The Promise of Potent and Durable Immune Responses

March 2024

Gritstone bio, Inc.

ABOUT GRITSTONE

Developing Next-Generation Vaccines for Oncology and Infectious Disease

Platforms Drive More Potent and Durable Immunity

Best-in-class antigen prediction

Proprietary, next-gen vectors drive response

Fully-integrated Biomanufacturing

Potential best-in-class neoantigen-based personalized cancer vaccine program (GRANITE) in randomized Phase 2/3 study for MSS-CRC

Self-amplifying mRNA (samRNA) platform has distinct potential benefits versus currently-approved infectious disease vaccines; preparing for Phase 2b randomized head-to-head study in COVID-19

Upcoming data readouts could further de-risk clinical platforms and potentially enable expansion into additional disease types

Recent & Anticipated Upcoming Milestones

12-month data from COVID-19 Phase 1 studies (Oct 2023)

Preliminary Phase 2 data from Ph 2/3 GRANITE-1L study (1Q 2024)

Interim Phase 2 data from Ph 2/3 GRANITE-1L study (3Q 2024)

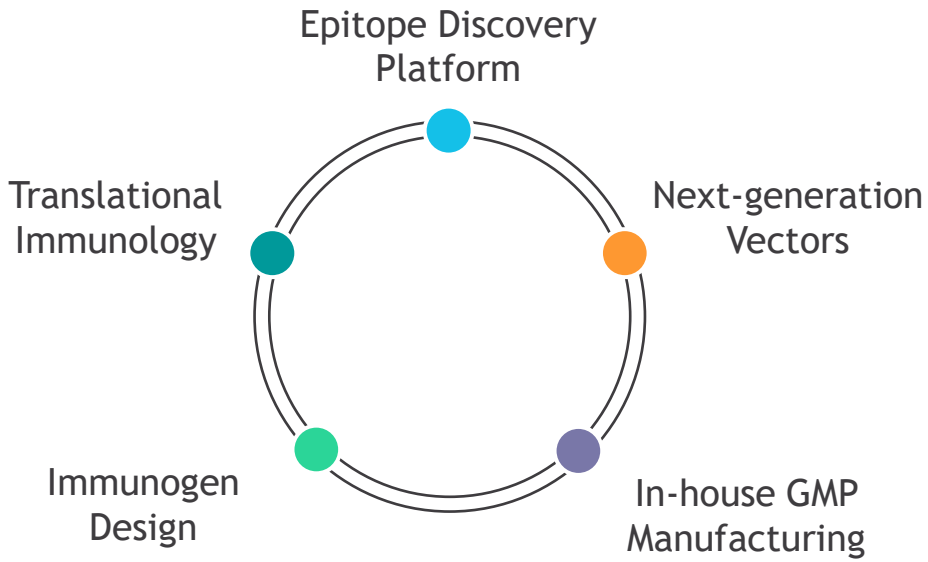
Cash Position as of December 31, 2023*	$86.9 million

**cash, cash equivalents, marketable securities, and restricted cash*

OUR CAPABILITIES

Pursuing More Potent and Durable Immune Responses

Capabilities uniquely designed to address current challenges in cancer and infectious disease



Proprietary artificial intelligence platform (EDGE™) to identify critical T cell targets

Next-gen vectors, ChAd and self-amplifying mRNA*, to drive potent and durable immune responses suited to the clinical context

In-house GMP manufacturing enables personalized and off-the-shelf products (clinical stage and scale-up)

Immunogen design is key component of novel vaccine formats – must be studied in clinical trials

Bench-to-bedside-to-bench: innovative product development pushes scientific boundaries

*Gritstone was the first to introduce self-amplifying mRNA (samRNA) + LNP into clinical trials (2018)

OUR VACCINE PIPELINE

EDGE™ Prime-boost samRNA

Disease Area	Target/Approach	Indication	Preclinical	Phase 1	Phase 2	Anticipated Milestones	Collaborator
Oncology	Individualized Neoantigens	First-line microsatellite-stable colorectal cancer (MSS-CRC)		GRANITE		*1Q2024 Add'l Randomized Ph 2 Data*	
	Shared Neoantigens	KRAS^{mut}-driven tumor types		SLATE		*2024 Initiate Randomized Ph 2**	
	Shared Neoantigens	Solid tumor	SLATE			*Submit IND*	

