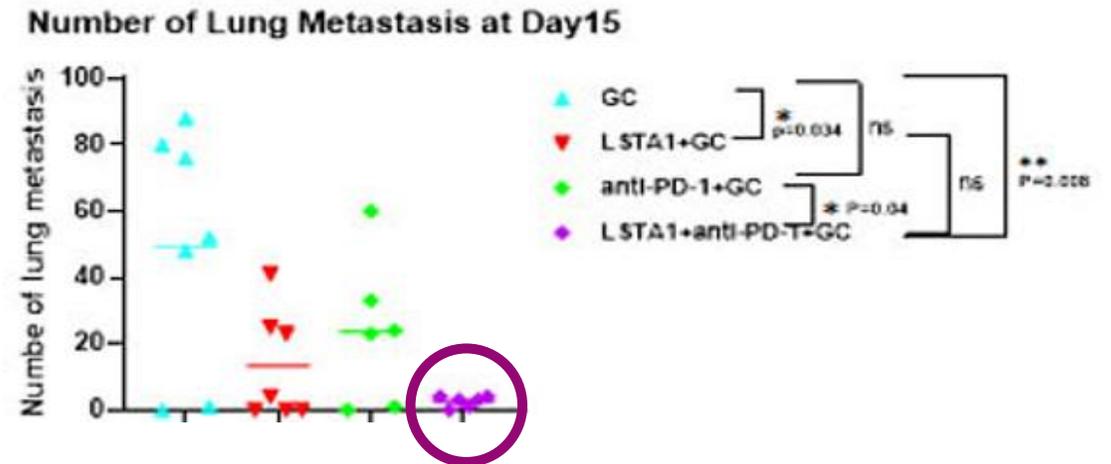
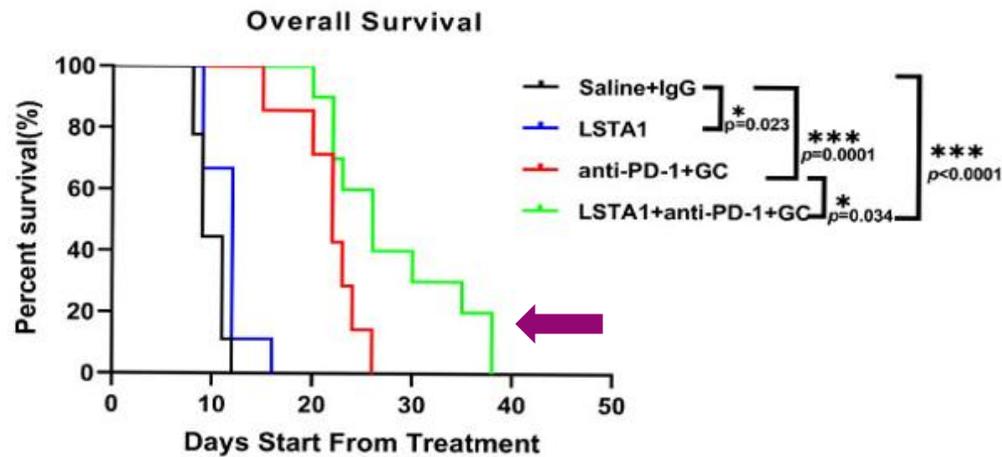
Sugahara, K., et al. bioRxiv 2023.05.24.542137; doi: <https://doi.org/10.1101/2023.05.24.542137>
 Yuan, D., Duda, D., et al. 2024 CCA Foundation Conference. Poster: *Enhancing the efficacy of standard therapy in intrahepatic cholangiocarcinoma using LSTA1, a novel tumor targeting and penetration agent.*

Sugahara, et al. 2015; Sugahara, et al. 2010
 Yang, et al. 2019a; Yang, et al. 2019b
 Zhang et al 2016b
 Dong, et al. 2023

Certepetide improves immunotherapy impact in cholangiocarcinoma

- Intrahepatic cholangiocarcinoma (ICC) has an immunosuppressive TME and a dense desmoplastic stroma with abnormal vasculature which together impede anti-cancer agent efficacy
- Lung metastases often lead to a significant decline in survival
- Human ICC SoC (gemcitabine/cisplatin/durvalumab) efficacy improved with certepetide in murine model

ICC mouse model



*Certepetide was formerly known as LSTA1

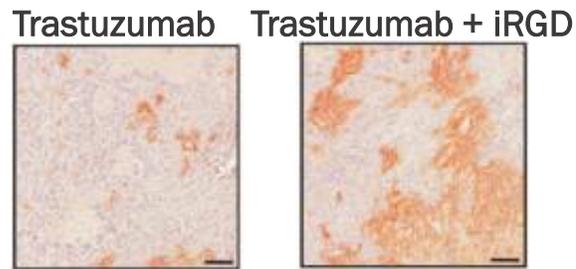
Certepetide combined with chemo- and immunotherapy improves survival, reduces morbidity and inhibits metastasis in cholangiocarcinoma mouse model

iRGD enhances selective tumor penetration of trastuzumab

Mouse model injected with human BT474 breast tumors

Trastuzumab is a monoclonal Ab that inhibits HER2

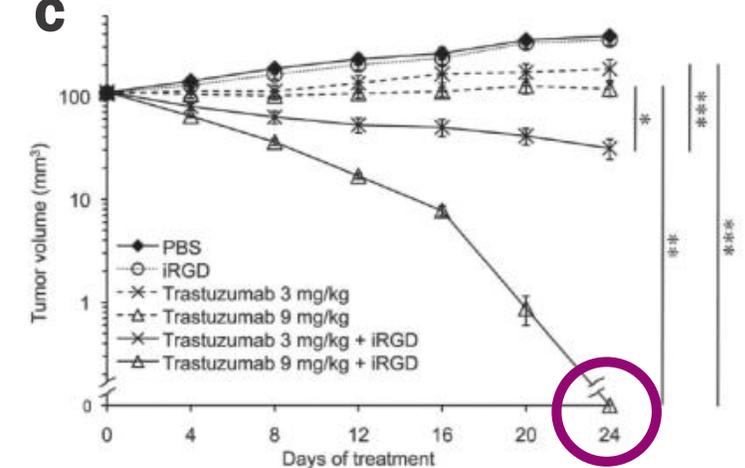
A



B

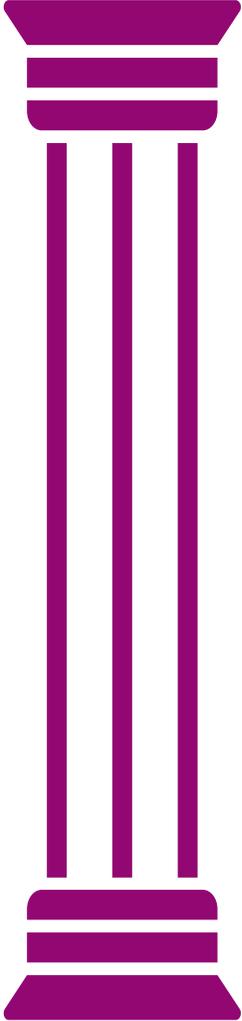


C



- Panel A shows greater staining for trastuzumab in breast cancer tissue with iRGD
- Panel B shows remarkable selectivity for tumor tissue with iRGD
- Panel C shows iRGD co-administered with trastuzumab leads to **tumor shrinkage**

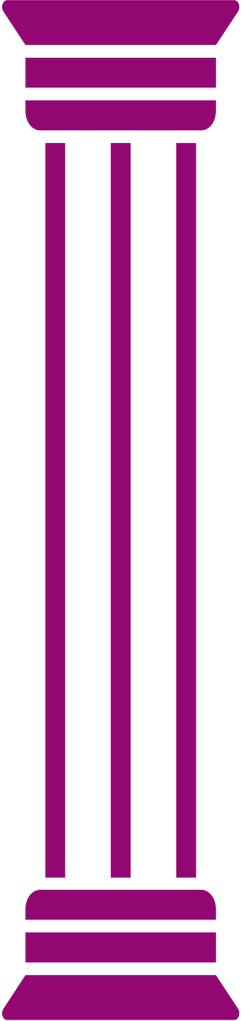
Certepetide development strategy: A two-pillar approach

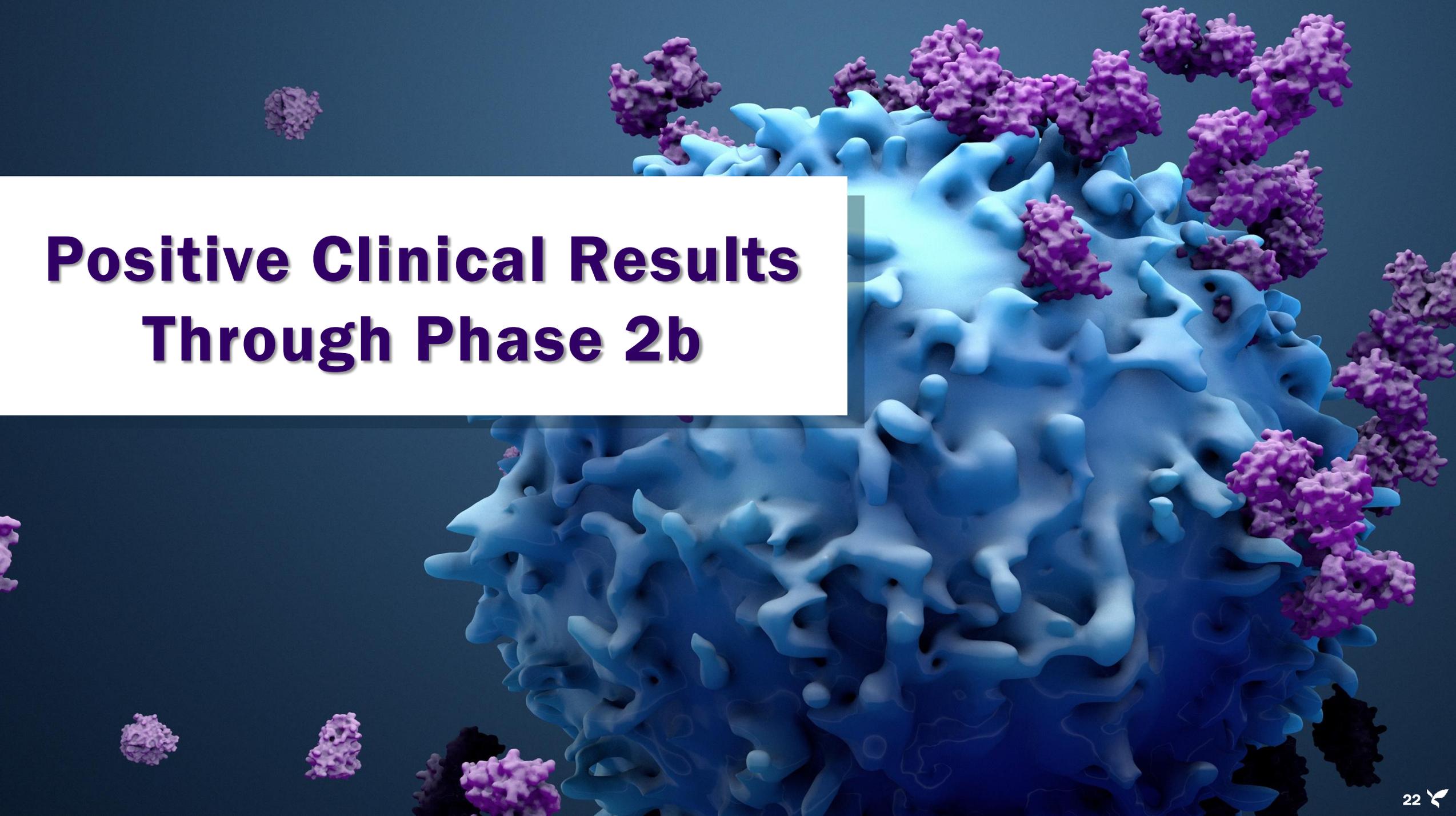


Pursue rapid global registration in mPDAC, initially combined with gemcitabine/nab-paclitaxel standard-of-care (SoC)

- ***Positive ASCEND Phase 2b preliminary results***
- ***End-of-Phase 2 FDA meeting completed***
 - ***Phase 3 study protocol and development plan agreed***
- ***Phase 3 preparations underway***

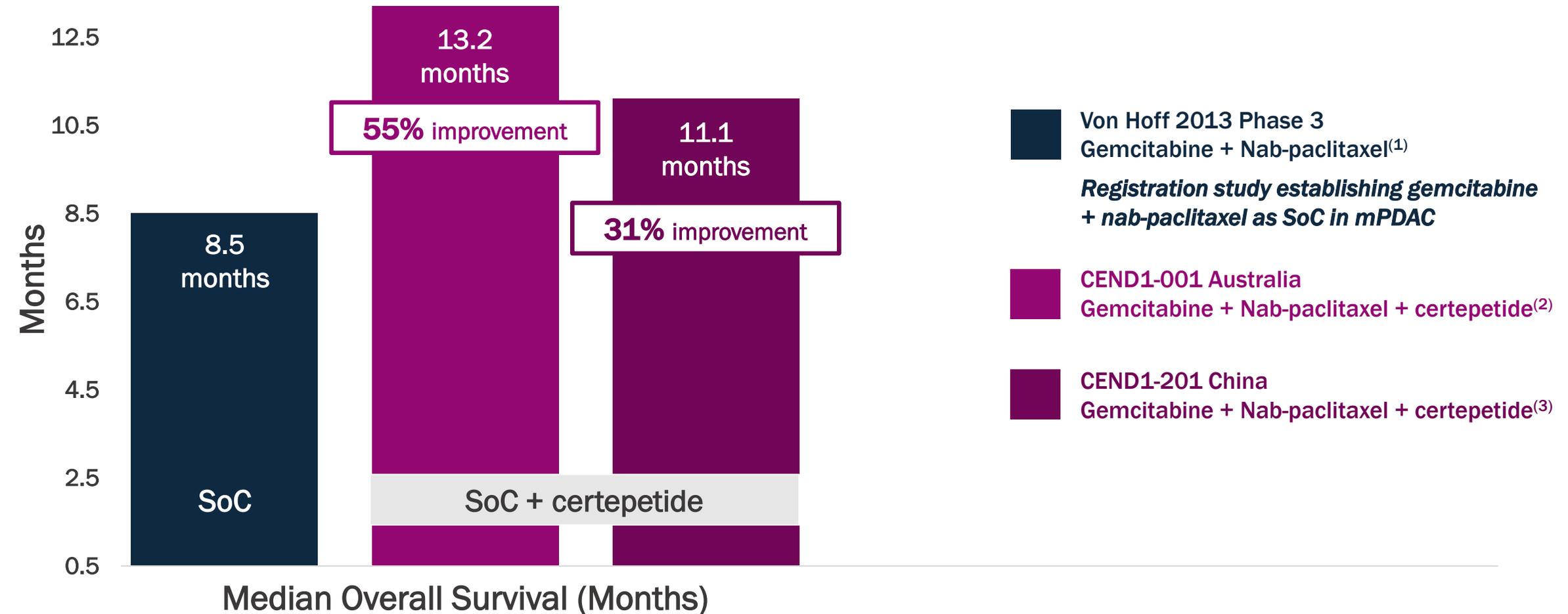
Demonstrate certepetide effectiveness when combined with a variety of other SoC regimens (e.g., chemotherapy, immunotherapy, etc.) in a variety of solid tumors

- ***Multiple Phase 2a studies underway***
- 

A 3D molecular model of a protein surface, rendered in blue and purple. The surface is highly textured and irregular, with many protrusions and indentations. The purple components are clustered in several areas, particularly on the right side and top. The background is a dark blue gradient.

Positive Clinical Results Through Phase 2b

Certepetide improved survival in mPDAC in two independent, multicenter Phase 1b/2a trials

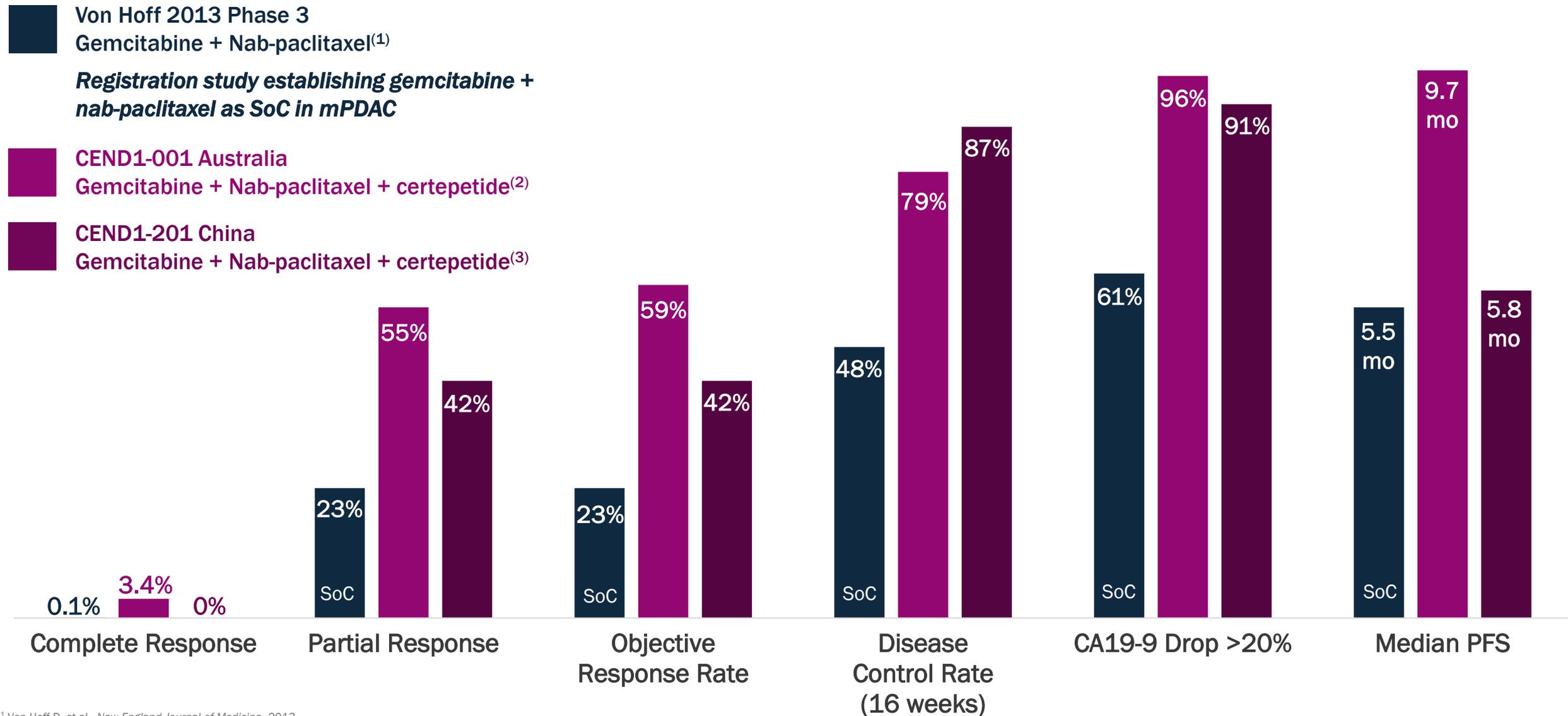


¹ Von Hoff D, et al., *New England Journal of Medicine*, 2013.

