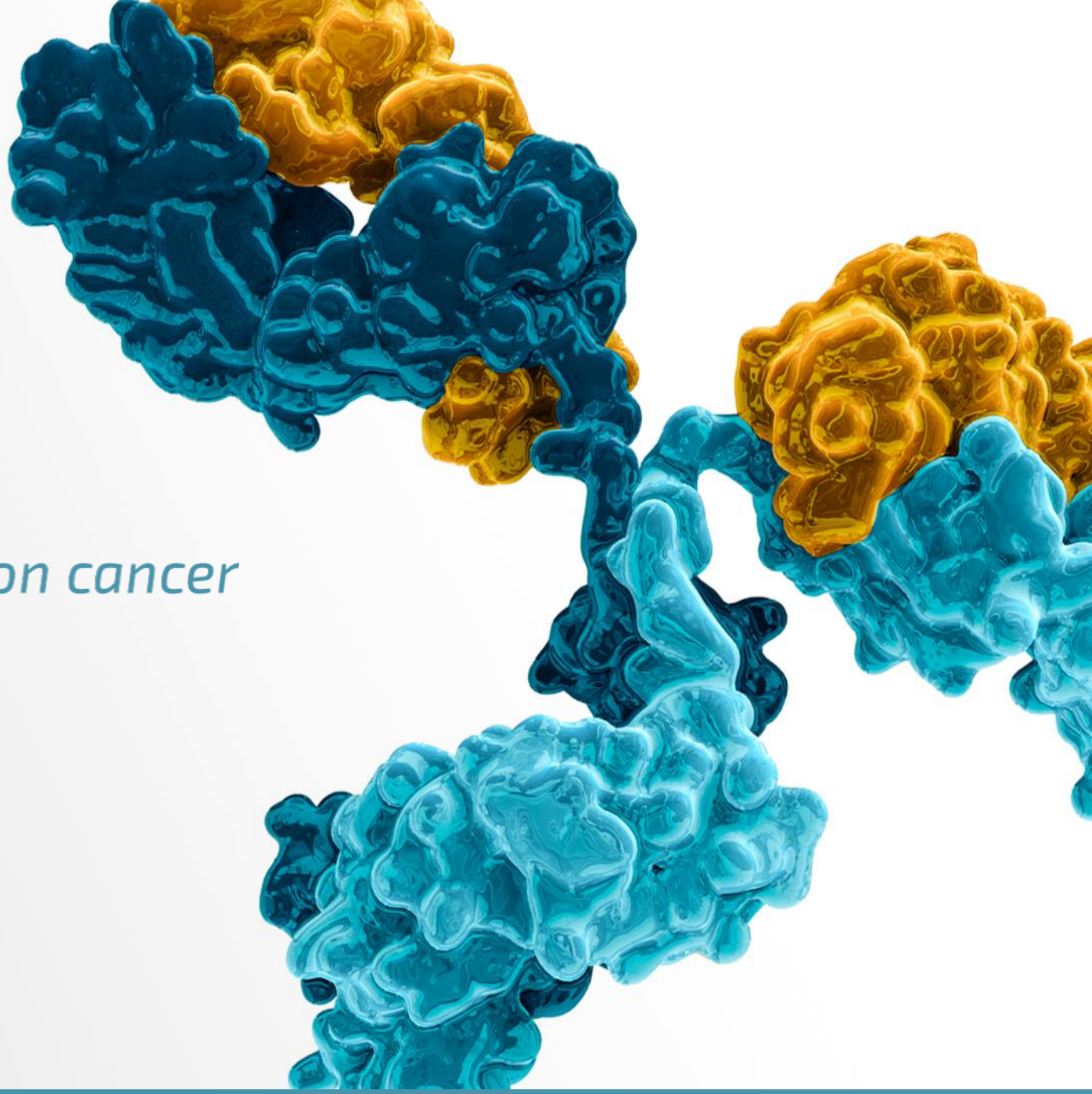
Merus *closing in on cancer*



Investor Call

6 June 2021

Disclaimer

This presentation (including any oral commentary that accompanies this presentation) contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. All statements contained in this presentation that do not relate to matters of historical fact should be considered forward-looking statements, including without limitation statements regarding the impact our Biclonics® and Triclonics® platforms can have on cancer, our product candidates' potential to treat certain types of tumors, the timing of regulatory filings, potential for registration, and the timing and anticipated data read outs or results from our clinical trials and our collaborations, our expectations surrounding our collaborations, our anticipated cash runway and potential milestones. These forward-looking statements are based on management's current expectations. These statements are neither promises nor guarantees, but involve known and unknown risks, uncertainties and other important factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements, including, but not limited to, the following: we have incurred significant losses, are not currently profitable and may never become profitable; our need for additional funding, which may not be available and which may require us to restrict out operations or require us to relinquish rights to our technologies or antibody candidates; potential delays in regulatory approval and impacts of the COVID-19 pandemic, which would impact our ability to commercialize our product candidates and affect our ability to generate revenue; the unproven approach to therapeutic intervention of our Biclonics®, and Triclonics® technology; our limited operating history; economic, political, regulatory and other risks involved with international operations; the lengthy and expensive process of clinical drug development, which has an uncertain outcome; the unpredictable nature of our early stage development efforts for marketable drugs; potential adverse public reaction to the use of cancer immunotherapies; potential delays in enrollment of patients, which could affect the receipt of necessary regulatory approvals; failure to obtain marketing approval internationally; failure to compete successfully against other drug companies; potential competition from other drug companies if we fail to obtain orphan drug designation or maintain orphan drug exclusivity for our products; our reliance on third parties to conduct our clinical trials and the potential for those third parties to not perform satisfactorily; our reliance on third parties to manufacture our product candidates, which may delay, prevent or impair our development and commercialization efforts; protection of our proprietary technology; our patents being found invalid or unenforceable; potential lawsuits for infringement of third-party intellectual property; our ability to attract and retain key personnel; managing our growth could result in difficulties.