Disease Area	Target/Approach	Indication	Preclinical	Phase 1	Phase 2	Anticipated Milestones	Collaborator
ID Prophylaxis	Spike + T Cell Epitopes	SARS-CoV-2 (COVID-19)		CORAL		*Fall 2024 Initiate Randomized Ph 2b*	BARDA
	Undisclosed	Multi-respiratory				*Undisclosed*	
	Undisclosed	Influenza				*Undisclosed*	

Disease Area	Target/Approach	Indication	Preclinical	Phase 1	Phase 2	Anticipated Milestones	Collaborator
ID Therapeutic	HIV Eradication	HIV		HIV		*Potential Opt-in Program*	GILEAD
	HPV Eradication	HPV				*Undisclosed*	BILL & MELINDA GATES foundation

**Randomized trial in newly-diagnosed metastatic patients*

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GRANITE, SLATE and CORAL are clinical program names

Oncology

Redefining Survival in Solid Tumors

Therapeutic

Neoantigen Cancer Vaccines

Personalized Cancer Vaccines are Ushering in a New Era of Immunotherapy

Potential proof-of-concept for neoantigen-based PCVs is growing, with multiple randomized studies ongoing

- Genomic Sequencing
- Epitope Identification
- Immunogen Payloads
- Delivery Vectors
- "n of 1" Manufacturing

	gritstone bio[1]	BIONTECH	moderna
Tumor Type	**MSS-CRC (1L)** *Cold*	Melanoma (1L) *Hot*	Melanoma (Adj) *Hot*
Neoantigen Training Data	**Proprietary**	Proprietary	Proprietary
Regimen/Vector	**ChAd prime + samRNA boosts** (heterologous, intramuscular)	mRNA[2] prime + boosts (homologous, intravenous)	mRNA[2] prime + boosts (homologous, intramuscular)
CD8+ T cell Priming[3]	**++**[4]	+	+
Data	**Preliminary randomized Phase 2 data in 1Q24 (a Phase 2/3 study)**	Randomized Phase 2 data expected in 2024	✓ Recurrence-free survival benefit (HR=0.56)

[1]*GRTS vaccine candidates have not been studied head-to-head with those listed.*

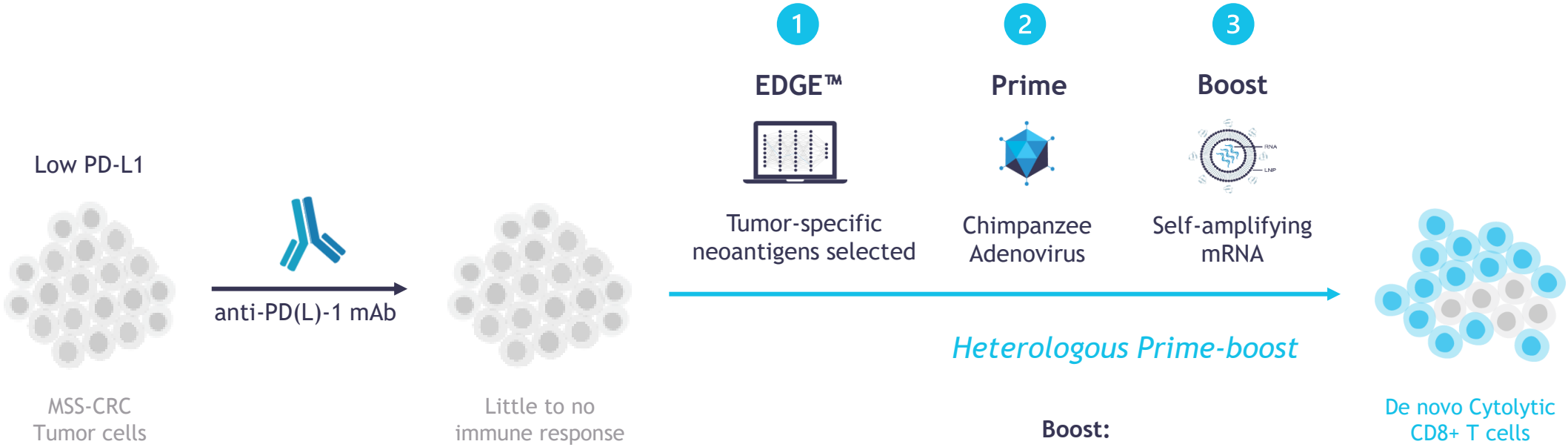
[2]*BioNtech uses optimized Uridine mRNA. Moderna uses Modified Uridine mRNA.*