² Dean A, et al., *The Lancet Gastroenterology & Hepatology*, 2022

³ QILU Pharmaceutical

Certepetide demonstrated internal consistency in two Phase 1b/2a trials



¹ Von Hoff D, et al., *New England Journal of Medicine*, 2013.

² Dean A, et al., *The Lancet Gastroenterology & Hepatology*, 2022

³ QILU Pharmaceutical

ASCEND: Phase 2b study of certepetide in mPDAC

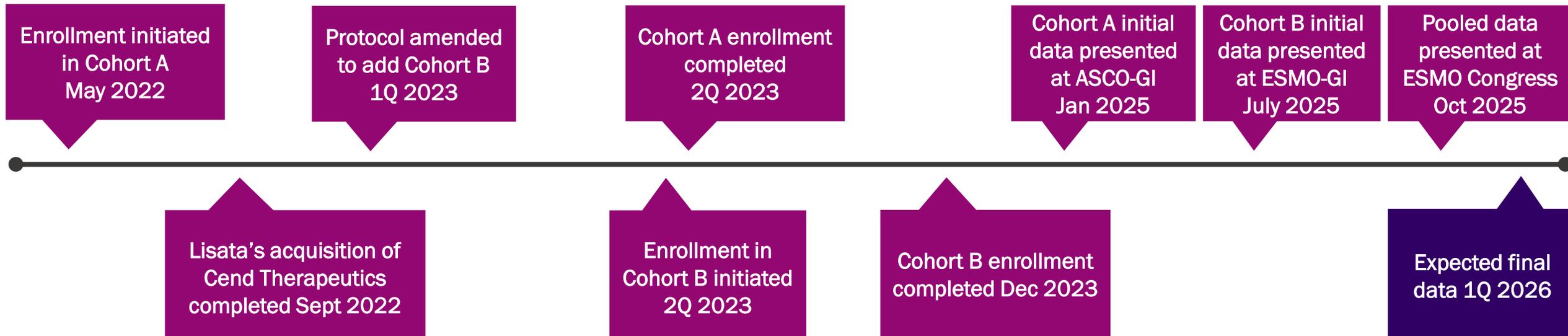
Investigator initiated trial *inherited* through acquisition of Cend Therapeutics

- **Sponsor:** Australasian Gastro-Intestinal Trials Group (AGITG) and NHMRC Clinical Trials Centre of University of Sydney (Australia)
 - Lisata-funded, data contractually sponsor-controlled
 - Restricts initial public announcement of results to scientific meetings or publications
- **'Academic design'** overlooked global regulatory standards supporting eventual approval
 - **Powered for 6-mos. PFS primary endpoint**
 - Not a standard regulatory endpoint
 - **Single cohort with one IV push of certepetide 3.2 mg/kg + SoC vs. SoC alone**

Lisata *amended* protocol to ensure trial data will support global registration strategy

- **Lisata** clinical trial data rights defined/expanded
- **'Product development design'** considers eventual regulatory review and approval
 - **Median overall survival (precedent registration endpoint)** added for both cohorts
 - **Second cohort (Cohort B) added with two IV pushes of certepetide 3.2 mg/kg administered 4 hours apart** to further evaluate pharmacodynamics of certepetide consistent with FDA Project Optimus

ASCEND: Phase 2b study chronology



ASCEND: Cohort A Progression-Free Survival data

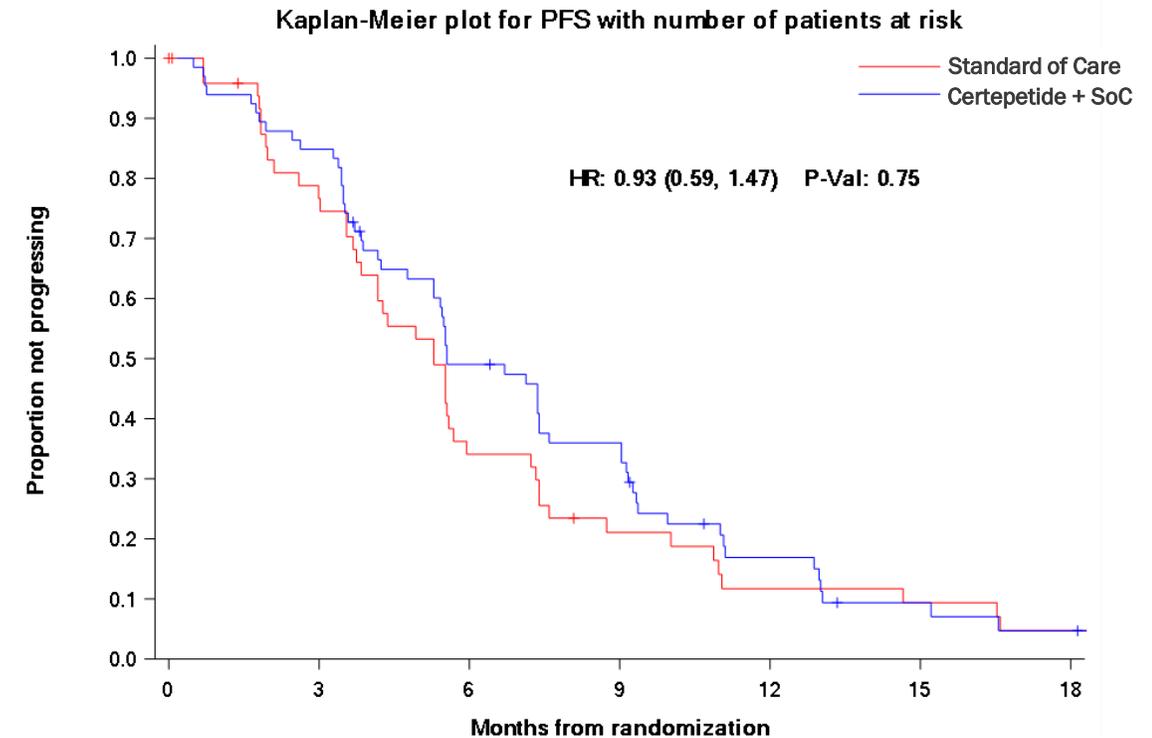
Data cut-off date: February 28, 2025

Cohort A

ONE IV PUSH OF CERTEPETIDE + SoC

- Cohort A *powered* for 6-month PFS
- No statistically significant improvement shown with certepetide
- *Data mature* - 91% (86 out of 95 patients with Progressive Disease or Death)

Cohort A: Progression-Free Survival (PFS) Data



Treatment arm	N	Median PFS in months (95% CI)
Certepetide	66	5.55 (5.29, 7.39)
Standard of Care*	50	5.29 (3.84, 5.68)

*Combined placebo participants from both cohorts

ASCEND: Cohort A Overall Survival data

Data cut-off date: February 28, 2025

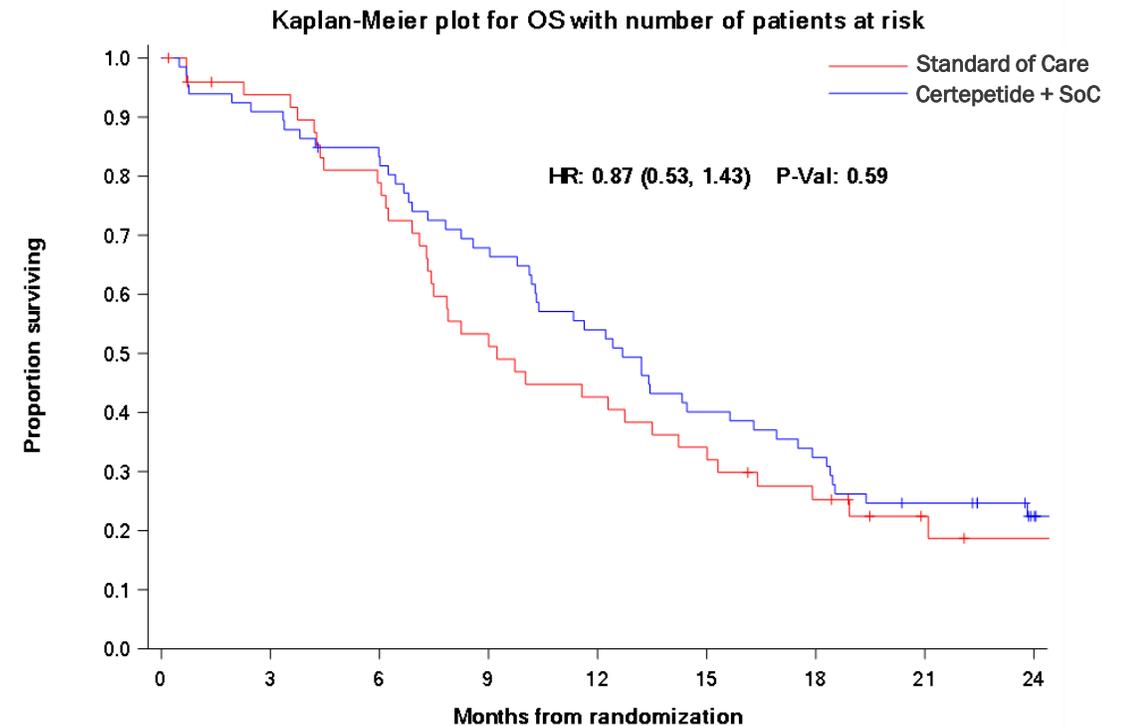
Cohort A

ONE IV PUSH OF CERTEPETIDE + SoC

- Cohort A **not powered** for OS
- *Data mature* - 76% (72 deaths out of 95)
- mOS numerically favors certepetide (12.68 vs. 9.23 months); separation occurs at 7 months similar to NAPOLI-3
- Cohort A ORR* data favors certepetide
 - Certepetide – 4 complete responses
 - Placebo – 0 complete responses

*ORR: Objective Response Rate

Cohort A: Overall Survival (OS) Data



Treatment arm	Participants	Median OS in months (95% CI)
Certepetide	66	12.68 (10.18, 16.30)
Standard of Care*	50	9.23 (7.33, 13.50)

*Combined placebo participants from both cohorts

ASCEND: Cohort B Progression-Free Survival data

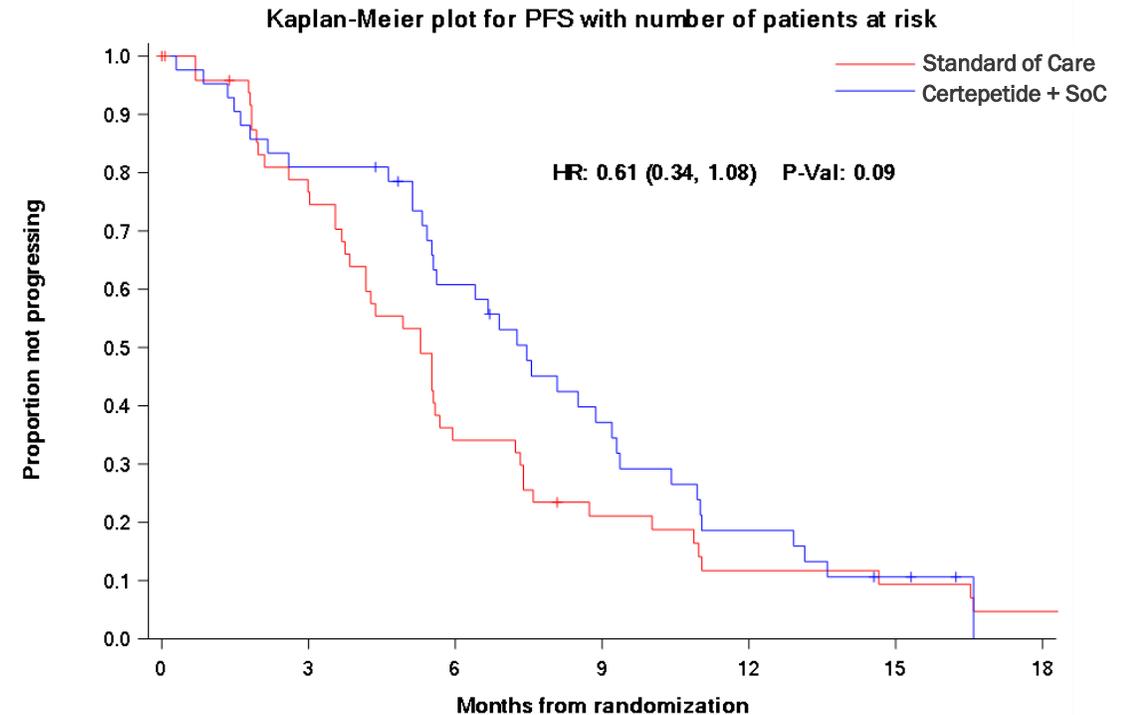
Data cut-off date: February 28, 2025

Cohort B

TWO IV PUSHES OF CERTEPETIDE 4 HOURS APART + SoC

- Cohort B *not powered* for PFS
- Data mature
- Despite not being powered, mPFS in Cohort B *nears statistical significance* favoring certepetide over placebo (7.46 vs 5.29 months) HR 0.61, $p=0.09$

Cohort B: Progression-Free Survival (PFS) Data



Treatment arm	N	Median PFS in months (95% CI)
Certepetide	42	7.46 (5.52, 9.20)
Standard of Care*	50	5.29 (3.84, 5.68)

*Combined placebo participants from both cohorts

ASCEND: Cohort B Overall Survival data

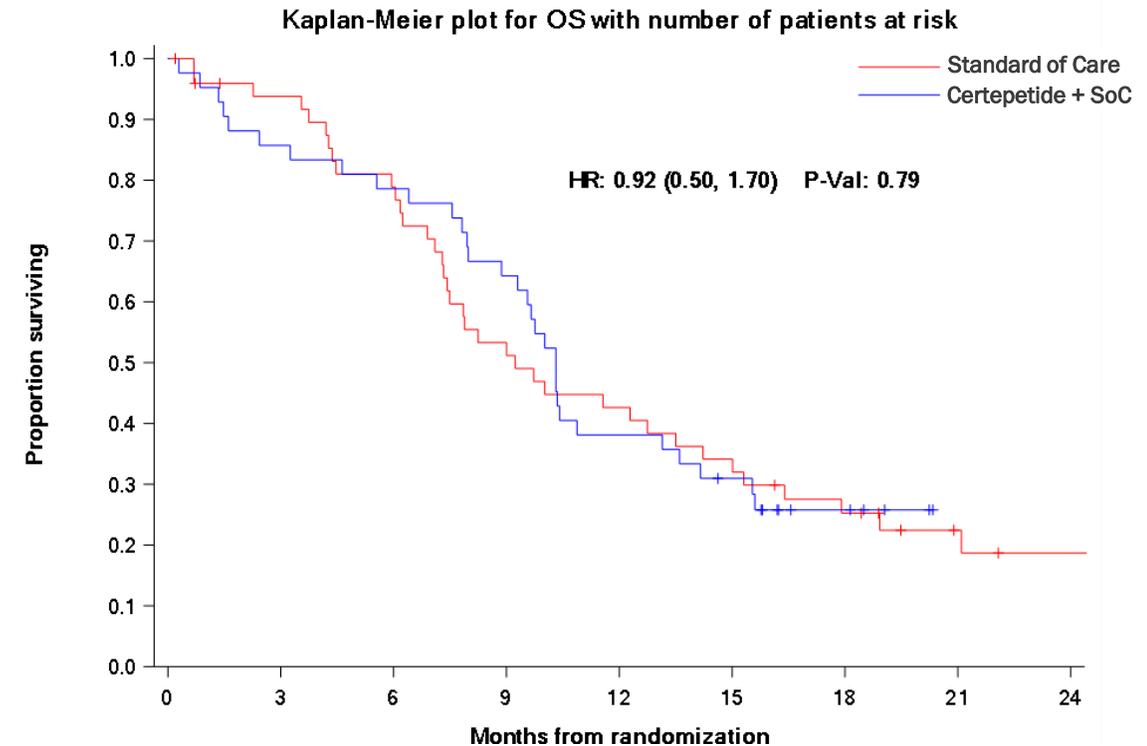
Data cut-off date: February 28, 2025

Cohort B

TWO IV PUSHES OF CERTEPETIDE 4 HOURS APART + SoC

- Cohort B **not powered** for OS
- *Data mature* - 71% (45 deaths out of 63)
- **mOS favors certepetide (10.32 vs. 9.23 months)**
 - Separation occurs at 7 months similar to NAPOLI-3 NALIRIFOX Phase 3 study data
- Cohort B ORR favors certepetide (see next slide)
 - (CR + PR) 45% vs 19% certepetide vs placebo; 1 CR certepetide, 0 CR placebo group

Cohort B: Overall Survival (OS) Data



Treatment arm	Participants	Median OS in months (95% CI)
Certepetide	42	10.32 (8.87, 13.14)
Standard of Care*	50	9.23 (7.33, 13.50)