These and other important factors discussed under the caption “Risk Factors” in our Quarterly Report on Form 10-Q for the period ended March 31, 2021 filed on May 6, 2021 with the Securities and Exchange Commission, or SEC, and our other reports filed with the SEC, could cause actual results to differ materially from those indicated by the forward-looking statements made in this presentation. Any such forward-looking statements represent management's estimates as of the date of this presentation. While we may elect to update such forward-looking statements at some point in the future, we disclaim any obligation to do so, even if subsequent events cause our views to change.

Agenda

1. Welcome & Introductions
2. Merus Platform & Pipeline
3. Zeno in NRG1 Fusion (NRG1+) Cancers
4. Summary
5. Q & A

Introductions

On the call today

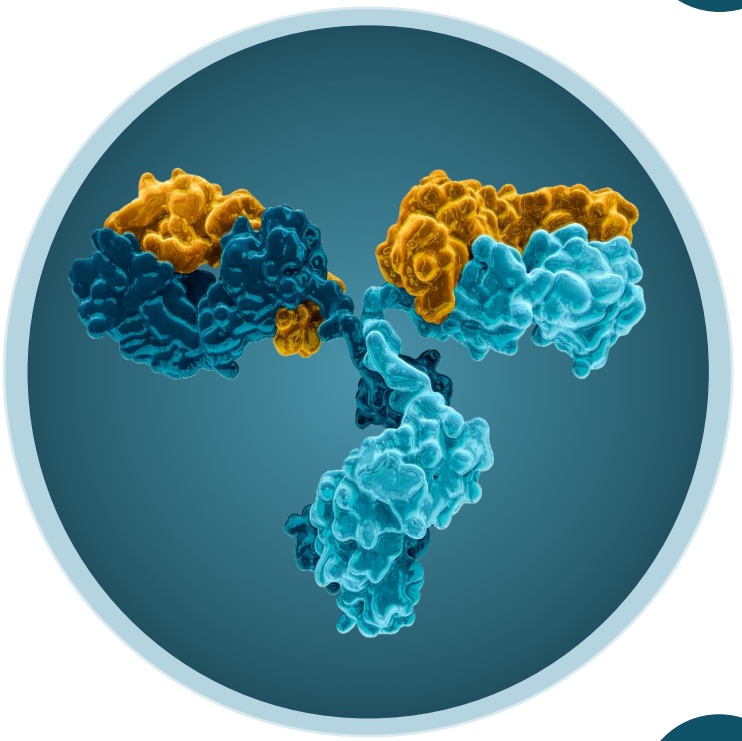
Bill Lundberg, MD, MBA
CHIEF EXECUTIVE OFFICER

Andrew Joe, MD
CHIEF MEDICAL OFFICER

Hui Liu, PhD
CHIEF BUSINESS OFFICER & HEAD, MERUS US

Kathleen Farren
INVESTOR RELATIONS

Merus Overview



Oncology-focused Company Developing Multispecific Antibody Therapies

Bispecific and trispecific cancer therapeutic candidates based on the human IgG format

Established Clinical Pipeline

Zeno showing positive interim results in pre-treated NRG1+ pancreatic cancer with encouraging activity across multiple NRG1+ cancer types and fusion partners, with well tolerated safety profile[1]

Near Term Trial Updates and Strong Cash Position at least into 2H 2024[2]

Multiple clinical milestones in 2021, including Zeno in NRG1 fusion cancers presented at ASCO 2021

Leading Multispecific Antibody (Multiclonics®) Platforms

Common light chain format permits broad high throughput Biclonics® and Triclonics® discovery