[3]*Semi-quantitative assessment of strength and breadth of human T cell immune response to neoantigen vaccine based on cross-study comparisons of published data*

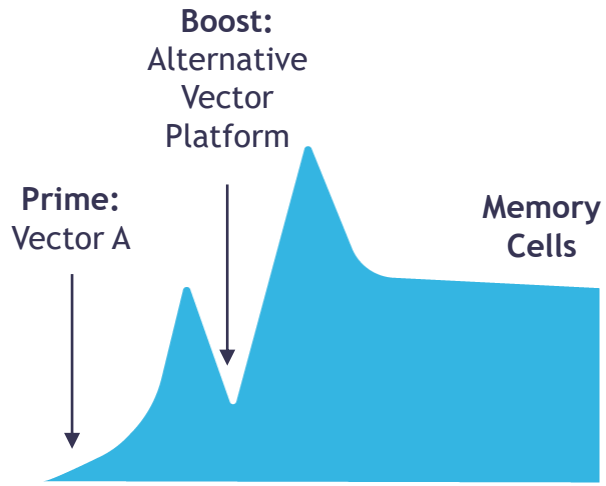
[4]*CD8 T cell priming: Miao et al., Molecular Cancer 20, 41 (2021)*

Gritstone's Approach: Induce CD8+ T cells Against "Cold" Solid Tumors

Antigen selection + prime-boost regimen may be effective in tumors unresponsive to anti-PD(L)-1 therapy



Neoantigens delivered via synergistic vectors to enhance potency and durability



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GRANITE: Advanced to Randomized Phase 2/3 with Registrational Intent

Positive results in advanced solid tumors (Phase 1/2) provided basis for advancement to first-line MSS-CRC

Phase 1/2 Results
*Published in Nature Medicine**

Indication: Advanced solid tumors (incl. MSS-CRC)

Regimen: GRANITE + nivolumab + ipilimumab

Results:

- Well-tolerated
- Extended survival (22+ months in molecular responders, mOS not reached yet)
- Robust, broad and persistent induction of CD8+ T cells against targeted neoantigens
- 55% (6/11) molecular response by ctDNA reduction with visible lesion shrinkage
- No dose-limiting toxicities (DLTs)

Interim results were published in Nature Medicine in Aug 2022

*Palmer, C.D., Rappaport, A.R., Davis, M.J. et al. Individualized, heterologous chimpanzee adenovirus and self-amplifying mRNA neoantigen vaccine for advanced metastatic solid tumors: phase 1 trial interim results. Nat Med **28**, 1619–1629 (2022).*

Randomized Phase 2/3 Study

Indication: 1L maintenance in MSS-CRC

Regimen: GRANITE + anti PD-L1+ Fluoropyrimidine + bevacizumab

Phase 2 Endpoints: ctDNA (primary), radiological (PFS, iPFS) and overall survival

Clinical Strategy: Use MSS-CRC as POC to pursue multiple solid tumor types (both “cold” and “hot” tumors)

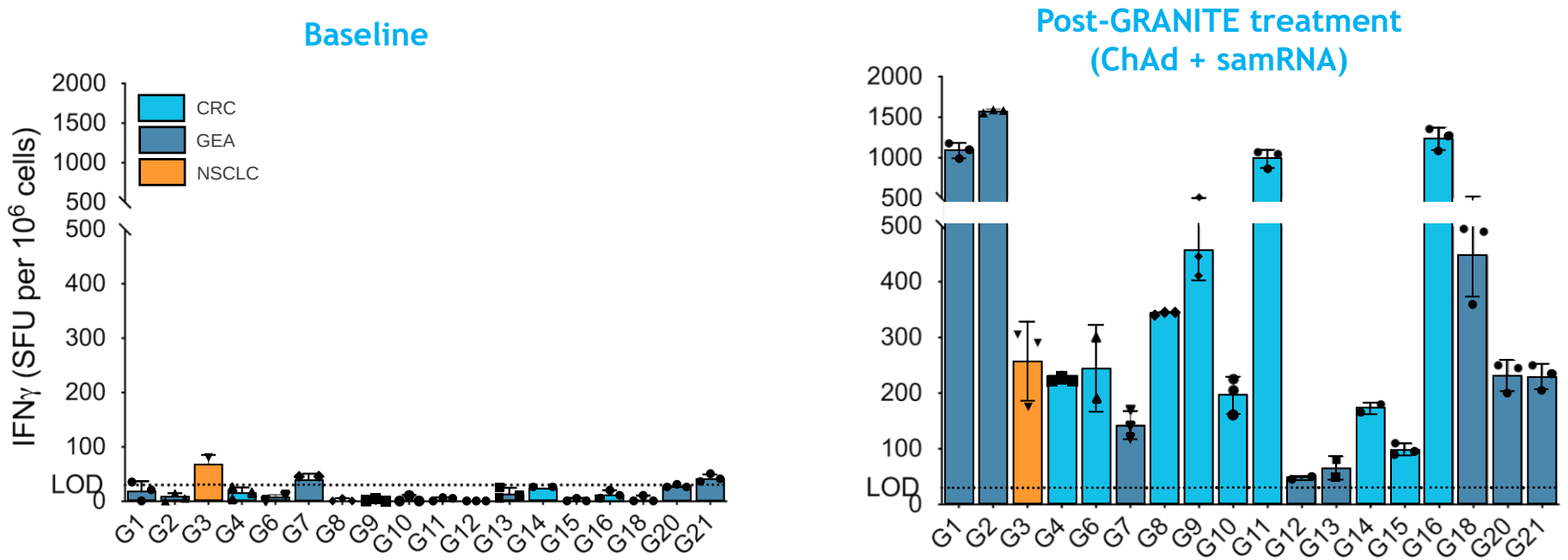
Milestones:

- Received fast-track designation in MSS-CRC (in 2018)
- Enrollment completed in 3Q 2023
- Preliminary Phase 2 data expected in 1Q 2024

Phase 1/2 Results: Consistent Induction of Neoantigen-specific T cells

Lack of T cells in patients prior to treatment reflective of poor intrinsic immunogenicity of tumors

T cells as measured by *ex vivo* ELISpot

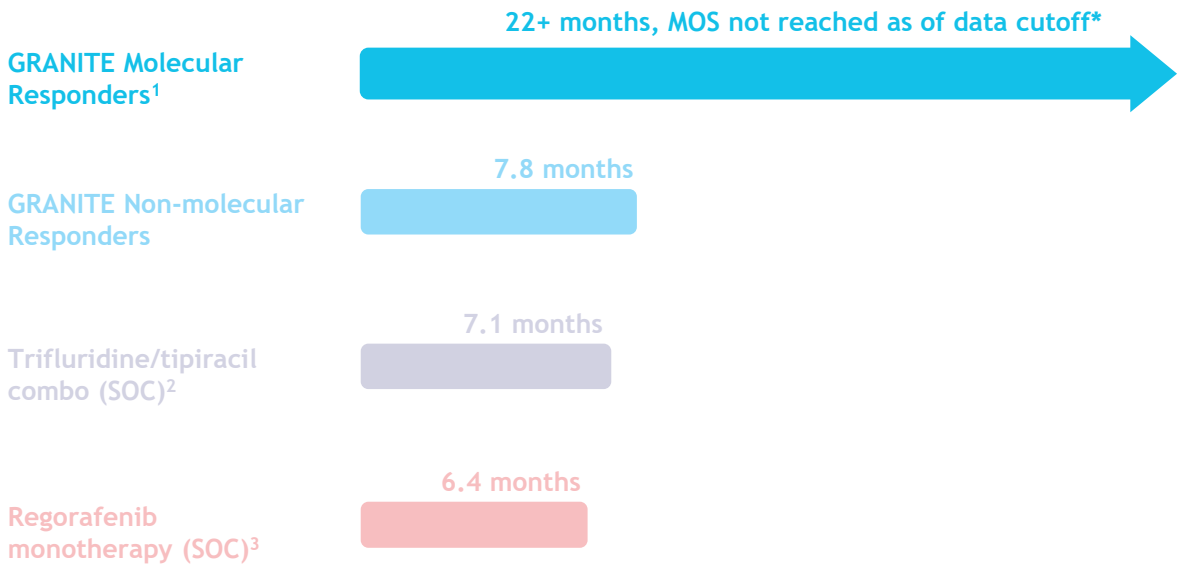


G5: no samples available (patient died); data represent peak responses post-GRANITE treatment