*Combined placebo participants from both cohorts

Cohort B Time to Treatment Failure (TTF) and Duration of Treatment

Data cut-off date: December 30, 2024

Cohort B

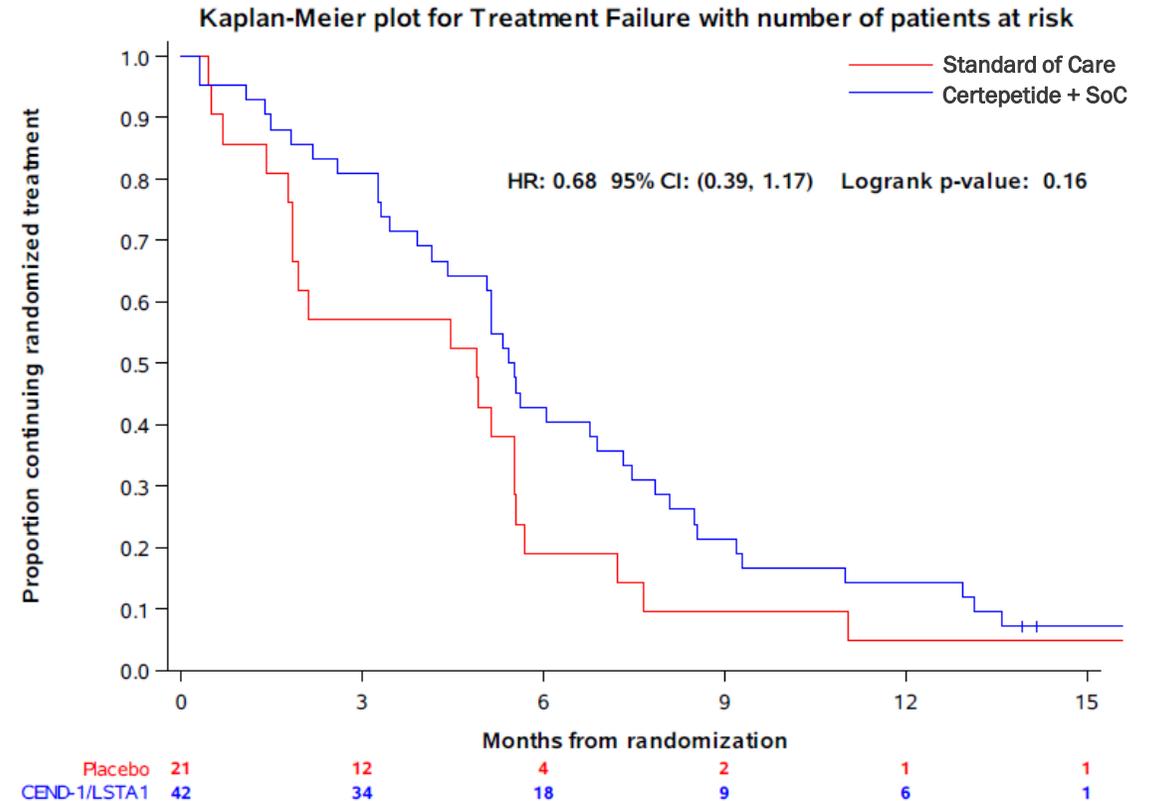
TWO IV PUSHES OF CERTEPETIDE 4 HOURS APART + SoC

- TTF and Treatment duration favor certepetide

Treatment arm	Treatment Failures	Median TTF months (95% CI)
Certepetide	40/42	5.47 (4.47, 6.90)
Standard of Care	20/21	4.90 (1.90, 5.52)

Treatment arm	Average Treatment Duration months (95% CI)
Certepetide	5.00 (3.77, 6.65)
Standard of Care	3.32 (2.09, 4.96)

Cohort B: Time To Treatment Failure and Treatment Duration



ASCEND: Most Common Adverse Events (All Grades)

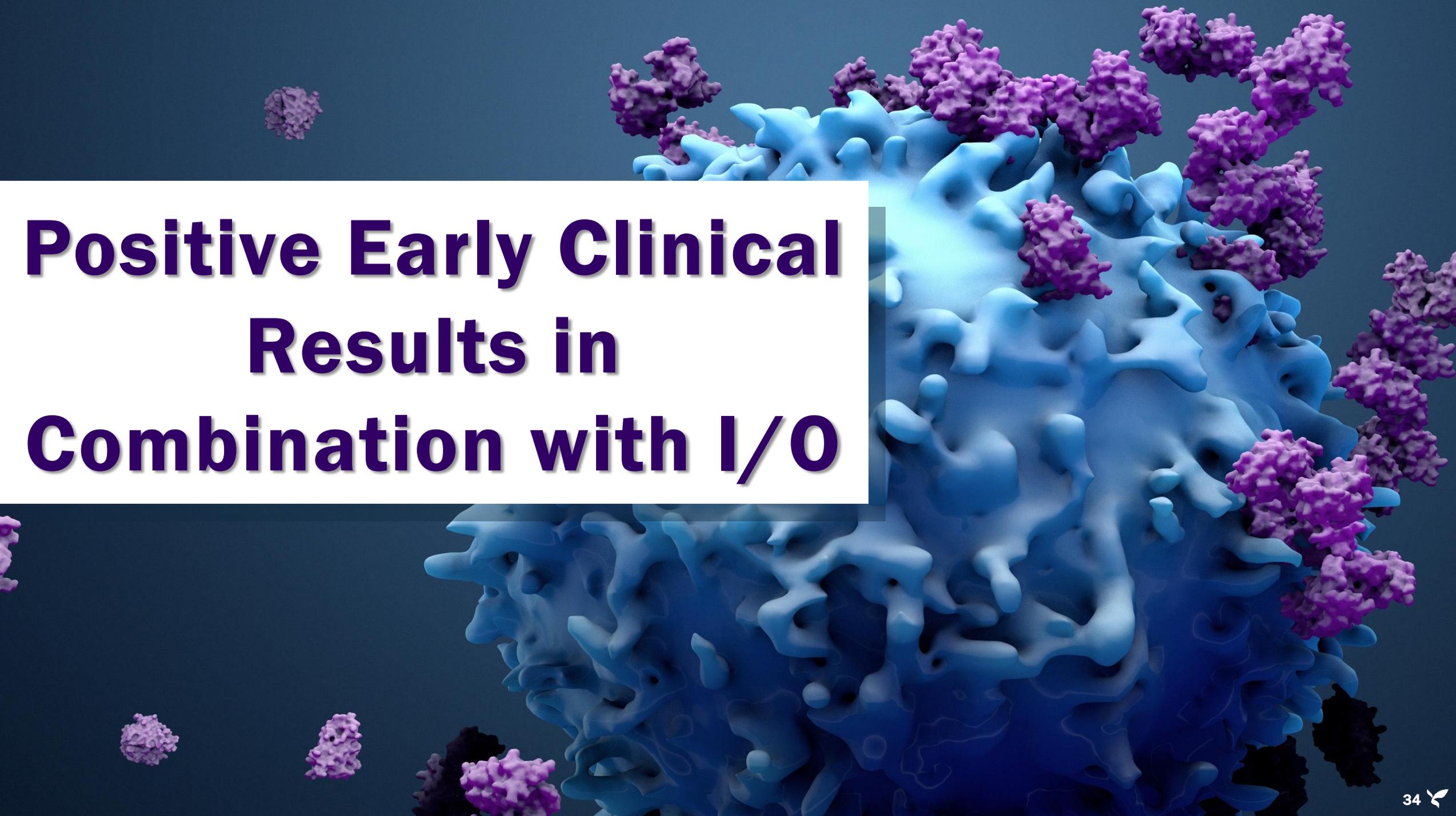
Adverse Event (AE)	Pooled Standard of Care n=49	Cohort A CERT n=65	Cohort B CERT n=42
Fatigue	29 (59.18%)	48 (73.85%)	34 (80.95%)
Peripheral sensory neuropathy	22 (44.90%)	35 (53.85%)	24 (57.14%)
Neutrophil count decreased	22 (44.90%)	23 (35.38%)	21 (50.00%)
Nausea	21 (42.86%)	35 (53.85%)	26 (61.90%)
Anemia	21 (42.86%)	30 (46.15%)	24 (57.14%)
Diarrhea	20 (40.82%)	25 (38.46%)	21 (50.00%)
Vomiting	18 (36.73%)	10 (15.38%)	10 (23.81%)
Constipation	17 (34.69%)	29 (44.62%)	21 (50.00%)
Alopecia	17 (34.69%)	30 (46.15%)	18 (42.86%)
Fever	15 (30.61%)	29 (44.62%)	11 (26.19%)
Edema limbs	15 (30.61%)	20 (30.77%)	16 (38.10%)
Platelet count decreased	14 (28.57%)	25 (38.46%)	21 (50.00%)
Abdominal pain	14 (28.57%)	20 (30.77%)	11 (26.19%)
ALT increased	13 (26.53%)	20 (30.77%)	14 (33.33%)
Rash maculo-papular	11 (22.45%)	18 (27.69%)	14 (33.33%)

**Top 15 AEs, greater than 30% in any column*

Certepetide improves clinical outcomes in mPDAC with benign safety profile

Certepetide Clinical Data Summary to Date

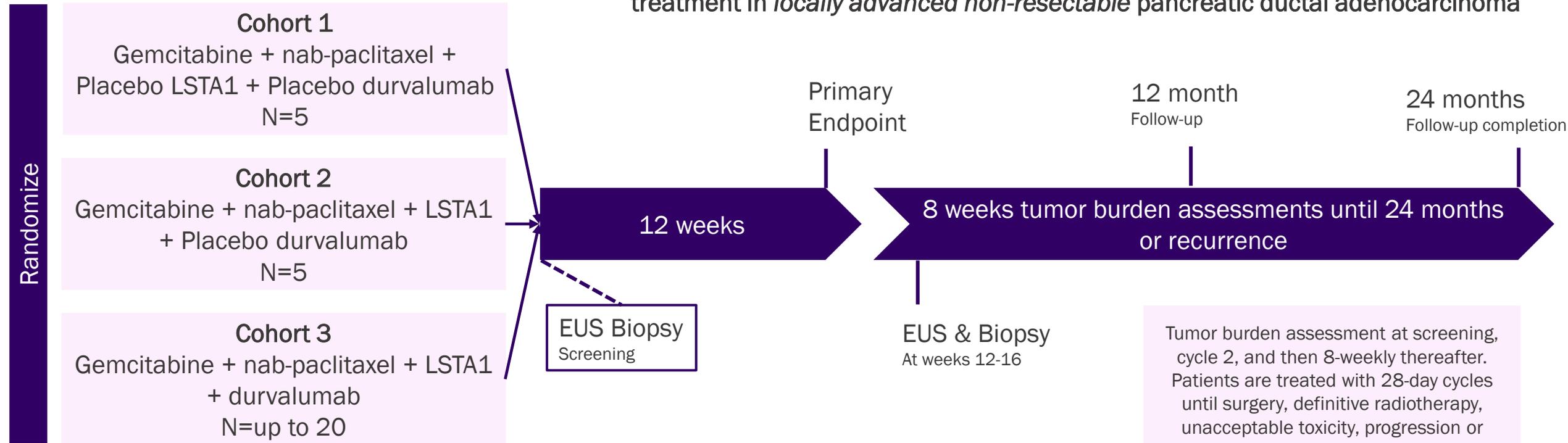
- Two Phase 1b/2a clinical trials (CEND1-001 in Australia and CEND1-201 in China) demonstrate that **certepetide plus SoC chemotherapy improves overall survival in metastatic PDAC akin to the recently FDA approved NALIRIFOX triplet therapy**
- Certepetide is well tolerated with cumulative adverse events reflecting companion therapy
- mOS in Cohort A numerically favored certepetide as did ORR (4 CRs vs 0)
- mPFS in Cohort B nears statistical significance favoring certepetide over placebo (7.46 vs 5.29 months) HR 0.61, p=0.09
- Cohort B mOS favored certepetide (10.32 vs 9.23 months) corroborating clinical benefit
- Cohort B ORR favored certepetide
 - Excluding unknown/early withdrawal/death, ORR *statistically significant* favoring certepetide
 - 50.0% certepetide treated patients had complete or partial response vs 21.1% placebo
 - 1 Complete Response in the certepetide group compared to zero in the placebo group
- Certepetide treated subjects stayed on treatment longer (5.00 vs 3.22 months)

A 3D molecular model of a protein surface, rendered in blue and purple. The surface is highly textured and irregular, with many protrusions and indentations. The blue color is dominant, with purple clusters scattered across the surface. The background is a dark blue gradient.

Positive Early Clinical Results in Combination with I/O

iLSTA: Phase 1b/2a trial in locally advanced PDAC with chemo & IO

Phase 1b/2a proof-of-concept safety and early efficacy study of LSTA1 in combination with durvalumab, gemcitabine and nab-paclitaxel, as first-line treatment in *locally advanced non-resectable pancreatic ductal adenocarcinoma*



gemcitabine 1000mg/m² : Days 1, 8, 15 in 28-day cycles
 nab-paclitaxel 125mg/m²: Days 1, 8, 15 in 28-day cycles
 durvalumab 750mg: Days 1 and 15 in 28-day cycles
 certepetide 3.2 mg/kg/ Placebo: Days 1, 2, 8, 15, 16 in 28-day cycles

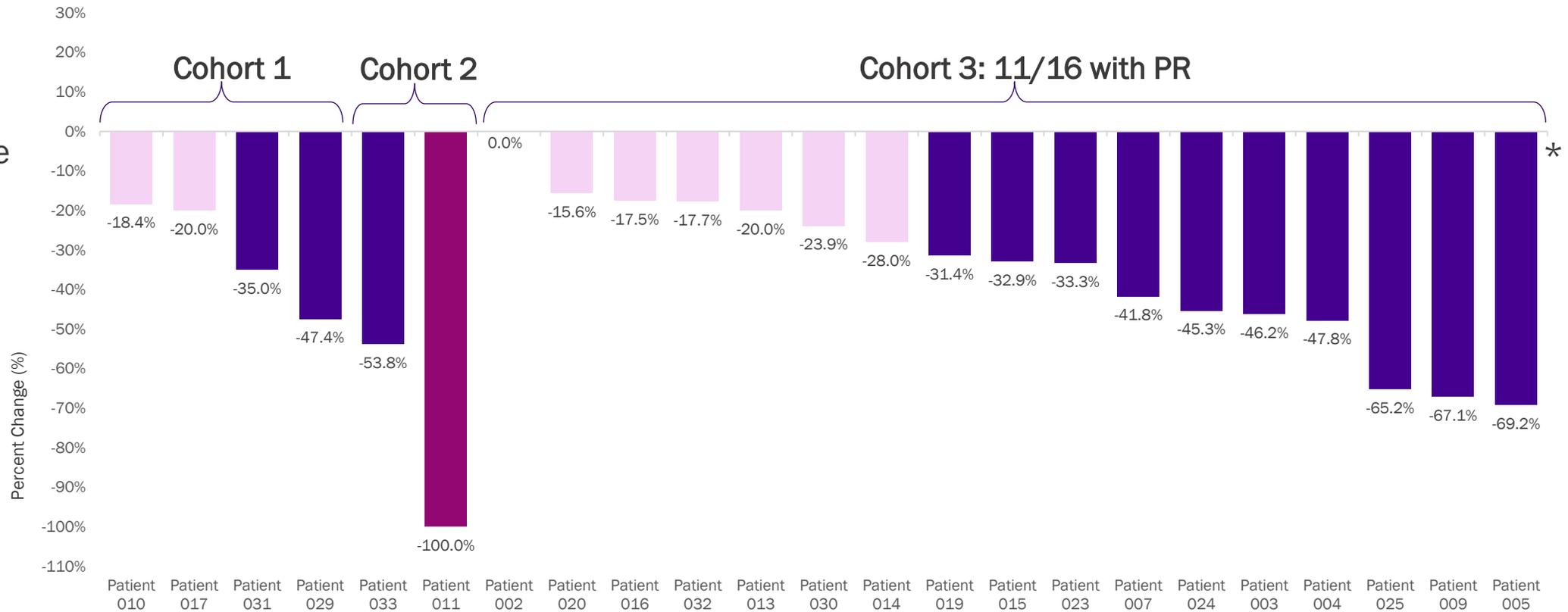
- **Sponsor:** WARPNINE, Inc. - funding trial
- **Timing:** Final 6-month PFS/OS data expected 1Q 2026

Preliminary Efficacy as of May 2025 – Best Overall Response Rate

Cohort 3: Overall Response Rate 69%
Disease Control Rate 100%

Key:

- Stable disease
- Partial response
- Complete response



*N=20 patients treated: N=1 patient (032) without baseline measurement

Remarkable evidence of certepetide activity in other solid tumors

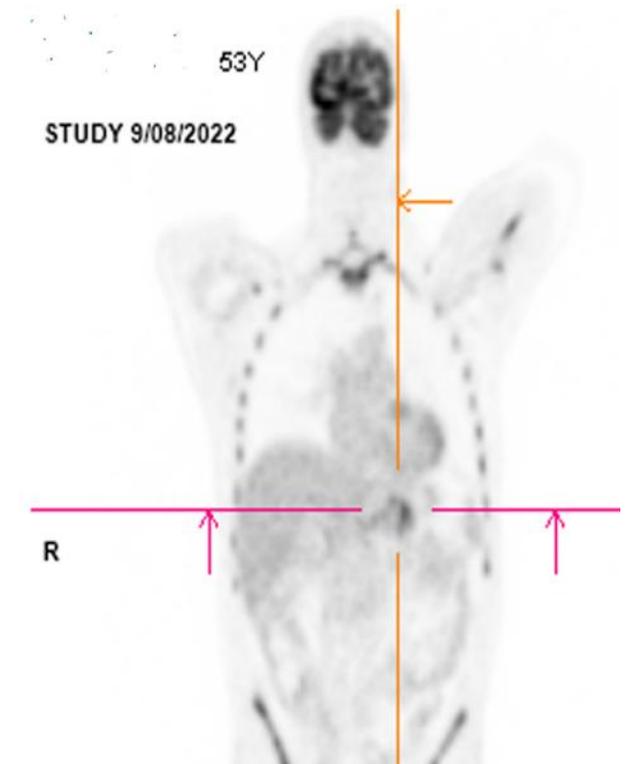
Certepetide potentiated a complete response in metastatic gastroesophageal adenocarcinoma (mGEAC)

- 53-year-old male with mGEAC with significant (> 5cm) nodal metastases (June 2022)
- SoC combination chemotherapy (FOLFIRINOX) and radiotherapy, with immunotherapy (pembrolizumab) later added, resulting in partial response
- Certepetide added to above regimen at cycle 7 and exploratory laparoscopy after cycle 18 (September 2022) showed **no discernable disease**
- **37+ months with sustained complete response**