Strategic Collaborations to Unlock Platform Value

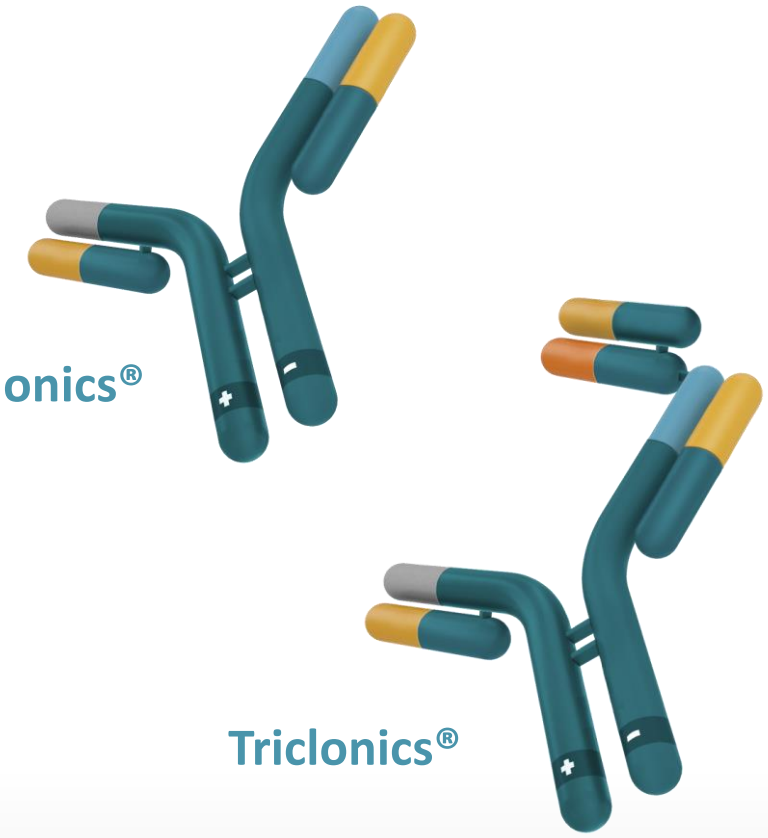
Multiple strategic collaborations and license agreements

[1] *Schram et al., ASCO 2021*

[2] *See May 6, 2021, 10-Q. Based on the Company's current operating plan, the Company expects that its existing cash and cash equivalents and marketable securities of $374.4 million as of March 31, 2021, will fund the Company's operations at least into the second half of 2024.*

Merus Multiclonics®

Bispecific and trispecific therapeutic candidates for cancer with broad application for human disease



Large-scale screening

- *To select the best Biclonics® and Triclonics® from up to 1,000s of candidates*

Fully human IgG format

- *Ease of manufacturing*
- *Low immunogenicity risk*
- *Predictable in vivo behavior*
- *Durable, consistent half life*
- *Potential for ADCC enhancement and Fc silencing*

Robust IP portfolio

Patents covering Multiclonics® technology, including

- *Common light chain antibody generation*
- *Dimerization by charge engineering*

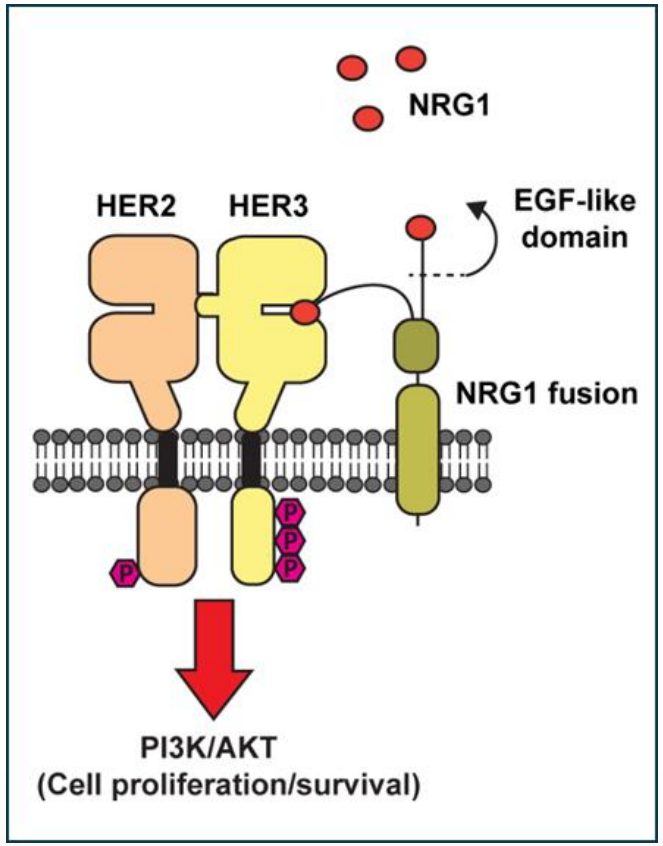
Merus Clinical Pipeline & Partnerships

PROGRAM	TARGETS	INDICATION(S)	PRECLINICAL	PHASE 1	PHASE 1/2	STATUS
Zenocutuzumab (Zeno) (MCLA-128)	HER2 x HER3	NRG1+ Pancreatic NRG1+ Lung NRG1+ Other solid tumors				Phase 1/2 trial ongoing ASCO Update June 4, 2021
MCLA-158	Lgr5 x EGFR	Solid tumors				Phase 1 Trial Ongoing
MCLA-145	CD137 x PD-L1	Solid tumors	Incyte (ex- U.S.)			Phase 1 Trial Ongoing Clinical update planned 2H21
MCLA-129	EGFR x c-MET	Solid tumors	BETTA (China)			Phase 1/2 Trial Ongoing

Major Collaborations: Incyte, LOXO ONCOLOGY at Lilly

NRG1 Fusions (NRG1+) Are Clinically Actionable Targets

Neuregulin 1 (NRG1) is a ligand that binds to HER3, promoting HER2/HER3 dimerization and activation of PI3K/AKT pathway



NRG1 fusions

are rare translocations in solid tumors, typically occurring in the absence of other cancer driver mutations