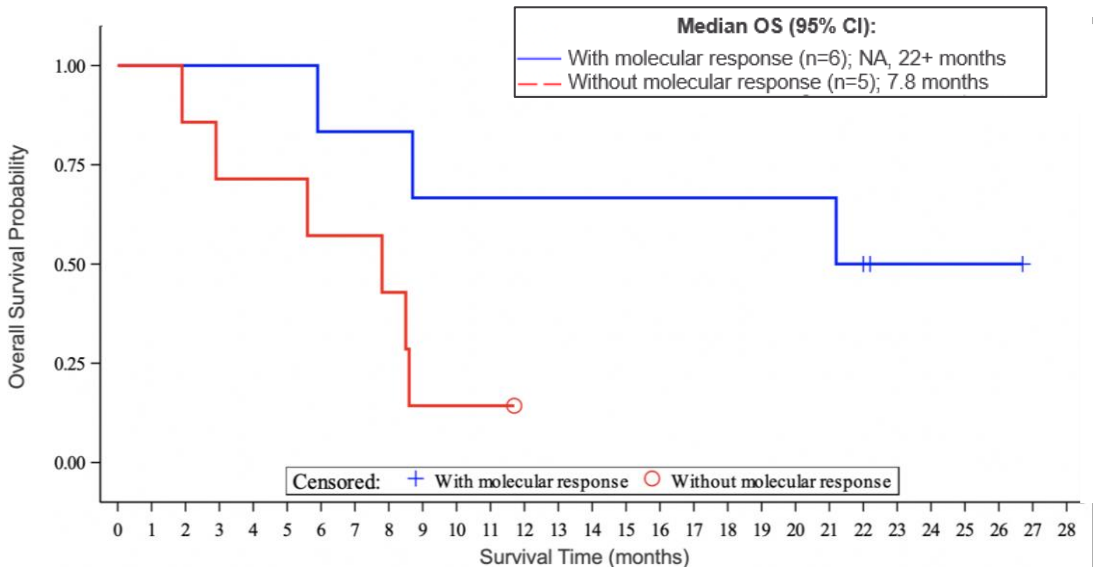
Phase 1/2 Results: Median Overall Survival in MR Exceeds 22 Months*

FDA has reviewed registrational Phase 2/3 study design with molecular response (MR) as Phase 2 primary endpoint; Phase 3 primary efficacy endpoint TBD

Median Overall Survival in 3L MSS-CRC**



Overall Survival from GRANITE Phase 1/2



[1] *13 MSS-CRC patients treated; 2 did not have samples for analysis of ctDNA changes relative to baseline and included in without MR group; 6 of 11 were molecular responders; Molecular responders defined as patients with ≥30% reduction in ctDNA*

[2] *Mayer et al., The New England Journal of Medicine 372, 1909-1919 (2015)*

[3] *Grothey et al., The Lancet 381, 303-312 (2013)*

**Data cut-off 31-Aug-2022*

***GRTS vaccine candidates have not been studied head-to-head with those listed.*

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GRANITE: Study Design for Randomized Phase 2/3 in 1L MSS-CRC

Study Population	Phase	Primary Endpoint	N
1L MSS-CRC	2	Molecular Response (change in ctDNA)	100[1]
	3	TBD (to be determined following prelim Phase 2 data)	TBD

[1] *Study expanded in May 2023 (from n = 80).*

Induction Chemo
All patients

~5 months
Oxaliplatin
(with or without irinotecan)
+
5-FU and bevacizumab

Maintenace treatment stage begins

Control Arm
Continue 5-FU and bevacizumab only

GRANITE
Continue 5-FU and bevacizumab + GRANITE + ipilimumab (x2 doses) + atezolizumab (monthly)

GRANITE = ChAd (Chimpanzee Adenovirus) + self-amplifying mRNA (samRNA)

Atezolizumab previously demonstrated to provide no additional benefit in this patient population (MODUL study[2])

GRANITE regimen ~12 months

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[2] *MODUL study: https://www.esmoopen.com/article/S2059-7029(22)00187-9/fulltext*

Positive Phase 2 Results Could Validate Platform and Support Phase 3 in MSS-CRC

Therapeutic Value Proposition

- Induce existing and de novo T cell response
- Make “cold” tumors actionable via neoantigens
- Personalize treatment to maximize efficacy