FDG-PET* scan June 2022



FDG-PET scan Sept. 2022



Reduction in FDG activity demonstrated⁽¹⁾

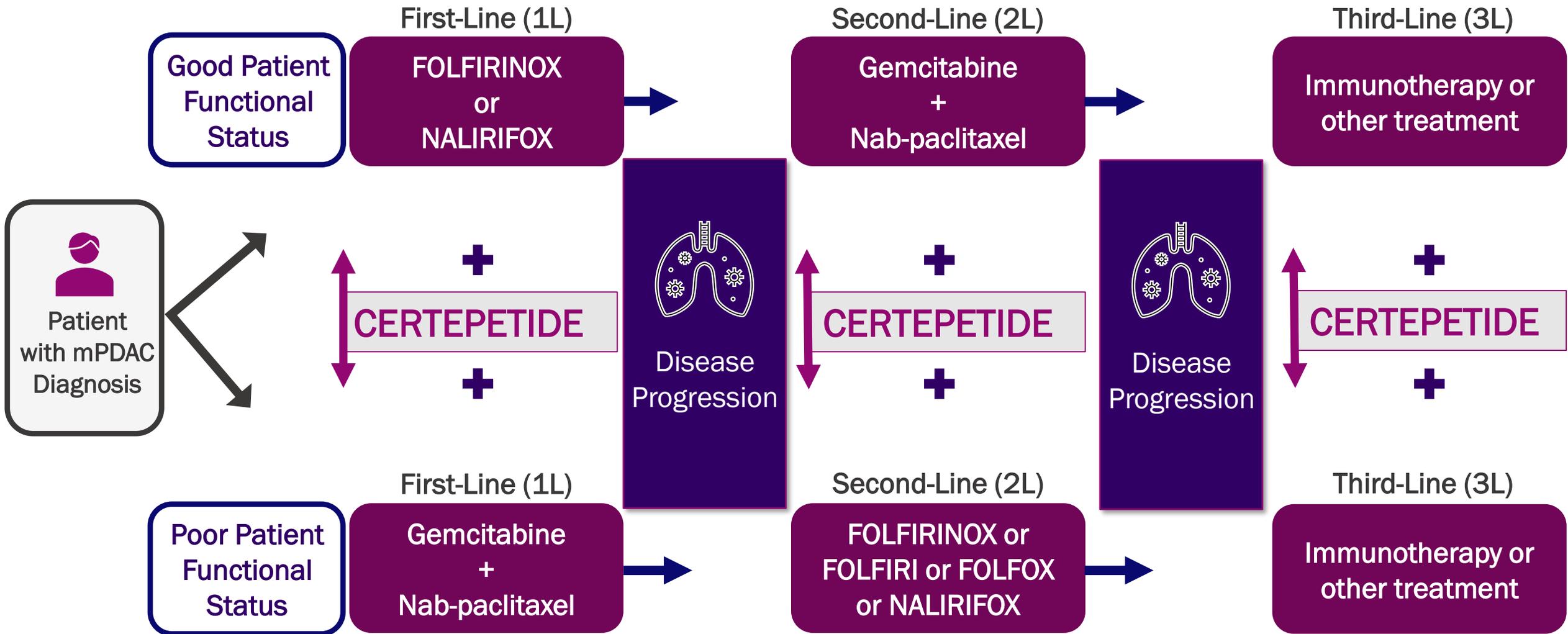
*Fluorodeoxyglucose (FDG)-positron emission tomography (PET)

¹ Buck, K.K, Dean, A., McSweeney, T. LSTA1 Potentiates Complete Response in Metastatic Gastroesophageal Adenocarcinoma. Oncol Cancer Case Rep. 2023, 9(6), 001-003

A 3D molecular model of a protein-ligand complex. The protein is shown as a light blue surface with a complex, irregular shape. Several ligands are bound to the protein, shown as purple and pink clusters. The background is a dark blue gradient.

Attractive Commercial Opportunity

Certepetide can be used throughout the mPDAC treatment paradigm



Certepetide's broad value proposition beyond mPDAC

Breadth of Applicability

Oncologic applications:

- *Locally advanced* PDAC - a population recognized as non-responsive to checkpoint inhibition - Improved clinical outcomes demonstrated
- **Metastatic gastroesophageal cancer** - a sustained complete response shown
- Other tumor types (**cholangiocarcinoma, GBM, CRC, appendiceal**) – clinical tolerance demonstrated
- Preclinical study ongoing in combination with an oncolytic virus + checkpoint inhibitor in **melanoma**

Non-oncologic applications:

- Cancer diagnostics
- Black Lung Disease

Certepetide's Commercial Prospects

- Well-characterized, de-risked, in later stage development
- Capital efficient, rational & broad clinical development plan
- Efficacy agnostic to co-administered treatment
 - Combination therapy complementary not competitive with existing and/or emerging anti-cancer agents
Existing commercial partnerships
- Additional commercial partnership opportunities exist
 - By region
 - By combination product
 - By indication

Certepetide special regulatory designations and benefits

FDA Fast Track Designation

- **Pancreatic cancer (FDA)**
- Eligible for *Accelerated Approval*, *Priority Review* and *Rolling Review*
- Provides for program-specific guidance from and frequent communication with FDA

FDA Rare Pediatric Disease Designation

- **Osteosarcoma (FDA)**
- Eligible for *Priority Review Voucher* upon approval; redeemable for a priority review for any subsequent marketing application, or may be sold or transferred
- Vouchers have sold recently for \$75-\$100 million and, historically, for up to \$350 million

Orphan Drug Designations

- **Pancreatic cancer (FDA & EMA)**
- **Malignant glioma (FDA)**
- **Osteosarcoma (FDA)**
- **Cholangiocarcinoma (FDA)**
- Eligible for tax credits, marketing exclusivity, fee waivers and development grants
- Provides for specialized regulatory assistance from FDA's Office of Orphan Products Development

Poised for Global Phase 3 Initiation

Requisite clinical development steps completed in preparation for Phase 3 trial



Full NDA-ready preclinical toxicology package



Phase 1 dose ranging study in 1L mPDAC

- No DLTs observed; safety profile consistent with co-administered SoC
- Certepetide improved all efficacy endpoints compared to SoC



Second independent Phase 1 study in 1L mPDAC in different geography

- Improvement in mOS effect corroborated



FDA end-of-Phase 1 meeting completed: agreement on tox package, comparator, endpoints, and patient population for NDA



Large Phase 2b (ASCEND) study in 1L mPDAC completed

- Effect size for Phase 3 estimated



FDA end-of-Phase 2 meeting held; agreement reached on Phase 3 program and development plan



Clinical operations and CMC readiness for Phase 3 underway

mPDAC Phase 3 study design agreed with FDA

- Global Phase 3, open-label, randomized clinical trial evaluating the efficacy and safety of certepetide in combination with standard of care (gemcitabine and nab-paclitaxel) vs. standard of care alone in patients with 1L mPDAC
- N=657 patients (+/- 50 depending on event rate)
 - Primary endpoint: Overall Survival
 - 90% Power, HR of 0.75
 - 18 months accrual (assuming 0.2 patients/site/month), 16 months observation period
 - 183 clinical sites in ~15 countries
- Open-label study acceptance precedent with global health authorities (e.g., NAPOLI-3)
- End-of-Phase 2 FDA meeting held May 21, 2025 – FDA agreement with study key elements
- FDA amenable to addition of multiple dosing arms (e.g., continuous infusion)

A 3D molecular model of a protein surface, rendered in a light blue color. The surface is highly textured and irregular. Numerous purple, spherical clusters of varying sizes are attached to the surface, representing SMARTag conjugates. The background is a dark blue gradient.

Catalent Preclinical Data

SMARTag[®] Enhanced Conjugates

SMARTag® Enhanced Conjugates Feature Multiple Payload MOAs on a Single ADC

CYTOTOXIC PAYLOADS

Induces DNA damage,
leading to cell death

Topoisomerase I
Inhibitor

Inhibits microtubules,
leading to cell death

Auristatin

NON-CYTOTOXIC PAYLOADS

iRGD Peptide¹

Cyclic peptide binds to certain integrins and neuropilin-1 driving drug delivery to tumor microenvironment

Kinase Inhibitor (RTKi)¹

Blocks signaling pathway driving cell growth and differentiation

Potency Booster¹

Low potency as single agent, improves potency of co-administered cytotoxic payload on refractory cells

- SMARTag platform enables the **combination of these 5 different mechanisms of action** as duets or triplets in different formats depending on the indication to generate **completely new classes of ADCs**
- SMARTag-enabled novel payload combinations **yield greater potency with a lower dose of cytotoxic payload**
- As most payload classes are compatible with the SMARTag platform, the **payload panel can be readily expanded**

1. First-in-Class Payload MOA

Current ADC Delivery Challenges Relate to Limitations of Passive Antibody Tumor Penetration

CURRENT ADC DELIVERY CHALLENGE

Inherent limitations of vascular permeability and/or binding site barrier set upper limit to % of injected antibody- based drugs reaching the tumor

IRGD-CONJUGATE VALUE PROPOSITION

Increasing the % injected ADC dose delivered to the tumor would widen the therapeutic index by delivering more payload to the tumor without increasing the total ADC dose

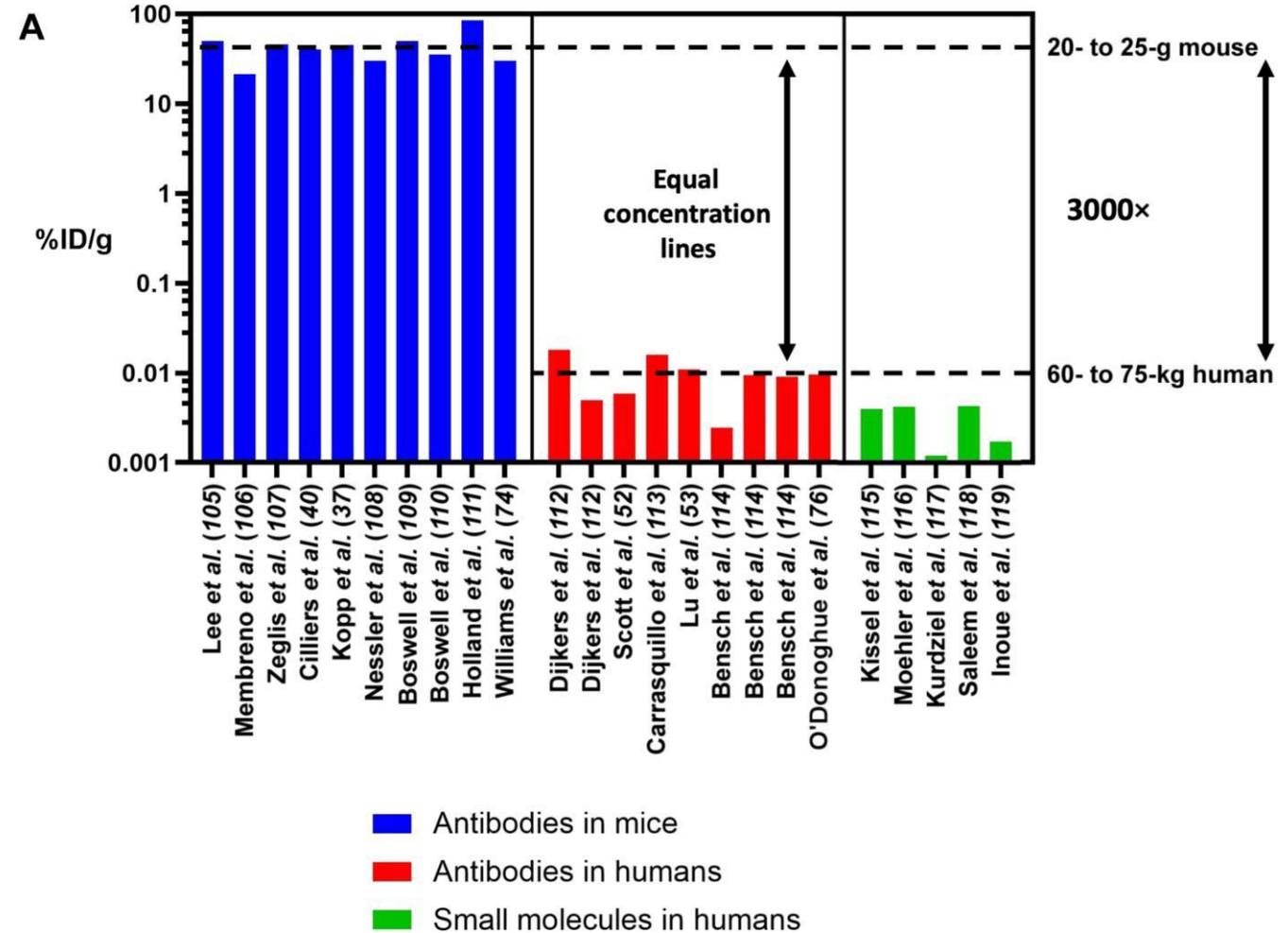
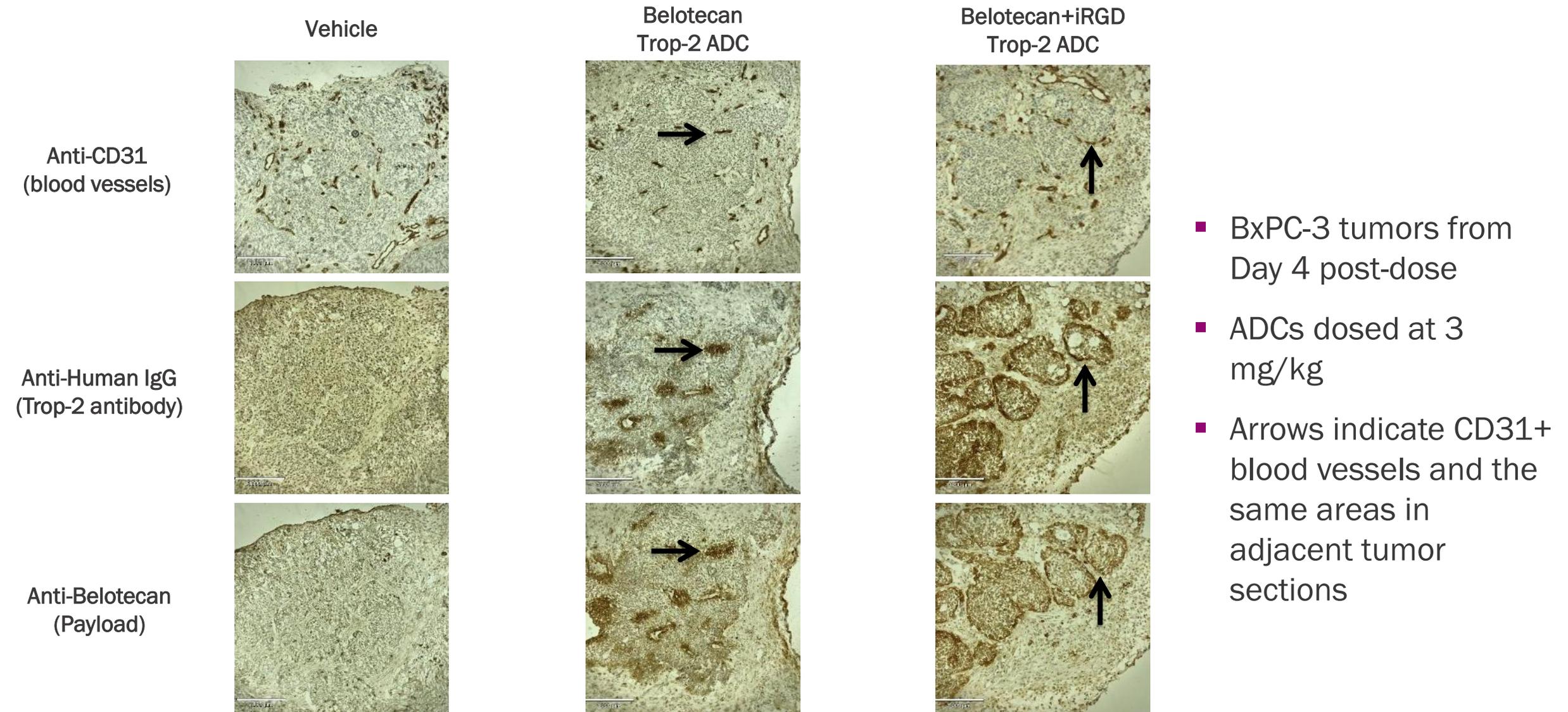


Figure from Clinical translation of antibody drug conjugate dosing in solid tumors from preclinical mouse data
 Baron Rubahamya <https://orcid.org/0000-0002-9116-0848>, Shujun Dong, and Greg M. Thurber
 Science Advances, 31 May 2024, Vol 10, Issue 22

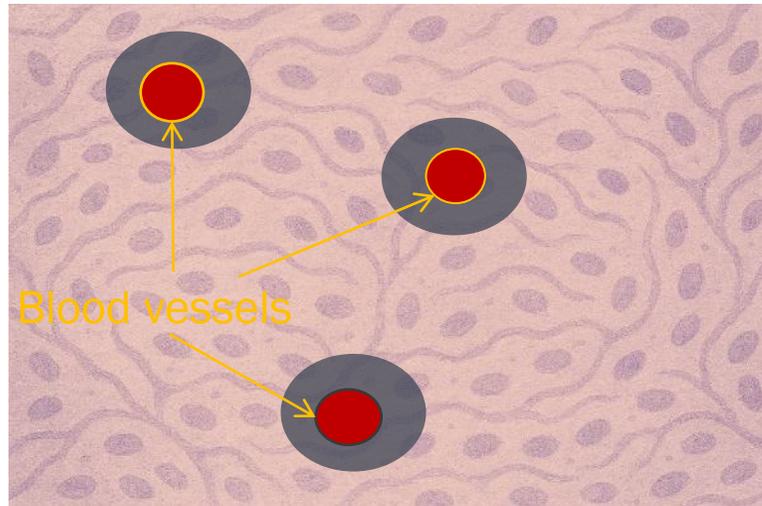
ADC Incorporating iRGD Payloads Demonstrates Altered Intra-Tumor Distribution



- BxPC-3 tumors from Day 4 post-dose
- ADCs dosed at 3 mg/kg
- Arrows indicate CD31+ blood vessels and the same areas in adjacent tumor sections