Numerous NRG1 fusion partners identified

- *CD74*
- *ATP1B1*
- *SDC4*
- *… and others*

NRG1+ cancers have a poor prognosis

- Previously treated pancreatic cancer has poor prognosis
- NRG1+ lung cancer reported with adverse prognostic features,[1] lower response rates[2] to standard therapy, and shorter overall survival[1,3] than non-NRG1+ cancers

[1] *Chang et al., Clin Cancer Research 2021*
[2] *Drilon et al., J Clin Oncol 2021*
[3] *Shin et al., Oncotarget 2016*

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Zeno DOCK & BLOCK® Mechanism Potently Blocks NRG1 fusions

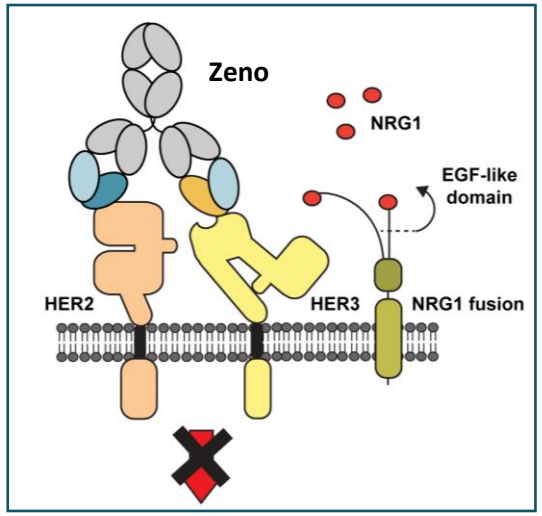
Zeno

Common light chain bispecific Biclonics® antibody

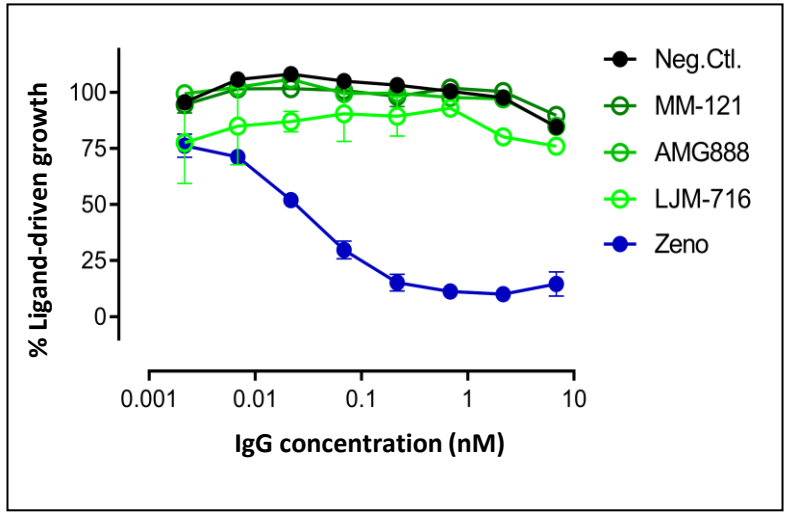
DOCKS
onto the more abundant HER2 protein leads to high local concentration on the cell surface

BLOCKS
- NRG1 fusion interaction with HER3
- HER3 from interacting with HER2
- Growth signals in cells

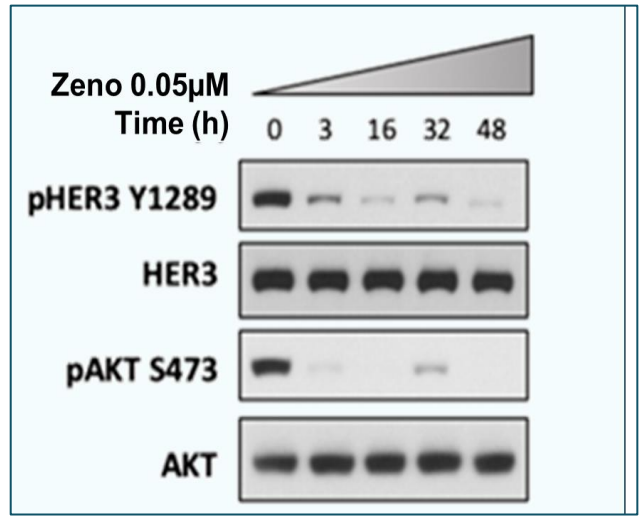
INDUCES
enhanced ADCC (Antibody-Dependent Cellular Cytotoxicity)



Uniquely Suited to Target NRG1+ Cancers



Growth of N87 cells with 12.5 nM HRG and a titration of the indicated antibodies.