GRANITE

personalized cancer vaccine program encoding patient-specific neoantigens

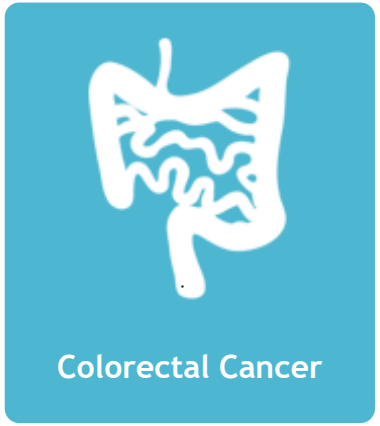
High Unmet Need in Colorectal Cancer*

2nd

leading cause of U.S. cancer deaths in men and women combined

~53,000

deaths expected to occur in 2023*

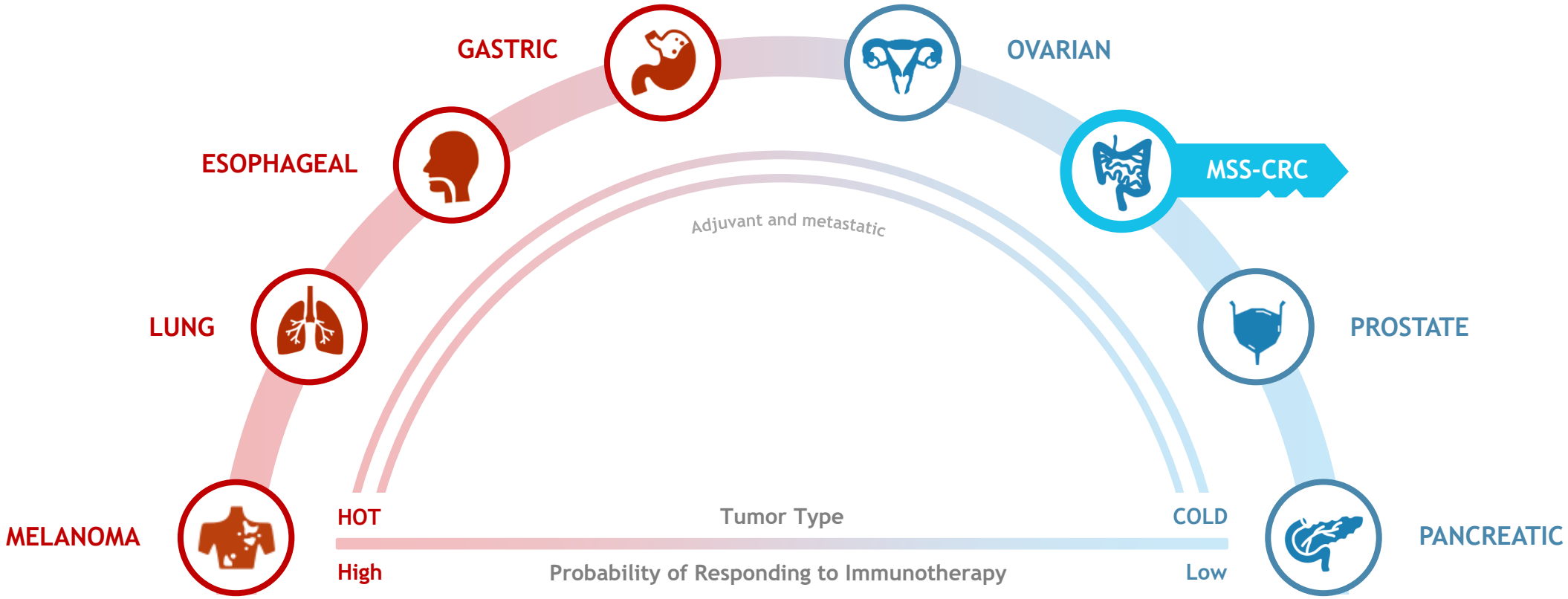


*MSS-CRC is estimated to be 95%+ of all CRC**

*Colorectal cancer statistics per American Cancer Society 2023 Estimates

Positive Phase 2 Results Could Also Unlock Additional Tumor Types

Success in MSS-CRC could de-risk platform and support expansion to both "cold" and "hot" tumors



SLATE: Off-the-Shelf Neoantigen Vaccines for Solid Tumors

Shared neoantigen program utilizing same antigen selection and vectors as GRANITE

1

Neoantigen Selection

Relevant

Shared neoantigens identified by proprietary AI platform (EDGE™)

2

Heterologous Prime-Boost

ChAd + samRNA

delivery vectors synergize to enhance potency and durability of immunogen payload