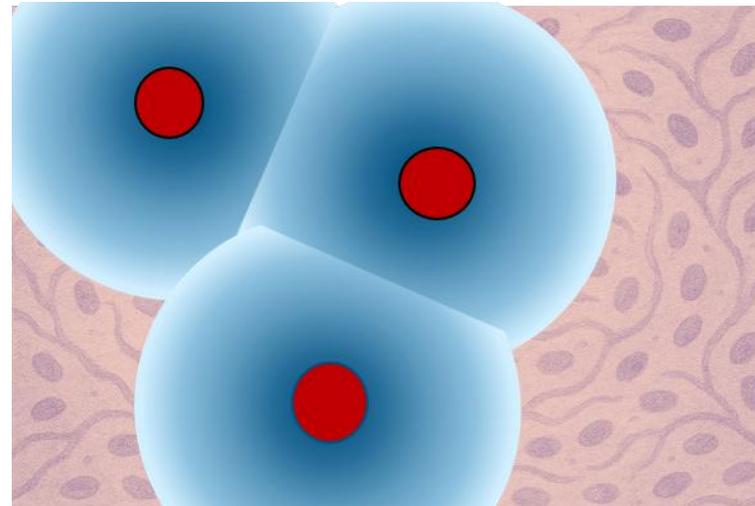
iRGD/Certeptide* can Alter the Distribution of ADC Payload Within a Tumor

Without iRGD/Certeptide

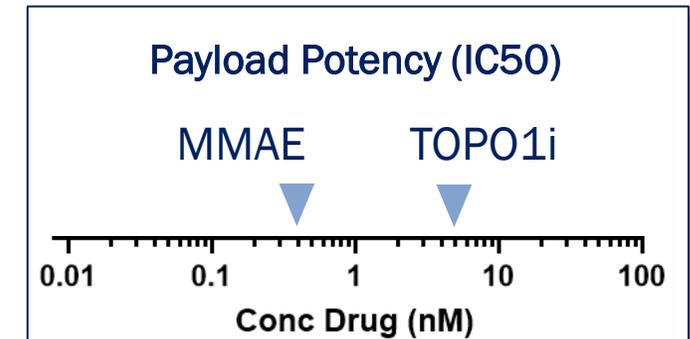


Limited ADC penetration beyond vasculature; denser payload distribution per cell

With iRGD/Certeptide



ADC penetrates deeper into the tumor; lower payload distribution per cell

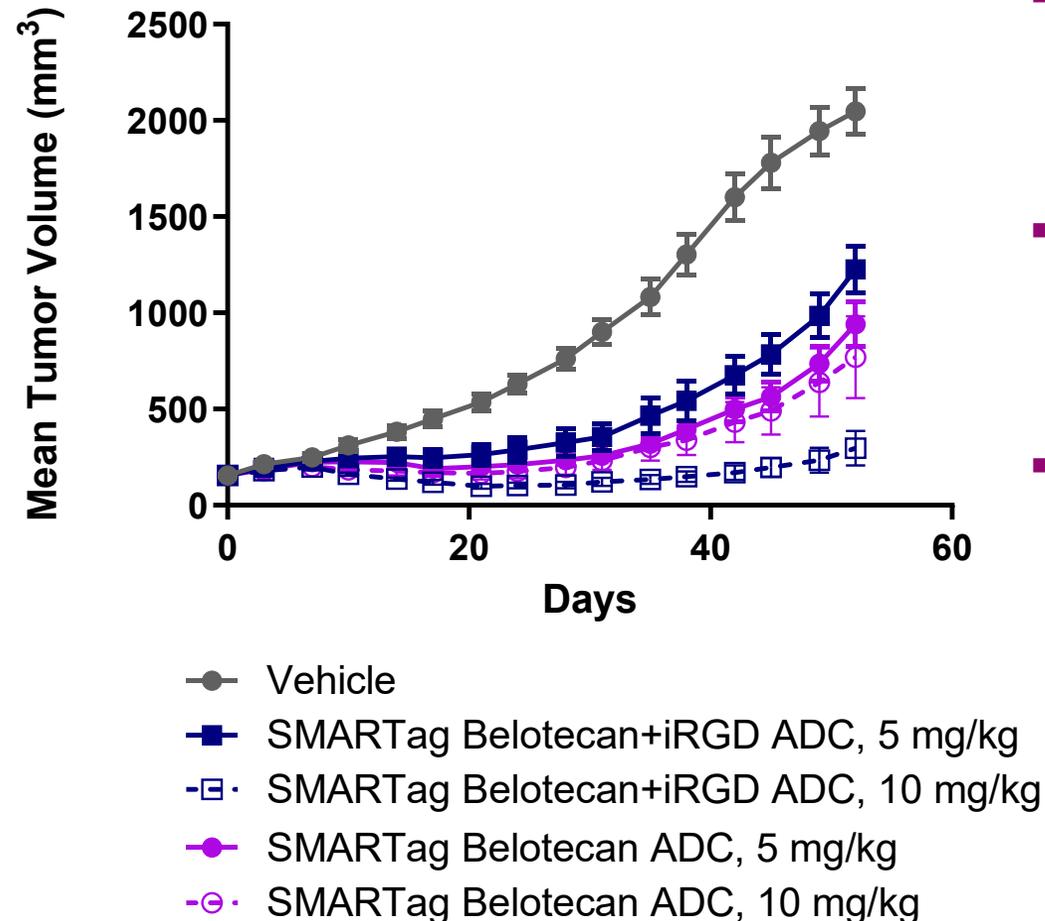


- Payload potency and distribution determine efficacy
- ADC DAR and dosing can be adjusted to optimize outcomes

***Catalent licensed worldwide, non-exclusive rights to develop and commercialize bioconjugate products containing certepetide and its analogs from Lisata Therapeutics**

TOPOi + iRGD DAR[4+4] ADC Demonstrates Dose Responsive Efficacy Not Observed With TOPOi DAR4 ADC

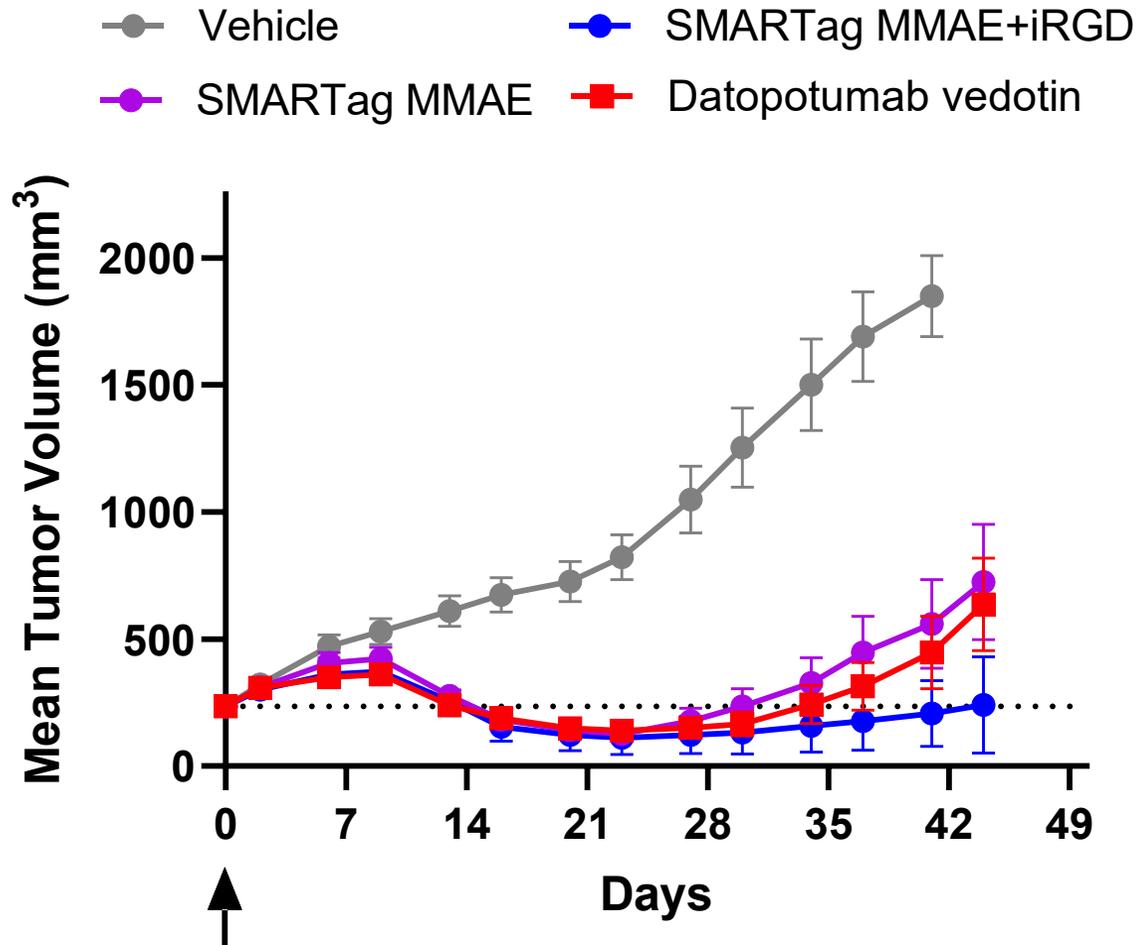
BxPC-3 Xenograft



- Single-payload TOPOi (belotecan) ADCs (no iRGD enhancement) show no dose response, suggesting failure to deliver additional payload to the tumor at higher dose
- By contrast, enhanced DAR[4+4] ADCs incorporating both TOPOi and iRGD demonstrate a clear dose response, with enhanced efficacy at the higher dosages
- Together, the results support iRGD as an additional mechanism for driving TOPOi ADC payload delivery to the tumor

SMARTag® MMAE + iRGD DAR[2+2] ADC Demonstrates Enhanced Efficacy Compared to MMAE ADCs

BxPC-3 Xenograft



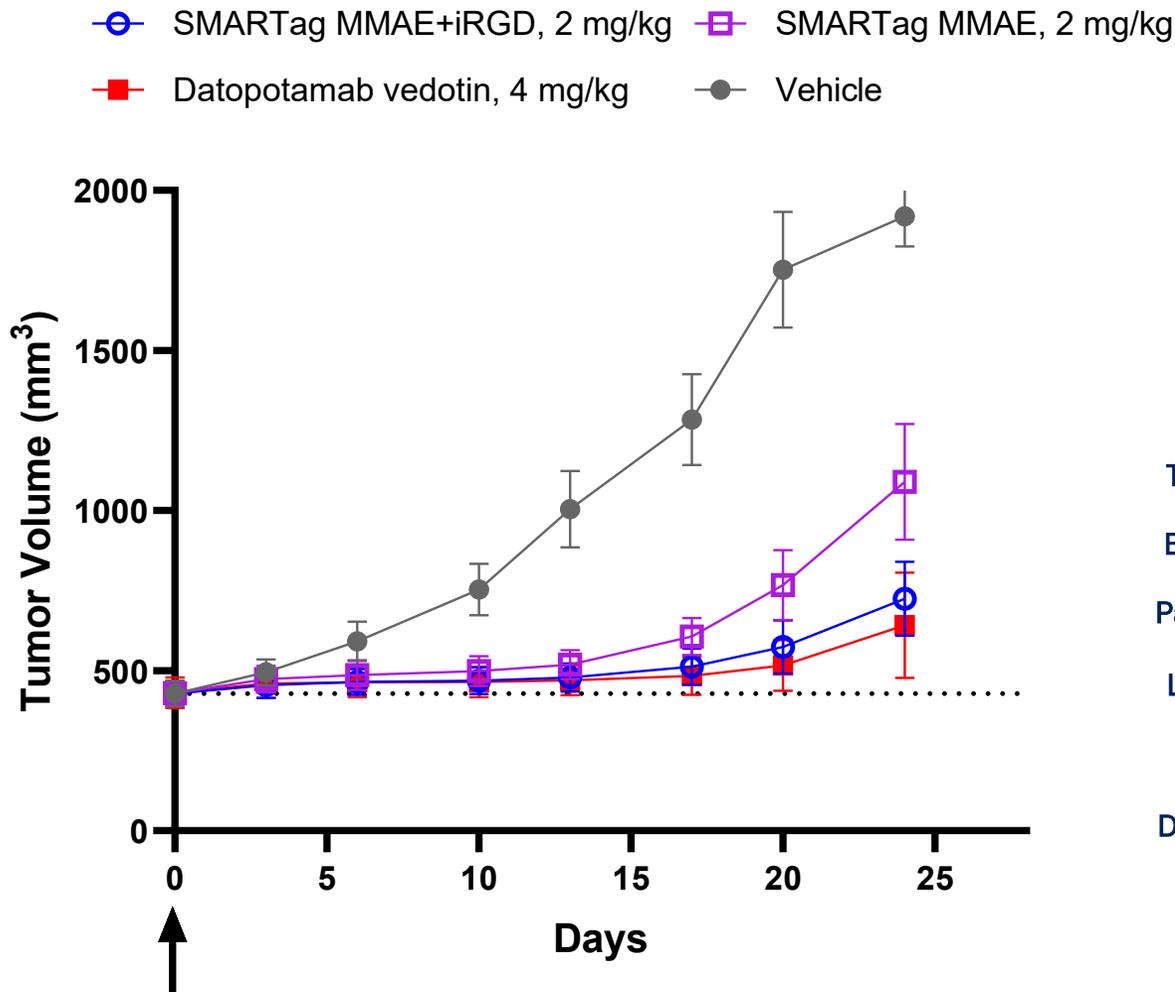
- Enhanced ADCs feature two different MOAs: **tumor delivery and microtubule inhibition**
- SMARTag technology enables equal efficacy at a lower MMAE DAR** compared to conventional technology; **iRGD further boosts the response**

	SMARTag MMAE+iRGD ADC	SMARTag MMAE ADC	Datopotamab Vedotin
Target	Trop-2	Trop-2	Trop-2
Binder	1D4	1D4	Datopotamab
Payload	MMAE+iRGD	MMAE	MMAE
Linker	HIPS-Tandem-Cleavage	HIPS-Tandem-Cleavage	Mal-ValCit-PABC
DAR	[2+2]	2	4
Dosage	3 mg/kg	3 mg/kg	3 mg/kg

6: clinical dosing level

Adding iRGD Yields Equal Efficacy at a Lower ADC and Cytotoxic Payload Dose

BxPC-3 Xenograft



- SMARTag® ADCs incorporating MMAE+iRGD enable enhanced efficacy at both a lower MMAE DAR and a lower dosage compared to vedotin
- The SMARTag® MMAE+iRGD treatment group received only 25% of the MMAE dose contained in the vedotin treatment group yet delivered equal efficacy

	SMARTag® MMAE+iRGD ADC	SMARTag® MMAE ADC	Datopotamab Vedotin
Target	Trop-2	Trop-2	Trop-2
Binder	1D4	1D4	Datopotamab
Payload	MMAE+iRGD	MMAE	MMAE
Linker	HIPS-Tandem-Cleavage	HIPS-Tandem-Cleavage	Mal-ValCit-PABC
DAR	[2+2]	2	4
Dosage	2 mg/kg	2 mg/kg	4 mg/kg