Shown to Potently Inhibit Growth and NRG1:HER3 Signalling Preclinically

Geuijen et al. Cancer Cell. 2018;33:922-36;
Odintsov et al. AACR. 2021; abstract 956

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2021 ASCO ANNUAL MEETING

Efficacy and safety of zenocutuzumab in advanced pancreatic cancer and other solid tumors harboring NRG1 fusions

Alison M Schram

Memorial Sloan Kettering Cancer Center, NY, USA

04 June 2021

AM Schram, EM O'Reilly, GM O'Kane, K Goto, DW Kim, C Neuzillet, P Martin-Romano, M Duruisseaux, M Nagasaka, J Rodon, BA Weinberg, K Umemoto, SH I Ou, T Macarulla, C de la Fouchardiere, AK Joe, E Wasserman, V Stalbovskaya, J Ford, AE Drilon

Zeno NRG1+ Cancer Development Program

Phase 1/2 global, open-label clinical trial (eNRGy)
+
Early Access Program (EAP)

- PDAC
- NSCLC
- Other solid tumors

Inclusion criteria

- Locally advanced, unresectable or metastatic solid tumor
- *NRG1* gene fusion
- Previously treated with or unable to receive standard therapy
- ≥ 18 years-old
- ECOG PS ≤ 2

- Zenocutuzumab 750 mg IV Q2W until PD
- Tumor assessment Q8W

Survival follow-up (up to 1 year)

Endpoints and Population

- **Primary endpoint**: Overall response rate (ORR) using RECIST v1.1 per investigator
- **Secondary endpoints**: Duration of response, ORR per central review, safety
- **Primary analysis population:** opportunity for ≥1 post-baseline tumor assessment at the cutoff

Enrollment and Analysis

- **Data cutoff date**: 13-Apr-2021
- **Enrollment:** n = 61
- **Primary analysis population:** n = 47, *per investigator review*

  Excluded:
  - *10 patients recently enrolled (first dose < 8 weeks from data cutoff date)*
  - *2 patients without baseline scan within 5 weeks of first dose*
  - *1 patient with ECOG 3 received 2 doses on non-standard treatment interval*
  - *1 patient with concomitant KRAS mutation (excluded per SAP)*

from Schram et al., ASCO 2021

Demographics, Prior Treatment and Disposition

	PDAC (N=12)	NSCLC (N=25)	Basket (N=10)	Total (N=47)
Age, median (range)	47.5 (22 - 72)	58 (32 - 84)	63 (31 - 81)	56 (22 - 84)
Male / female, %	42 / 58	40 / 60	40 / 60	40 / 60
ECOG 0 / 1, %	58 / 42	40 / 60	50 / 50	47 / 53
Metastatic disease, N (%)	12 (100)	24 (96) *	10 (100)	46 (98)
N organs involved, median (range)	3 (1 - 8)	2 (0 - 7)	3 (1 - 5)	3 (0 - 8)
N lines prior systemic therapy, median (range)	2.5 (1 - 4)	2 (0 - 6)	3 (1 - 6)	2 (0 - 6)
Prior afatinib, N (%)	1 (8)	7 (28)	0	8 (17)
NRG1 testing technology, N (%)				
DNAseq	0	6 (24)	2 (20)	8 (17)
RNAseq	12 (100)	19 (76)	8 (80)	39 (83)
NRG1 fusion partners, N (%)				
ATP1B1	8 (67)	1 (4)	0	9 (19)
CD74	0	12 (48)	0	12 (26)
SLC3A2	0	7 (28)	1 (10)	8 (17)
Other**	4 (33)	5 (20)	9 (90)	18 (38)
Treatment ongoing, N (%)	7 (58)	6 (24)	6 (60)	19 (40)
Reason for discontinuation, N (%)				
Disease progression	4 (33)	17 (68)	4 (40)	25 (53)
Other***	1 (8)	2 (8)	0 (0)	3 (6)
Duration of exposure, months				
Median (range)	5.7 (1 - 19)	4.6 (1 - 12)	5.0 (2 - 10)	5.5 (1 - 19)

* 1 patient with locally advanced unresectable disease
** 13 additional distinct fusion partners
*** Investigator decision (2 patients), unrelated AE (1 patient)

from Schram et al., ASCO 2021

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Zeno is Efficacious in NRG1+ Pancreatic Cancer

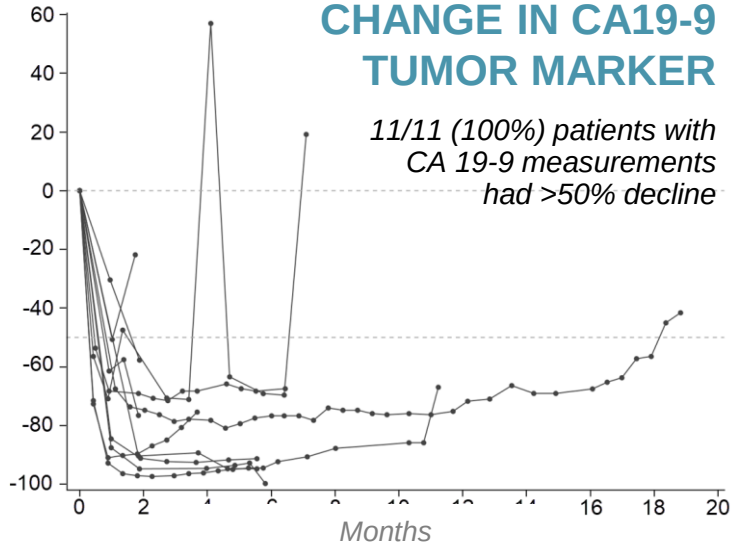
75% patients (9 of 12) with tumor reduction

Best Overall Response	N = 12
Confirmed PR	42% (5/12)
SD	50% (6/12)
PD	8% (1/12)