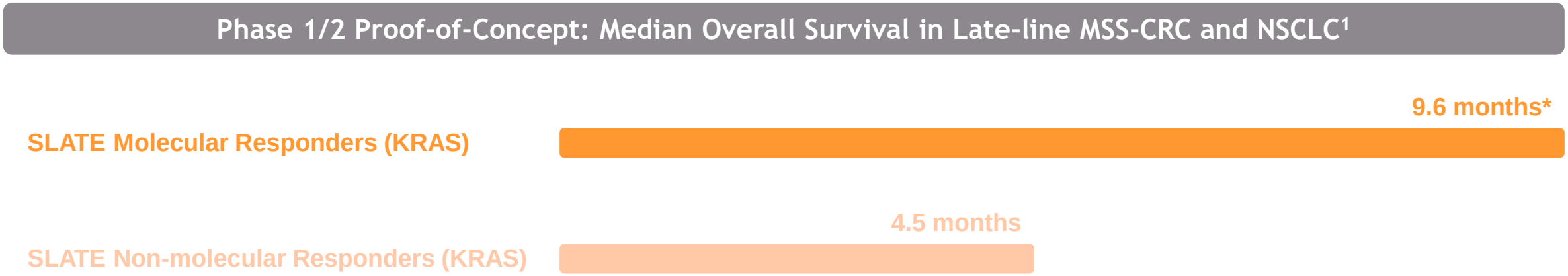
3

Solid Tumor Application

Multiple

tumor types addressed via off-the-shelf cassette and streamlined manufacturing

Molecular Response Associated with Prolonged OS in MSS-CRC and NSCLC



1. 39% molecular response rate* and favorable safety profile of SLATE reinforces therapeutic potential of neoantigen approach

2. Phase 2 data further supports the correlation seen between molecular response and overall survival in late-line solid tumors

3. Phase 2 data in late-line patients supports moving KRAS-directed candidate into earlier lines of treatment

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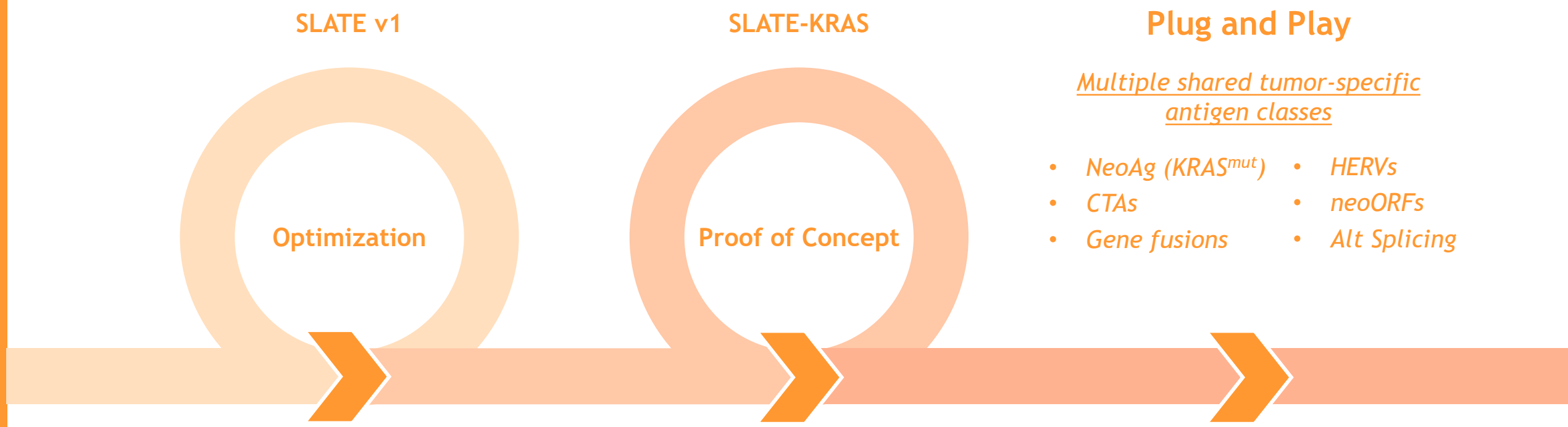
[1] *Data collected from Phase 1/2 SLATE study (NCT03953235)*

[2] *7 of 18 subjects (MSS-CRC and NSCLC) demonstrated molecular response.*

SLATE: Serving Solid Tumor Patients via Shared Neoantigen Immunotherapy



Refined payload of v1 cassette after initial studies indicated immunodominance of non-KRAS antigens

KRAS-dedicated v2 cassette demonstrated Phase 2 proof of concept in MSS-CRC and NSCLC patients

Optimized and validated SLATE cassette now ready for "plug and play" application across solid tumor indications

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CTAs - cancer testis antigens ; HERVs - human endogenous retroviruses; neoORFs - noncanonical open reading frames