Certepetide

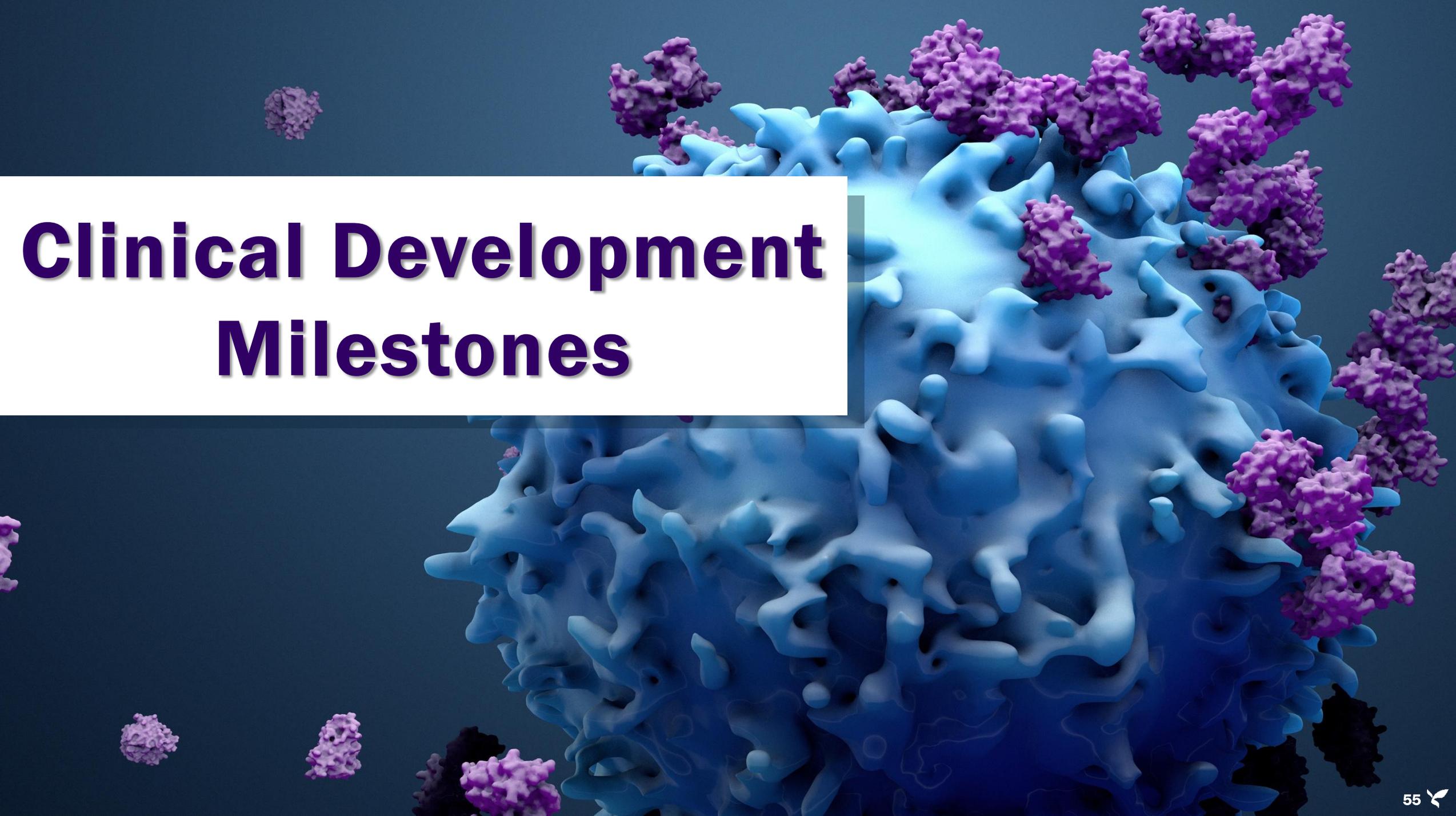
Development Portfolio

Certepetide capital efficient clinical development plan

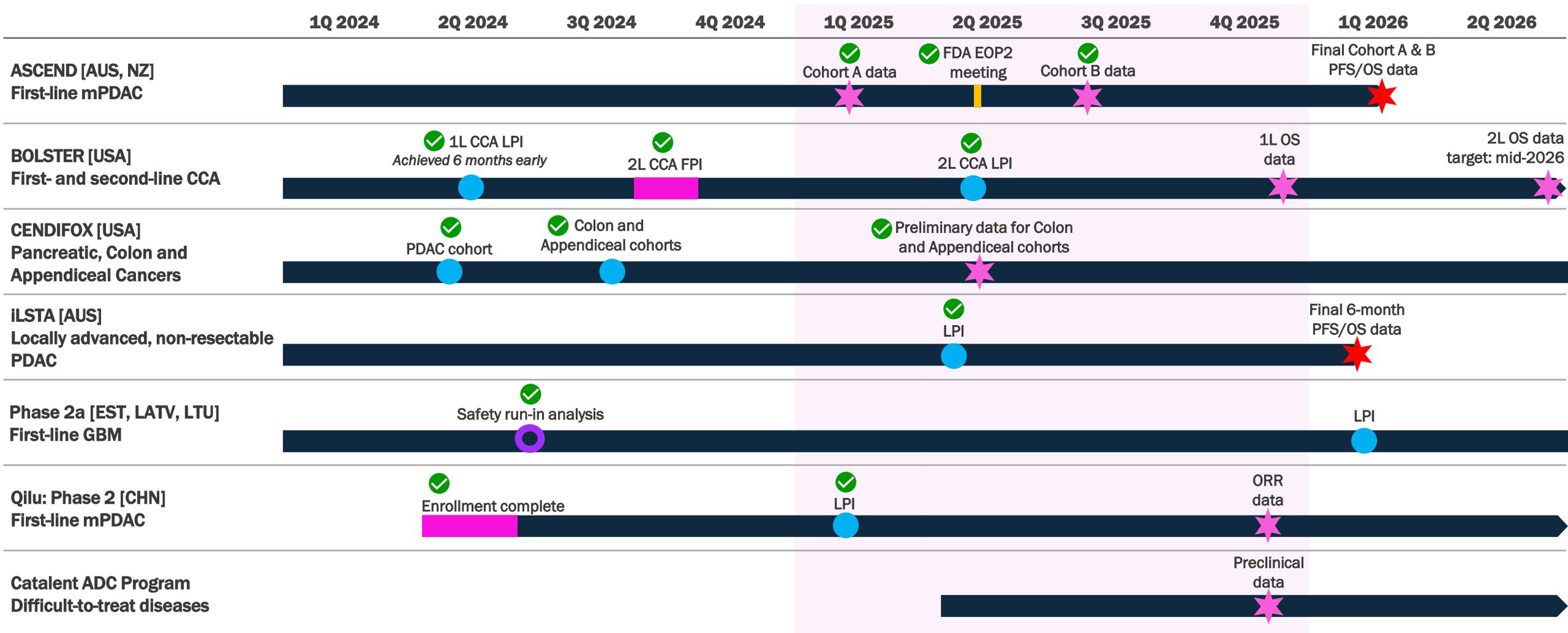
Sponsor(s)	Indication	Description	Current Phase		
			Phase 1	Phase 2	Phase 3
AGITG/Lisata	First-line mPDAC	<ul style="list-style-type: none"> ▪ ASCEND: Phase 2b, placebo-controlled trial (N=158) ▪ Gemcitabine/nab-paclitaxel + certepetide or placebo ▪ Australia/New Zealand 	Cohort A data announced	Cohort B data announced	
Lisata	First- and Second-line Cholangiocarcinoma (CCA)	<ul style="list-style-type: none"> ▪ BOLSTER: Phase 2a, placebo-controlled trial ▪ 1L: Gemcitabine/cisplatin/durvalumab + certepetide or placebo (N=47) ▪ 2L: FOLFOX with certepetide or placebo (N=22) ▪ United States 	1L CCA Enrollment complete	2L CCA Enrollment complete	
KUCC/Lisata <i>Investigator-initiated trial</i>	Pancreatic, Colon, and Appendiceal Cancers	<ul style="list-style-type: none"> ▪ CENDIFOX: Phase 1b/2a, open-label trial (N=50) ▪ FOLFIRINOX + panitumumab** + certepetide ▪ United States 	Enrollment complete		
WARPNINE/Lisata	Locally advanced, non-resectable PDAC	<ul style="list-style-type: none"> ▪ ILSTA: Phase 1b/2a, open-label trial (N=30) ▪ Gemcitabine/nab-paclitaxel/durvalumab + certepetide ▪ Australia 	Enrollment complete		
Tartu University/Lisata <i>Investigator-initiated trial</i>	First-line Glioblastoma Multiforme (GBM)	<ul style="list-style-type: none"> ▪ Phase 2a, placebo-controlled trial (N=30) ▪ Temozolomide +/- certepetide ▪ Estonia/Latvia 	Enrolling		
Qilu/Lisata	First-line mPDAC	<ul style="list-style-type: none"> ▪ Phase 2, placebo-controlled trial (N=96) ▪ Gemcitabine/nab-paclitaxel + certepetide ▪ China 	Enrollment complete		

*Panitumumab may be added for colorectal or appendiceal patients without Ras mutation

Clinical Development Milestones

A 3D molecular model of a protein-ligand complex. The protein is shown as a large, light blue, textured surface with many protrusions and indentations. Several smaller, purple, textured molecular structures are bound to the protein's surface. The background is a dark blue gradient.

A wealth of key certepetide clinical milestones

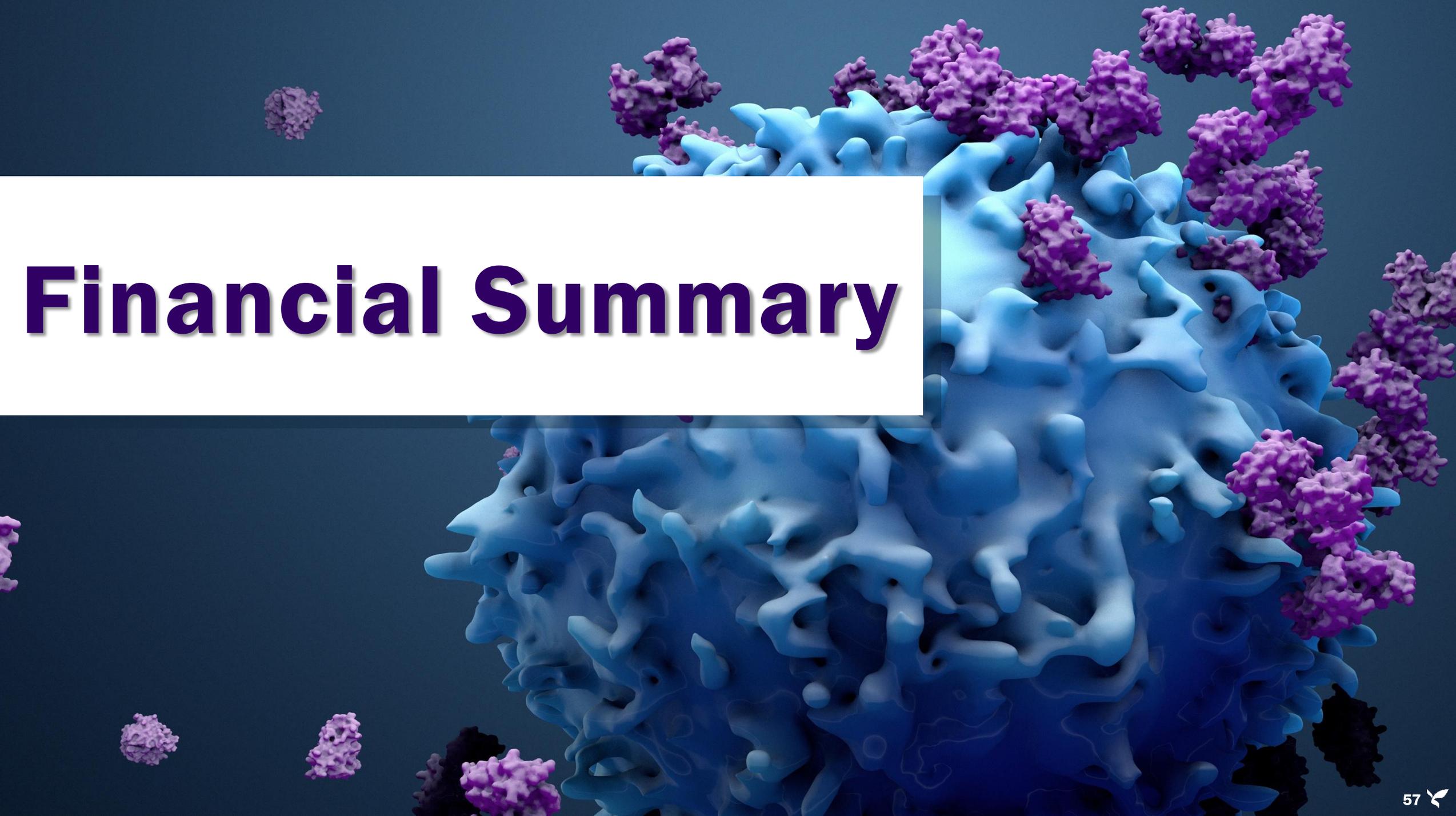


First patient in
 Last patient in
 Interim analysis
 Safety run-in analysis
 Data
 Final data
 Milestone achieved

*Several of these studies are investigator-initiated trials. Lisata has limited control and thus, timelines and expectations may be subject to change.

- PFS: Progression-free Survival
- OS: Overall Survival
- ORR: Objective Response Rate
- EOP2: End-of-Phase 2

Financial Summary

A 3D molecular model of a protein or enzyme, rendered in shades of blue and purple. The structure is highly detailed, showing various folds, loops, and protrusions. The background is a dark blue gradient.

Capital projected to fund all clinical programs to data

Cash & Investments

As of 9/30/2025

\$19.0M

Debt

\$0

Projected Cash Runway into

1Q 2027

Common Shares Outstanding (9/30/2025):

8.8 million shares

Options Outstanding (9/30/2025):

Exercise Price: \$0.02 - \$4.22 = 1,286,200 shares

Exercise Price: > \$4.22 = 216,700 shares

1.5 million shares

Warrants Outstanding (9/30/2025):

Weighted Average Exercise Price: \$40.52

1.5 million shares

Key factors supporting investment in Lisata Therapeutics



PEOPLE

Seasoned management with successful international drug development experience and expertise



INTELLECTUAL PROPERTY

Proprietary field-leading technology with global IP protection extending beyond 2040



MILESTONES

Multiple product and business milestones projected over the next 12 months



CAPITAL

\$19.0 million cash*- no debt; Funds to support advancement of current clinical programs



PARTNERING

Platform technology validated by existing partnerships with potential for many others



Targeted Therapy *Delivered*

Investor Relations Contact:

John D. Menditto

VP, IR & Corporate Communications

Tel: (908) 842-0084 | Email: jmenditto@lisata.com

Nasdaq: LSTA | www.lisata.com



Appendix

Certepetide capital efficient clinical development plan

Development Partner(s) [Development Venue]	Indication and Trial Product/Comparator	Stage of Development	Strategic Rationale
Lisata/AGITG [Australia/New Zealand]	First-line mPDAC; Gemcitabine/nab-paclitaxel with certepetide or placebo	Phase 2b (ASCEND)	Corroborate Phase 1b results in a placebo-controlled trial and evaluate 2 dose regimens of certepetide for dose optimization
Lisata [United States]	First- and Second-line Cholangiocarcinoma (CCA); 1L CCA: Gemcitabine/cisplatin/durvalumab + certepetide or placebo 2L CCA: FOLFOX + certepetide or placebo	Phase 2a (BOLSTER)	Assess certepetide safety and effectiveness in cholangiocarcinoma in a placebo-controlled trial (proof-of-concept)
KUCC/Lisata* [United States]	Pancreatic, Colon & Appendiceal Cancers; FOLFIRINOX + panitumumab** with certepetide	Phase 1b/2a (CENDIFOX)	Tumor immuno-profiling pre- & post- treatment and certepetide effectiveness assessment in combination with chemo and an EGFR inhibitor (open-label)
WARPNINE/Lisata [Australia]	Locally Advanced, Non-Resectable PDAC; Gemcitabine/nab-paclitaxel/durvalumab + certepetide	Phase 1b/2a (ILSTA)	Assess certepetide safety and effectiveness in combination with IO & Chemo in locally advanced PDAC; determine if inoperable tumors can become operable (open-label)
Tartu University/Lisata* [Estonia/Latvia]	First-line Glioblastoma Multiforme (GBM); Temozolomide +/- certepetide	Phase 2a	Assess certepetide safety and effectiveness in additional tumor type (GBM) in a placebo-controlled trial
Qilu [China]	First-line mPDAC; Gemcitabine/Nab-paclitaxel + certepetide	Phase 2b	Continue development of certepetide in China (placebo controlled)

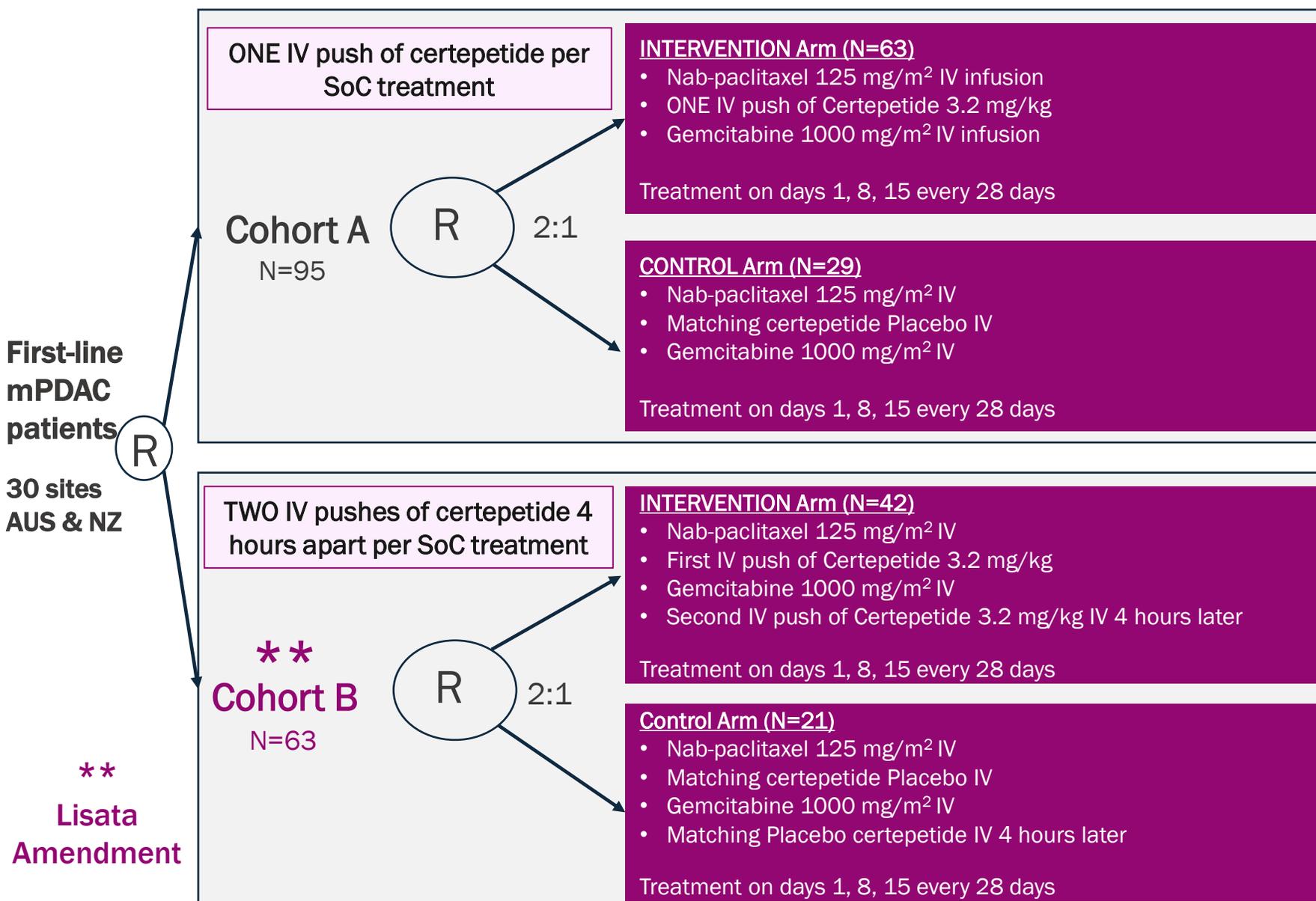
*Investigator-initiated trial

**Panitumumab may be added for colorectal or appendiceal patients without Ras mutation

ASCEND: Phase 2b, blinded, randomized trial in mPDAC

Sponsor/Partner	<ul style="list-style-type: none">▪ Australasian Gastro-Intestinal Trials Group (AGITG) in collaboration with the NHMRC Clinical Trials Centre at the University of Sydney▪ Lisata funded (LSTA eligible for ~43% rebate on all qualified R&D expenses in AUS)
Objective	<ul style="list-style-type: none">▪ Corroborate Phase 1b results in a placebo-controlled study▪ Determine if a second dose of certepetide further improves patient outcomes
Design	<ul style="list-style-type: none">▪ Phase 2b randomized, double-blind study in mPDAC testing gemcitabine + nab-paclitaxel SoC with one of two certepetide dose regimens or placebo
Study Size	<ul style="list-style-type: none">▪ N=158 (~30 sites in Australia and New Zealand)
Endpoints	<ul style="list-style-type: none">▪ Primary: Progression Free Survival▪ Secondary: AEs, SAEs, Overall Survival, Objective Tumor Response Rate
Timing	<ul style="list-style-type: none">▪ Enrollment completed December 2023▪ Preliminary Cohort A data was presented at ASCO-GI in January 2025▪ Preliminary Cohort B data was presented at ESMO-GI in July 2025

ASCEND Phase 2b trial design



Phase 2b randomized, double-blind study in mPDAC testing gemcitabine + nab-paclitaxel SoC with one of two certepetide dose regimens or placebo