CHANGE IN TARGET LESIONS FROM BASELINE

CHANGE IN CA19-9 TUMOR MARKER

11/11 (100%) patients with CA 19-9 measurements had >50% decline



from Schram et al., ASCO 2021

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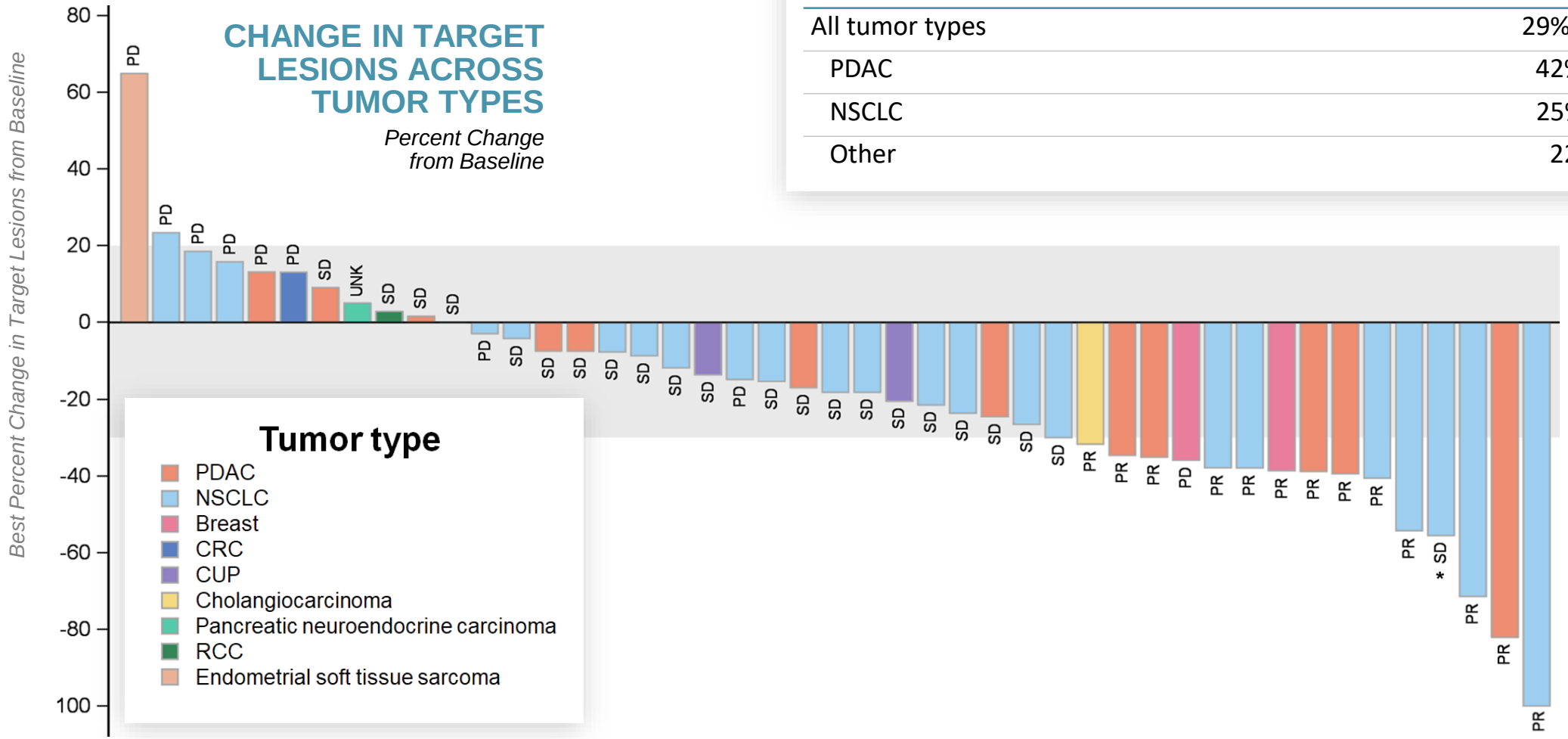
Zeno Efficacy Across Multiple NRG1+ Tumor Types

76% patients (34 out of 45) with tumor reduction

Confirmed ORR	
All tumor types	29% (13/45)*
PDAC	42% (5/12)
NSCLC	25% (6/24)*
Other	22% (2/9)



***One PR confirmed after the data cutoff date: ORR NSCLC 29% (7/24) and overall 31% (14/45)**

from Schram et al., ASCO 2021

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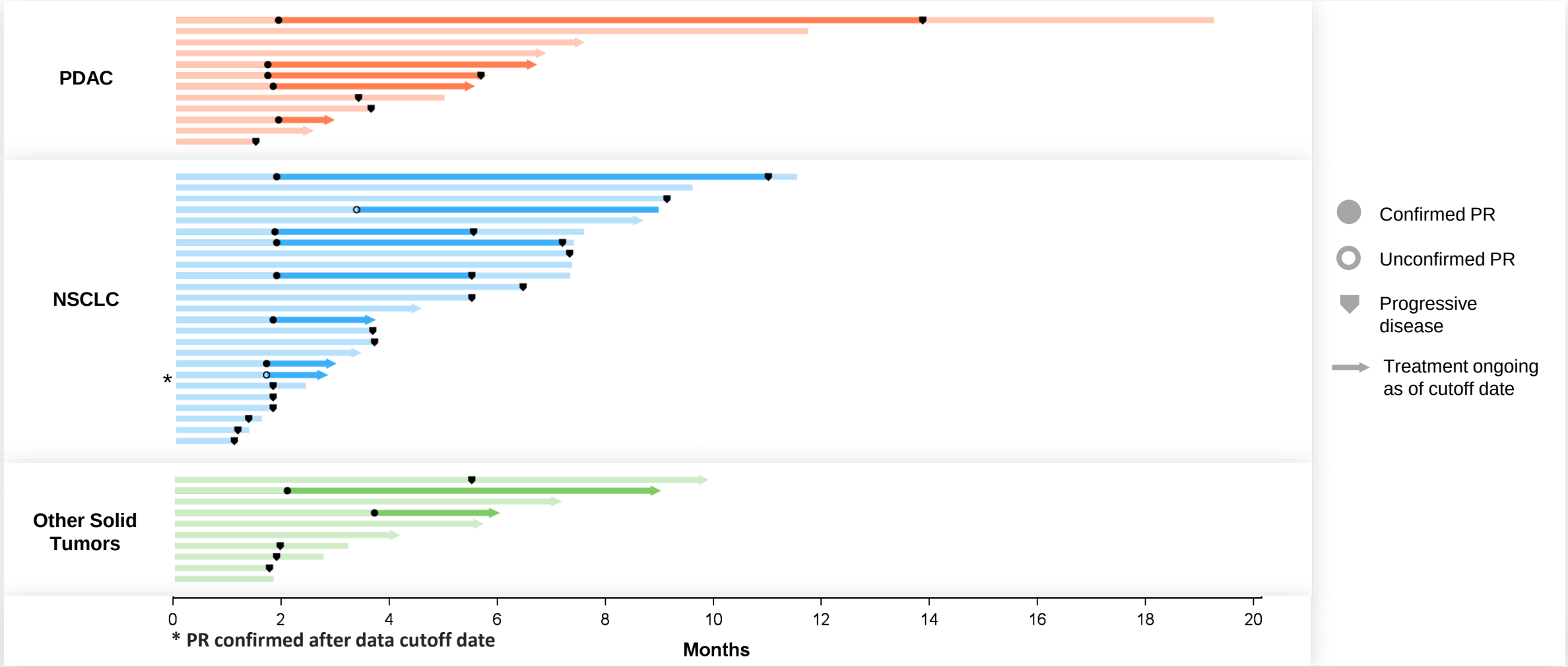
Time to Response & Duration of Exposure

40% patients still on treatment at cutoff



from Schram et al., ASCO 2021

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Zeno Observed to be Well Tolerated

PREFERRED TERM	AEs Irrespective of Causality >10%			Treatment-related AEs >10% and all ≥ Grade 3		
	ALL GRADES	GRADE 3-4	GRADE 5	ALL GRADES	GRADE 3-4*	GRADE 5
Patients with ≥1 AE	**94%**	**34%**	**4%**	**59%**	**3%**	**<1%**
Asthenia/fatigue	35%	4%	-	13%	<1%	-
Diarrhea	30%	1%	-	20%	-	-
Anemia	20%	4%	-	<1%	-	-
Nausea	18%	-	-	10%	-	-
Dyspnea	13%	5%	-	1%	<1%	-
Vomiting	13%	<1%	-	3%	-	-
Abdominal pain	11%	<1%	-	2%	-	-
Decreased appetite	11%	<1%	-	4%	-	-
Constipation	10%	-	-	1%	-	-
Hypomagnesaemia	10%	<1%	-	<1%	-	-
Infusion-related reaction	7%	1%	-	7%	1%	-
Myalgia	4%	<1%	-	3%	<1%	-
Hypersensitivity**	3%	-	-	3%	-	<1%
Cough	8%	<1%	-	1%	<1%	-
Hypertension	<1%	<1%	-	<1%	<1%	-
Hypoxia	<1%	<1%	-	<1%	<1%	-
Neutropenia	<1%	<1%	-	<1%	<1%	-

* No Grade 4 treatment-related AEs reported

** One event of Grade 5 hypersensitivity (previously reported), Alsina et al. ESMO. 2018 #664P

Data cutoff date 12-Jan-2021

Safety profile of 157 patients across multiple indications treated with Zeno monotherapy at the recommended phase 2 dose

- *Majority of AE were grade 1-2*
- *Absence of severe GI toxicity, skin toxicities and clinical cardiotoxicity*

from Schram et al., ASCO 2021

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Zeno in NRG1 + Cancers: Conclusions

Potential first and best in class for this new clinically actionable target of NRG1+ in multiple cancers

Zeno addresses important unmet medical needs

- There are no approved NRG1-directed therapies for cancer
- Previously treated pancreatic cancer has poor prognosis
- NRG1+ lung cancer reported with adverse prognostic features,[1] lower response rates[2] to standard therapy, and shorter overall survival[1,3] than non-NRG1+ cancers

Promising efficacy and safety in multiple NRG1+ cancers

- ORR in previously treated NRG1+ Pancreatic Cancer (42%), NSCLC (25%)[4] and overall (29%)[4]
- Tumor shrinkage in 76% of patients
- DOR ranging from 1+ to ~12 months
- Well tolerated, with most AEs of mild or moderate severity; low incidence (7%) of infusion reactions