Endpoints

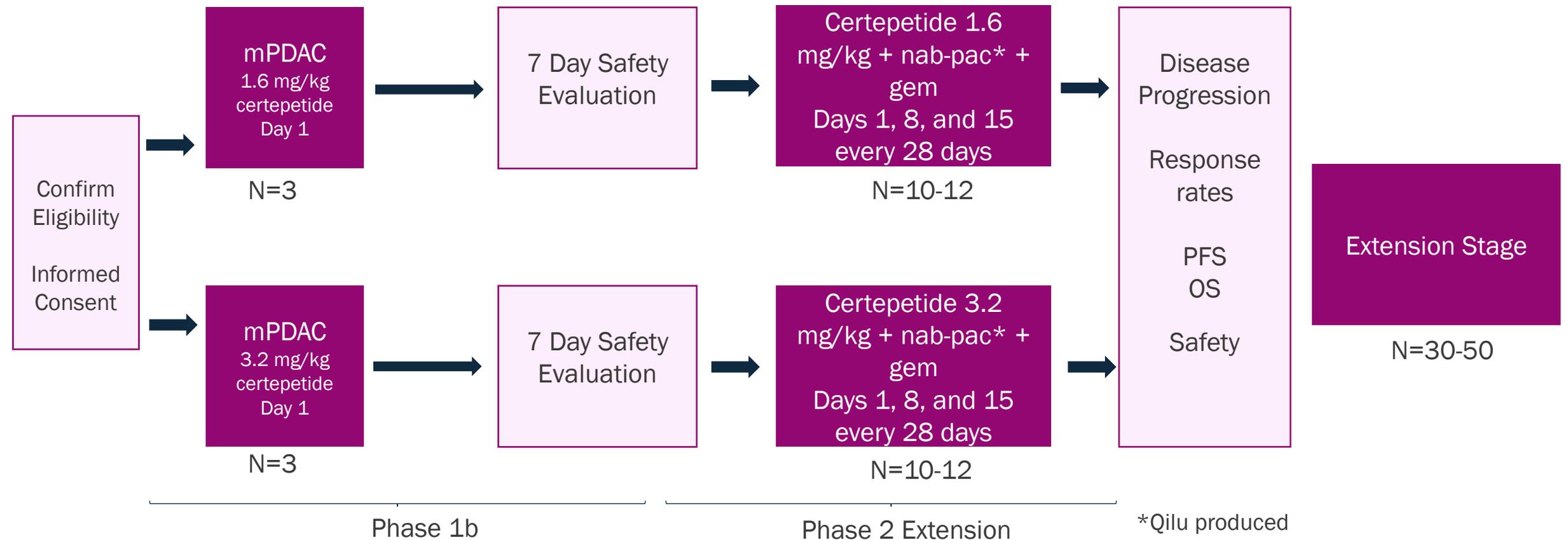
- PFS: Progression Free Survival
- ORR: Objective Response Rate
- OS: Overall Survival
- Safety (Adverse Events)
- QoL: Quality of Life
- Exploratory Endpoints

Phase 1b/2a open-label trial in mPDAC in China (CEND1-201)

Sponsor/Partner	<ul style="list-style-type: none">▪ Qilu Pharmaceutical (funds all development in China)
Objective	<ul style="list-style-type: none">▪ Evaluate safety, pharmacokinetics and preliminary efficacy of certepetide added to SoC in Chinese patients with mPDAC
Design	<ul style="list-style-type: none">▪ Phase 1b/2a open-label study in advanced mPDAC patients of Chinese ethnicity testing SoC chemotherapy (gemcitabine + Qilu-produced nab-paclitaxel) in combination with certepetide
Study Size	<ul style="list-style-type: none">▪ N=55 (~15 sites)
Endpoints	<ul style="list-style-type: none">▪ Primary: AEs, SAEs, Objective Response Rate, Duration of Response, Disease Control Rate, Overall Survival, and Progression Free Survival▪ Secondary: Pharmacokinetic parameters
Timing	<ul style="list-style-type: none">▪ Preliminary data was presented at the 2023 ASCO Annual Meeting

Qilu Phase 1b/2a trial design

Phase 1b/2a study evaluating the safety, pharmacokinetics, and preliminary efficacy of certepetide for injection in Chinese patients with advanced metastatic pancreatic ductal adenocarcinoma

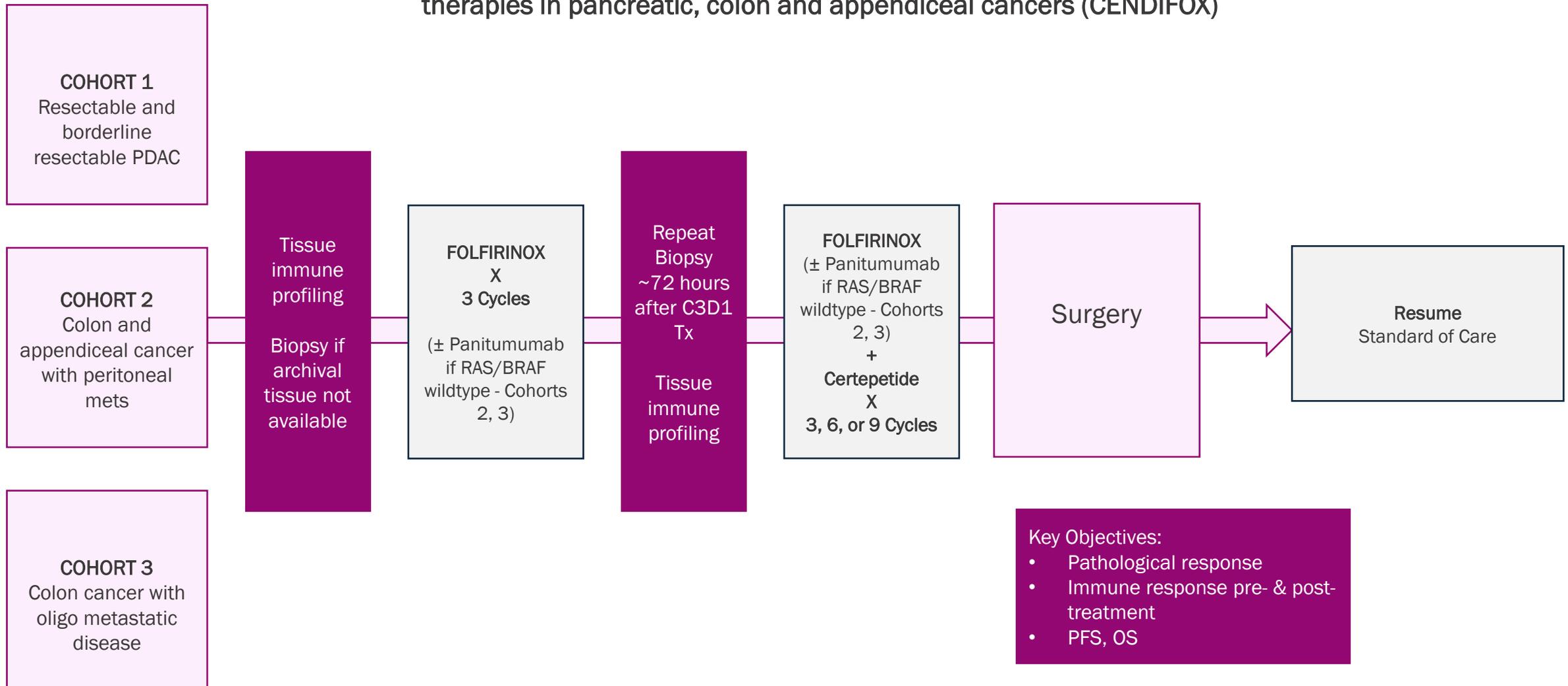


CENDIFOX: Phase 1b/2a open-label trial in PDAC and other cancers

Sponsor/Partner	<ul style="list-style-type: none">▪ University of Kansas Medical Center (Investigator initiated trial in U.S.)▪ KUCC funded; Lisata provides certepetide
Objective	<ul style="list-style-type: none">▪ Evaluate the safety and therapeutic effect of certepetide in combination with neoadjuvant FOLFIRINOX-based therapies and an EGFR inhibitor for the treatment of pancreatic, colon and appendiceal cancers and determine immuno-profiling in tumor pre- & post- treatment
Design	<ul style="list-style-type: none">▪ Phase 1b/2a open-label study in resectable pancreatic, colon with oligo metastases and appendiceal with peritoneal metastases cancers testing SoC chemotherapy (neoadjuvant FOLFIRINOX-based therapies) with certepetide ± panitumumab
Study Size	<ul style="list-style-type: none">▪ N=50 (24 PDAC, 15 colon, and 11 appendiceal)
Endpoints	<ul style="list-style-type: none">▪ Primary: Drug Safety▪ Secondary: Overall Survival, Disease-free Survival, Overall Response Rate, R0 Resection Rate, Pathological Response Rate
Timing	<ul style="list-style-type: none">▪ Enrollment completed 4Q24

CENDIFOX Phase 1b/2a trial design

Phase 1b/2a open-label trial of certepetide in combination with neoadjuvant FOLFIRINOX based therapies in pancreatic, colon and appendiceal cancers (CENDIFOX)

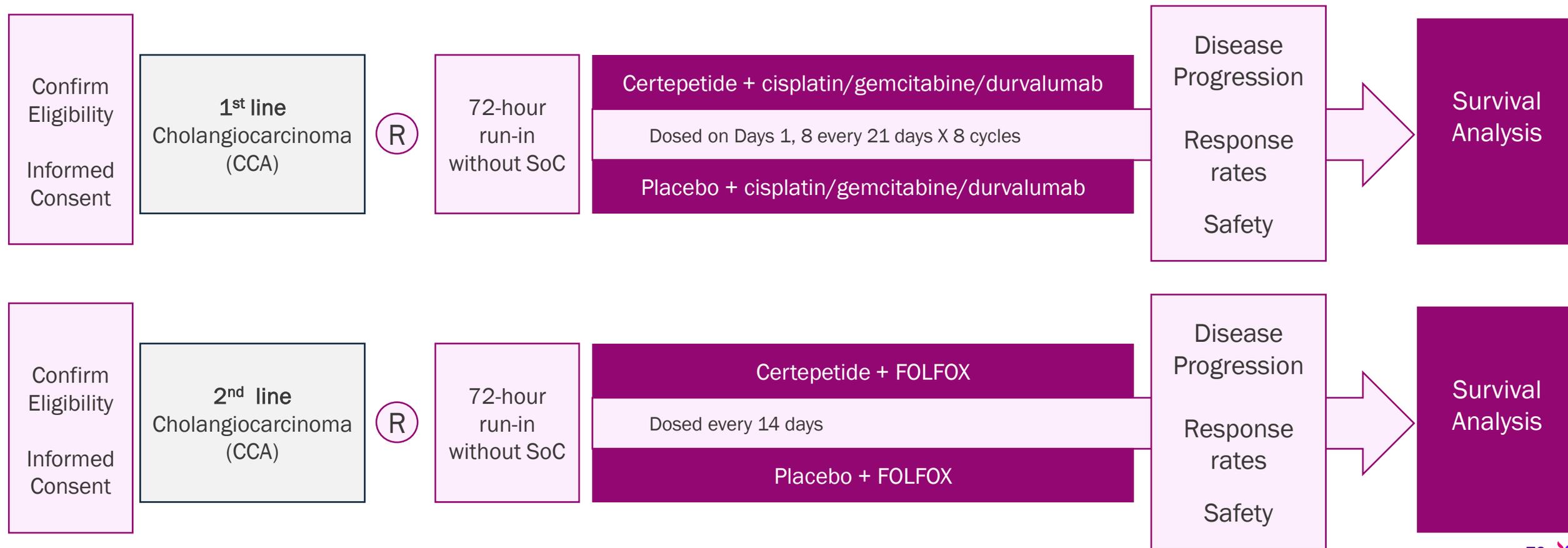


BOLSTER: Phase 2 blinded, randomized trial in cholangiocarcinoma

Sponsor/Partner	<ul style="list-style-type: none">▪ Lisata (U.S.)
Objective	<ul style="list-style-type: none">▪ Evaluate the preliminary efficacy, safety and tolerability of certepetide in combination with standards of care in subjects with first- and second-line cholangiocarcinoma
Design	<ul style="list-style-type: none">▪ Phase 2 randomized, double-blind, placebo-controlled, proof-of-concept trial in first- and second-line cholangiocarcinoma testing corresponding SoC with certepetide or placebo
Study Size	<ul style="list-style-type: none">▪ N=69 (1L: N=47, 2L: N=22)▪ 1:1 SoC + certepetide or SoC + placebo
Endpoints	<ul style="list-style-type: none">▪ Primary: OS▪ Secondary: Safety, ORR, PFS
Timing	<ul style="list-style-type: none">▪ Patient treatment has been completed

BOLSTER Phase 2a trial design

Phase 2a, double-blind, placebo-controlled, multi-center, randomized study evaluating certepetide when added to standard of care (SoC) versus standard of care alone in subjects with first- and second-line cholangiocarcinoma

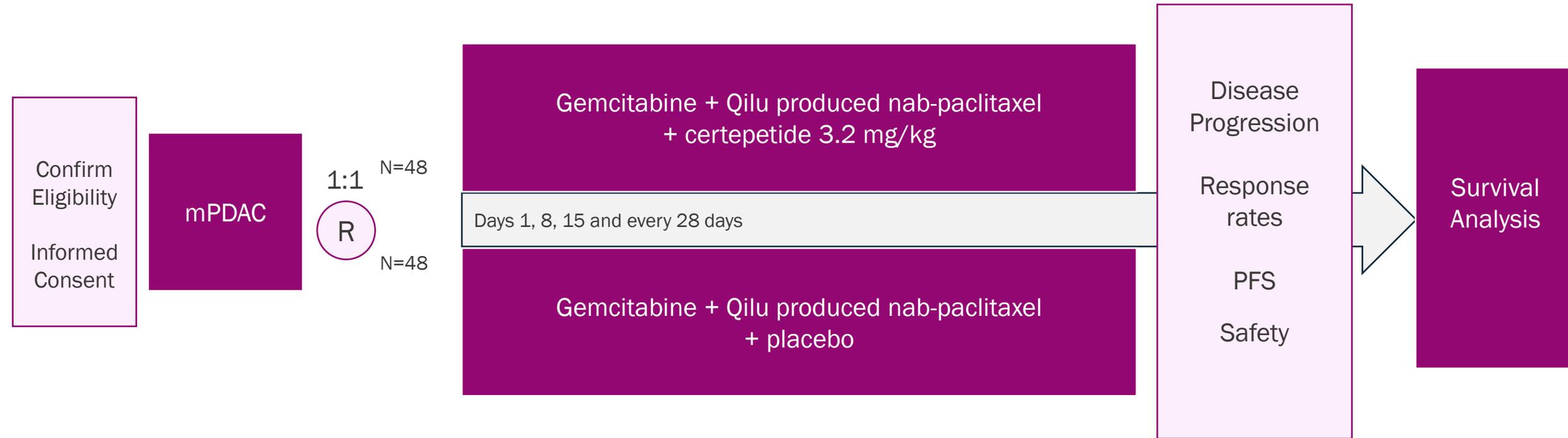


Phase 2 double-blind, placebo-controlled trial in mPDAC in China

Sponsor/Partner	<ul style="list-style-type: none">▪ Qilu Pharmaceutical (funds all development in China)
Objective	<ul style="list-style-type: none">▪ Further evaluate safety and therapeutic efficacy of certepetide when added to SoC in Chinese patients with locally advanced unresectable mPDAC
Design	<ul style="list-style-type: none">▪ Phase 2b, double-blind, placebo-controlled, randomized study evaluating certepetide + SoC (Qilu-produced nab-paclitaxel and gemcitabine) vs. placebo + SoC
Study Size	<ul style="list-style-type: none">▪ N=96 (1:1 SoC + certepetide or SoC + placebo)
Endpoints	<ul style="list-style-type: none">▪ Objective response rate, progression free survival, duration of response, disease control rate, overall survival▪ Safety
Timing	<ul style="list-style-type: none">▪ Enrollment completed 1Q25

Qilu Phase 2b trial design

Phase 2b, double-blind, placebo-controlled, randomized, multicenter study evaluating the safety and efficacy of certepetide when added to standard of care (nab-paclitaxel and gemcitabine) vs. standard of care alone and placebo in Chinese subjects with locally advanced unresectable mPDAC

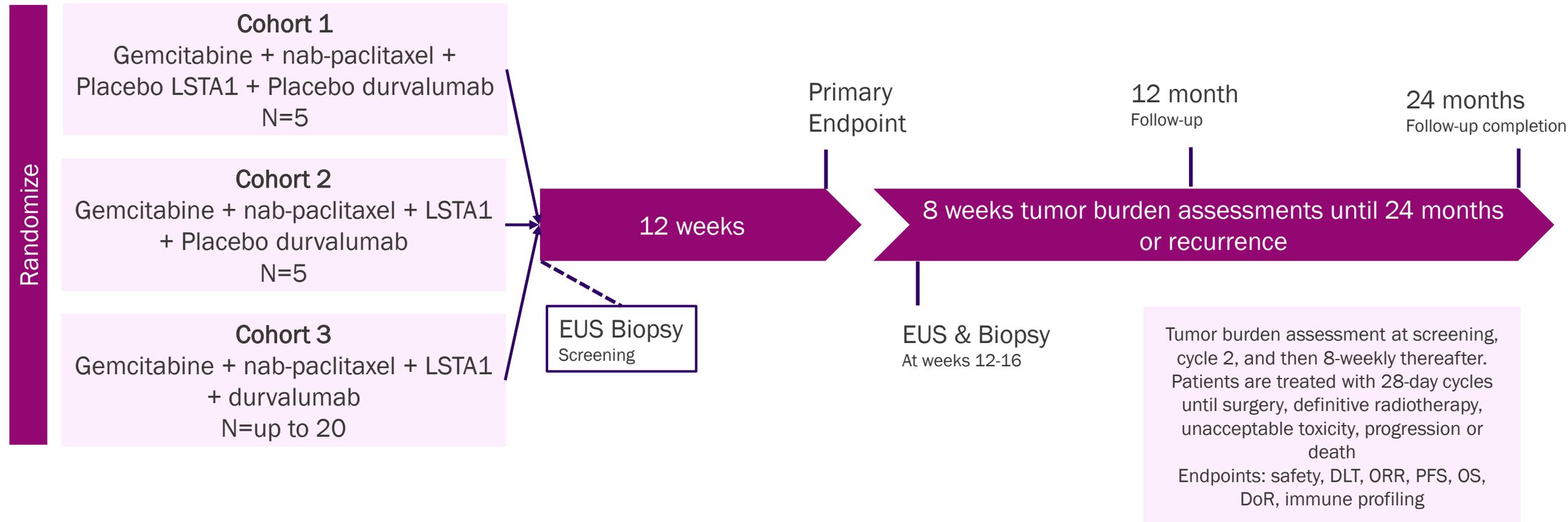


iLSTA: Phase 1b/2a trial in locally advanced PDAC with chemo & IO

Sponsor/Partner	<ul style="list-style-type: none">WARPNINE, Inc. (registered charity in Australia) is funding trialLisata providing study drug
Objective	<ul style="list-style-type: none">Evaluate safety and therapeutic effect of LSTA1 in combination with IO & Chemo in locally advanced non-resectable pancreatic ductal adenocarcinoma (PDAC); determine if inoperable tumors can become operable
Design	<ul style="list-style-type: none">Phase 1b/2a proof-of-concept safety and early efficacy study of LSTA1 in combination with durvalumab, gemcitabine and nab-paclitaxel, as first-line treatment in <i>locally advanced</i> non-resectable pancreatic adenocarcinoma
Study Size	<ul style="list-style-type: none">N=30
Endpoints	<ul style="list-style-type: none">Safety and tolerability; 28-day DLTsObjective response rate, PFS, OS, duration of response, immune cell infiltration
Timing	<ul style="list-style-type: none">Final 6-month PFS/OS data expected 1Q 2026Preliminary data presented at ASCO-GI (January 2025), with updated data consistent with previous findings presented at ESMO-GI (July 2025)

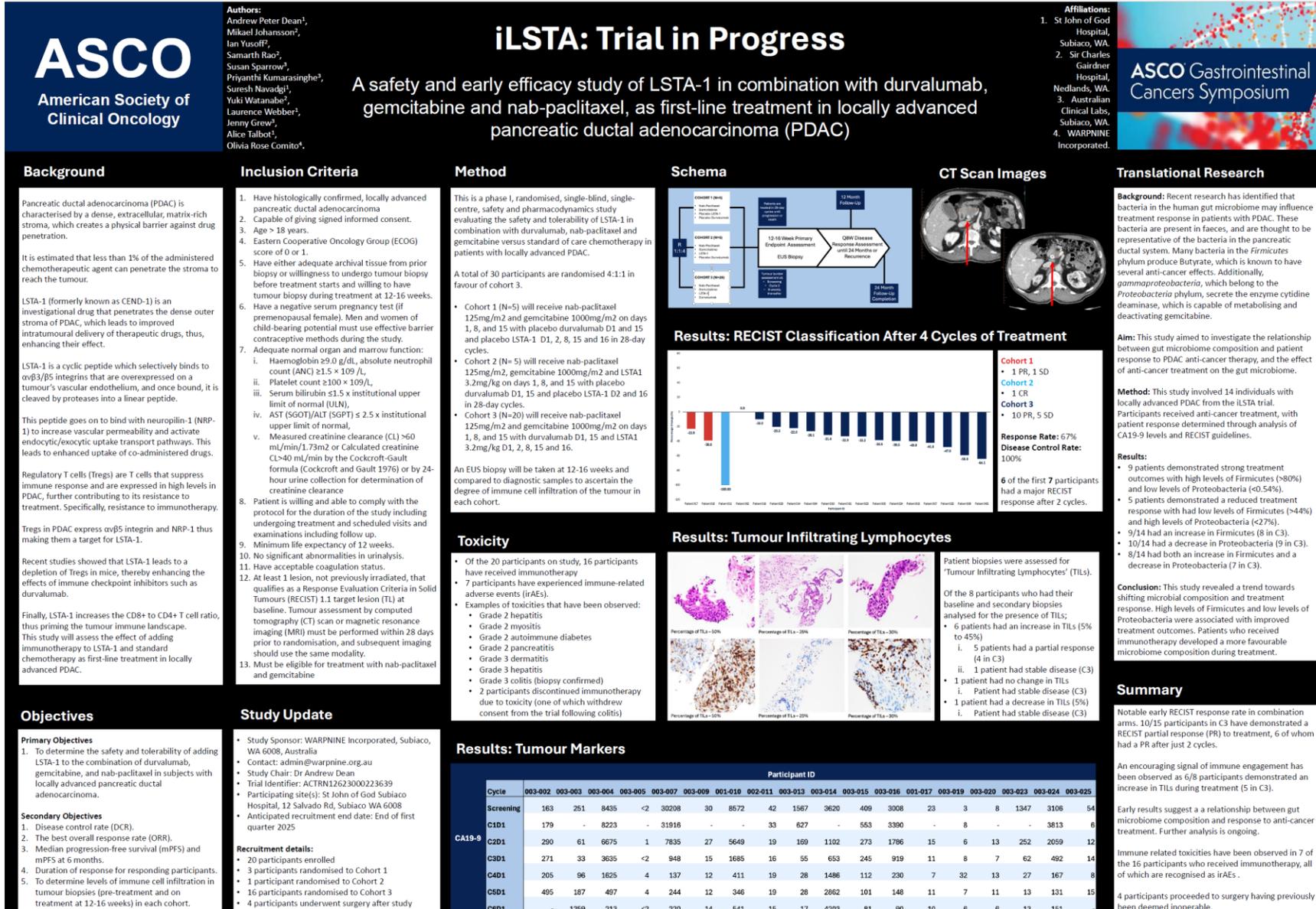
iLSTA Phase 1b/2a trial design

Phase 1b/2a proof-of-concept safety and early efficacy study of LSTA1 in combination with durvalumab, gemcitabine and nab-paclitaxel, as first-line treatment in *locally advanced non-resectable* pancreatic ductal adenocarcinoma



gemcitabine 1000mg/m² : Days 1, 8, 15 in 28-day cycles
 nab-paclitaxel 125mg/m²: Days 1, 8, 15 in 28-day cycles
 durvalumab 750mg: Days 1 and 15 in 28-day cycles
 certepetide 3.2 mg/kg/ Placebo: Days 1, 2, 8, 15, 16 in 28-day cycles

Preliminary iLSTA trial results poster at 2025 ASCO-GI Symposium



Updated preliminary iLSTA trial results poster at 2025 ESMO-GI



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iLSTA

Provisional results of immunotherapy combined with LSTA1 plus nab-paclitaxel and gemcitabine for locally advanced pancreatic ductal adenocarcinoma

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3. Australian Clinical Labs, Subiaco, WA.
4. WARPINNE Incorporated.



Background

Pancreatic ductal adenocarcinoma (PDAC) is characterised by a dense, extracellular, matrix-rich stroma, which creates a physical barrier against drug penetration.

This leads to less than 1% of the administered chemotherapeutic agent being able to penetrate the stroma to reach the tumour.

LSTA-1 (formerly known as CEND-1) is an investigational drug that can penetrate the dense outer stroma of PDAC tumours, which leads to improved intratumoural delivery of therapeutic drugs, thus, enhancing their effect.

LSTA-1 is a cyclic peptide that selectively binds to αvβ3/β5 integrins expressed on the tumour's vascular endothelium and intratumorally. Once bound, a protease cleavage event occurs to activate the peptide.

This peptide then goes on to bind with neuropilin-1 (NRP-1) to increase vascular permeability and activate an endocytic uptake transport pathway, known as the CENDR pathway. This leads to enhanced uptake of co-administered drugs.

Regulatory T cells (Tregs) suppress the immune response and are expressed in high levels in PDAC tumours, further contributing to resistance to anti-cancer treatment. Specifically, resistance to immunotherapy.

Tregs in PDAC tumours also express αvβ5 integrins and NRP-1, thus, making them a target for LSTA-1. Recent studies in mouse models showed that LSTA-1 leads to the depletion of Tregs, thereby enhancing the effect of immune checkpoint inhibitors such as durvalumab.

Finally, LSTA-1 increases the CD8+ to CD4+ T cell ratio, priming the tumour immune landscape.

Therefore, this study will assess the effect of adding LSTA-1 and/or immunotherapy to standard chemotherapy as first-line treatment for locally advanced PDAC.

Objectives

Primary Objectives

- To determine the safety and tolerability of adding LSTA-1 to the combination of durvalumab, gemcitabine, and nab-paclitaxel in subjects with locally advanced pancreatic ductal adenocarcinoma.

Secondary Objectives

- Disease control rate (DCR).
- The best overall response rate (ORR).
- Median progression-free survival (mPFS) and mOS at 6 months.
- Duration of response for responding participants.
- To determine levels of immune cell infiltration in tumour biopsies (pre-treatment and on treatment at 12-16 weeks) in each cohort.

Inclusion Criteria

- Histologically confirmed, locally advanced PDAC.
- Eastern Cooperative Oncology Group (ECOG) score of 0 or 1.
- Minimum life expectancy of 12 weeks.
- Adequate archival tissue from prior biopsy or willingness to undergo tumour biopsy before treatment starts.
- Willing to have tumour biopsy at 12-16 weeks.
- Adequate normal organ and marrow function.
- No significant abnormalities in urinalysis.
- Have acceptable coagulation status.
- At least 1 lesion, not previously irradiated, that qualifies as a RECIST 1.1 target lesion at baseline. Tumour assessment by CT scan or MRI.
- Must be eligible for treatment with nab-paclitaxel and gemcitabine.

Study Update

- Recruitment details:**
- 29 participants enrolled
 - 23 currently evaluable participants
 - 4 participants randomised to Cohort 1
 - 2 participant randomised to Cohort 2
 - 17 participants randomised to Cohort 3

Method

This study was conducted as a phase I, randomised, single-blind, single-centre, safety and pharmacodynamics study evaluating the safety and tolerability of LSTA-1 in combination with durvalumab, nab-paclitaxel and gemcitabine versus standard of care chemotherapy in patients diagnosed with locally advanced PDAC.

30 participants were randomised in a 4:1:1 ratio;

- Cohort 1/C1 (N=5) received nab-paclitaxel 125mg/m² and gemcitabine 1000mg/m² on days 1, 8, and 15 with placebo durvalumab on D1 and 15 and placebo LSTA-1 on D1, 2, 8, 15 and 16.
- Cohort 2/C2 (N= 5) will receive nab-paclitaxel 125mg/m², gemcitabine 1000mg/m² and LSTA1 3.2mg/kg on D1, 8, and 15 with placebo durvalumab D1 and 15 and placebo LSTA-1 D2 and 16.
- Cohort 3/C3 (N=20) will receive nab-paclitaxel 125mg/m² and gemcitabine 1000mg/m² on D1, 8, and 15 with durvalumab on D1 and 15 and LSTA1 3.2mg/kg D1, 2, 8, 15 and 16.

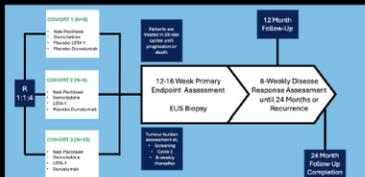
Participants received treatment in 28-day cycles.

An EUS biopsy was conducted between weeks 12 and 16 and compared to the diagnostic samples to determine the degree of tumour immune cell infiltration in each cohort.

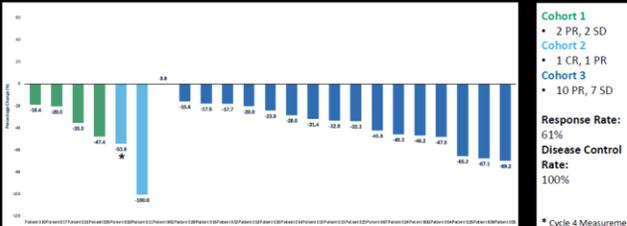
Toxicity

- Of the 29 participants recruited, 17 participants have received immunotherapy.
- 7 participants have experienced immune-related adverse events (irAEs).
- Examples of toxicities that have been observed: Grade 2 hepatitis, Grade 2 myositis, Grade 2 autoimmune diabetes, Grade 2 pancreatitis, Grade 3 dermatitis, Grade 3 hepatitis, Grade 3 colitis (biopsy confirmed).
- 2 participants discontinued immunotherapy due to toxicity (one of which withdrew consent from the trial following colitis).

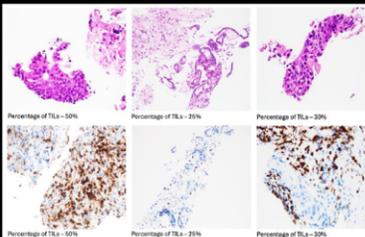
Schema



Results: RECIST Classification After Completing Treatment



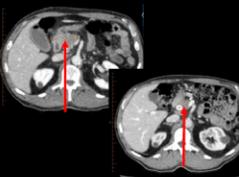
Results: Tumour Infiltrating Lymphocytes



Patient biopsies were assessed for 'Tumour Infiltrating Lymphocytes' (TILs). Of the 14 participants who had their baseline and secondary biopsies analysed for TILs:

- 8 patients had an increase in TILs (5% to 45%)
 - 7 patients had a partial response (6 in C3)
 - 1 patient had stable disease (C3)
- 4 patients showed nil (2) or minimal (2) residual adenocarcinoma (isolated tumour cells)
- 1 patient had no change in TILs
 - 1 patient had stable disease (C3)
 - 1 patient had a decrease in TILs (5%)
 - 1 patient had stable disease (C3)

CT Scan Images



Translational Research

Background: Recent research has identified that bacteria in the human gut microbiome may influence treatment response in patients with PDAC. Specifically, these studies have revealed the gut microbiome may impact the tumour microenvironment, metabolism, and sensitivity to therapeutic drugs. Many bacteria in the *Firmicutes* phylum produce Butyrate, which is known to have several anti-cancer properties. Additionally, *gammaproteobacteria*, a class of bacteria that belongs to the *Proteobacteria* phylum, secrete the enzyme cytidine deaminase, which is capable of metabolising gemcitabine into its inactive isoform.

Aim: This study aimed to investigate the relationship between gut microbiome composition and patient treatment response, as well as the effect of treatment on microbiome composition.

Method: This study involved 14 participants with locally advanced PDAC in the iLSTA trial. Stool samples were collected from participants at baseline and 12 weeks into treatment. Patient treatment response was determined through analysis of CA19-9 levels and RECIST analysis.

- Results:**
- 9 patients demonstrated strong treatment outcomes with high levels of Firmicutes (>80%) and low levels of Proteobacteria (<0.54%).
 - 5 patients demonstrated a reduced treatment response with low levels of Firmicutes (<44%) and high levels of Proteobacteria (>27%).
 - 9/14 showed an increase in Firmicutes (8 in C3).
 - 10/14 showed a decrease in Proteobacteria (9 in C3).
 - 8/14 showed both an increase in Firmicutes and a decrease in Proteobacteria (7 in C3).

Conclusion: This study revealed a trend towards shifting microbial composition and treatment response. High levels of Firmicutes and low levels of Proteobacteria were associated with improved treatment outcomes. Patients who received immunotherapy developed a more favourable microbiome composition during treatment.

Summary

- Notable early RECIST response rate in combination arms - 12/19 participants in C2 + C3 demonstrated a RECIST partial response (PR) to treatment, 7 of whom had a PR after 2 cycles.
- An encouraging signal of immune engagement was observed as 8/14 participants demonstrated an increase in TILs during treatment (7 in C3), and 4 participants showed nil or minimal residual tumour cells.
- Early results suggest a relationship between gut microbiome composition and response to anti-cancer treatment. Analysis is ongoing.
- Immune related toxicities have been observed in 7/17 participants who received immunotherapy. All were recognised as irAEs.
- 4 participants proceeded to surgery having previously been deemed inoperable.

Results: Tumour Markers

Cycle	Participant ID																									
	003-002	003-003	003-004	003-005	003-007	003-009	001-010	002-011	003-013	003-014	003-015	003-016	001-017	003-019	003-020	003-023	003-024	003-025	001-029	003-030	001-031	003-032	002-033			
Screening	163	251	8435	<2	30208	30	8572	42	1567	3620	409	3008	23	3	8	1347	3106	54	329	2651	<2	424	3268			
C1D1	179	251	8223	<2	31916	30	8572	33	627	3620	553	3390	23	8	8	1347	3813	6	401	2733	<2	424	3268			
C2D1	290	61	8675	1	7835	27	5649	19	169	1102	273	1786	15	6	13	252	2059	12	411	3727	3	254	2420			
C3D1	271	33	3635	<2	948	15	1685	16	55	653	245	919	11	8	7	62	492	16	72	2789	3	138	196			
C4D1	205	96	1625	4	137	12	411	19	28	1486	112	230	7	32	13	27	167	14	31	1425	8	88	38			
C5D1	495	187	497	4	244	12	346	19	28	2852	101	148	11	7	11	13	131	8	21	659	<2	64	-			
C6D1	-	1259	213	<2	220	14	541	15	17	4203	81	90	10	6	6	13	151	15	22	560	2	-	-			

Disclosure

- Sponsor: WARPINNE Inc.
- Contact: admin@warpinne.org.au
- Study Chair: Dr Andrew Dean.
- Trial Identifier: ACTRN12623000223639
- Participating site: St John of God Subiaco Hospital, 12 Salvado Rd, Subiaco WA 6008.
- DOI: Dr. Dean is on the board of WARPINNE Incorporated with no financial interests.
- Durvalumab provided by AstraZeneca.
- LSTA-1 provided by Lisata Therapeutics.

Phase 2a trial of certepetide with SoC in first-line GBM

Sponsor/Partner	<ul style="list-style-type: none">▪ Tartu University Hospital (Investigator initiated trial in Estonia, Latvia and Lithuania)▪ Lisata providing study drug and funding trial
Objective	<ul style="list-style-type: none">▪ Evaluate safety, tolerability, and therapeutic effect of certepetide in combination with standard-of-care (temozolomide) in patients with previously untreated Glioblastoma Multiforme
Design	<ul style="list-style-type: none">▪ Phase 2a proof-of-concept, double-blind, placebo-controlled, randomized study evaluating certepetide when added to standard of care (temozolomide) versus SoC and placebo in subjects with newly diagnosed Glioblastoma Multiforme (GBM)
Study Size	<ul style="list-style-type: none">▪ N=30 total (N=3 safety run-in, N=27 in main study schema)
Endpoints	<ul style="list-style-type: none">▪ Safety, tolerability▪ ORR, PFS, OS, disease control rate
Timing	<ul style="list-style-type: none">▪ Enrollment commenced December 2023

GBM Phase 2a trial design

Phase 2a proof-of-concept double-blind, placebo-controlled, randomized, proof-of-concept study evaluating certepetide when added to standard of care (temozolomide) versus temozolomide and matching certepetide placebo in subjects with newly diagnosed GBM