Opportunity for patients

We believe the meaningful efficacy and safety demonstrated to date may support multiple potential paths to registration

[1] *Chang et al., Clin Cancer Research 2021*
[2] *Drilon et al., J Clin Oncol 2021*
[3] *Shin et al., Oncotarget 2016*
[4] *One PR confirmed after the data cutoff date: ORR NSCLC 29% (7/24) and overall 31% (14/45)*

Zeno: Continued Progress in NRG1+ Cancers

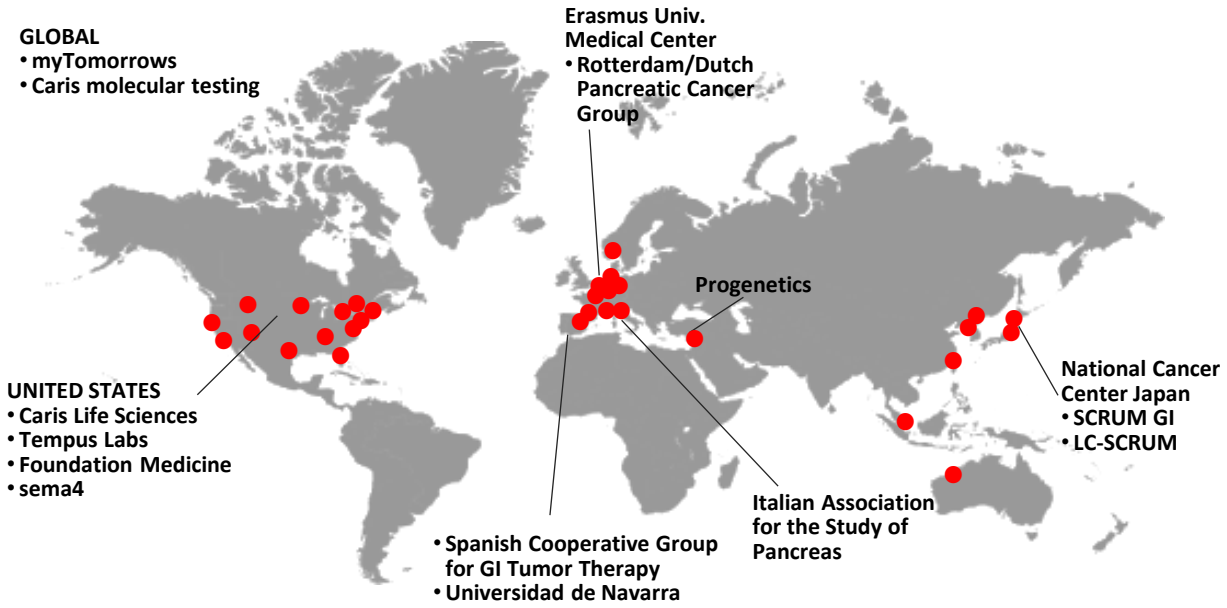
More Than 70 Patients Treated[1]

- *Including more than 60 patients* since AACR/NCI/EORTC "Triple Meeting" in October 2019
- *More than 40 eNRGy clinical trial sites* across Asia, North America, Europe and Middle East
- *"Just in Time" activation* of eNRGy clinical trial sites available

Increasing Awareness & Access

- *Global patient identification* efforts through more than 10 different industry and academic collaborations supporting molecular screening and patient identification
- *Early access program (EAP)* for patients not able to travel or enroll on the eNRGy clinical trial - https://merus.nl/eap

Global Effort to Identify & Recruit Patients



• More than 40 clinical trial sites worldwide • 1-833-NRG-1234 • www.nrg1.com

[1] *As of June 4, 2021*

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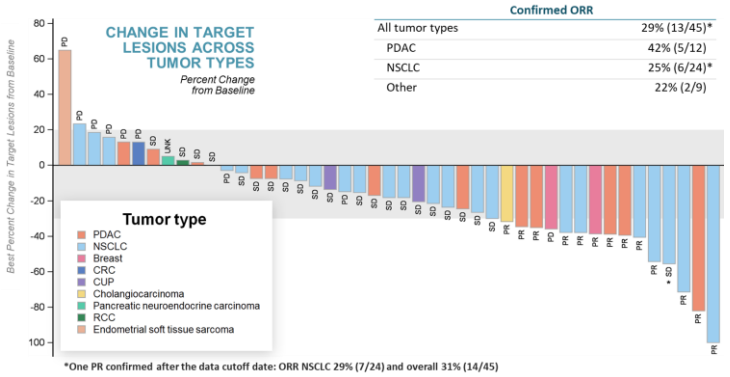
Accelerating Progress Towards Potential Registration

Delivering on the Opportunity for Zeno in NRG1+ Cancers

Potential new treatment option

for patients with NRG1+ cancers



Regulatory milestones

FDA Orphan Designation for pancreatic cancer and Fast Track Designation for metastatic NRG1 fusion cancers that have progressed on standard of care

Additional clinical and regulatory program updates by 1H2022, including:

- updated enrollment, efficacy, durability and safety data;
- regulatory strategy and path to registration

Merus

Q&A

Bill Lundberg, MD, MBA
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Hui Liu, PhD
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THANK YOU

Merus

closing in on cancer