Infectious Disease

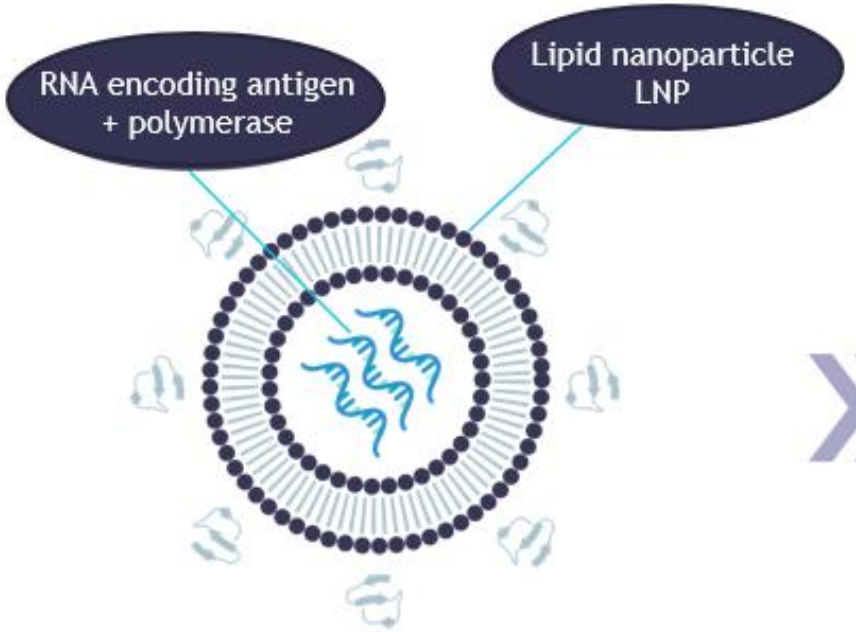
Leaving no strain behind

Prophylactic

Self-amplifying mRNA Vaccines

Self-amplifying mRNA: Addressing Current Vaccine Limitations for ID

Well-tolerated, scalable platform technology that offers potential advantages over first-generation mRNA



Next Generation mRNA Platform

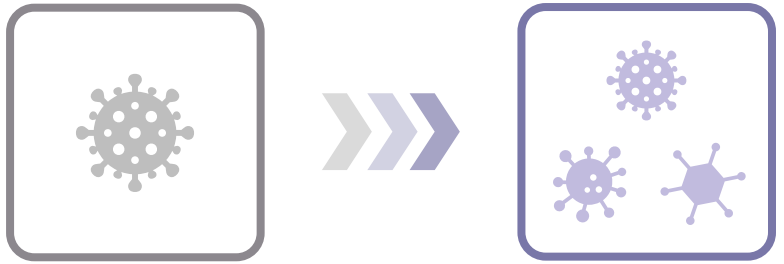
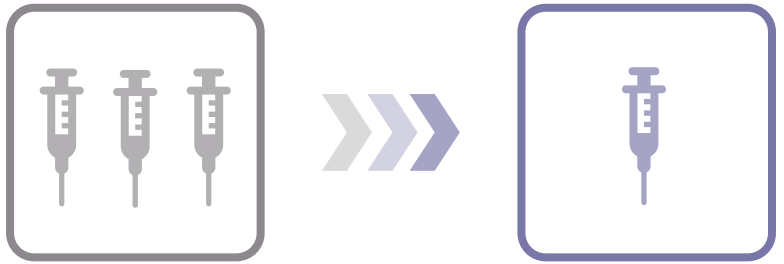
Once inside the cell, the RNA replicates, leading to high and durable antigen expression.

Potential Benefits of samRNA Over Currently-Approved Vaccines:

Durable antibody responses	Broad T cell responses	Dose-sparing regimens

Gritstone's Differentiated Approach to COVID-19

Novel "Spike-plus" approach designed to drive durable and broad immunity

1st Generation mRNA (Spikevax, Comirnaty)		Gritstone self-amplifying mRNA (CORAL)
nAbs Against Spike Only That Wane After 4-6 Months		Durable nAbs Against Spike; T cells Against Conserved Viral Targets
Spike-specific Immunity Subject to Viral Mutation and Immune Evasion		Broad T cell Immunity May Enable Cross-Variant Protection
High-dose, Repeat Boosts		Low Dose, Durable Response

BARDA: Preparing for Phase 2b Head-to-Head Study in COVID-19

Contract[1] valued at up to $433 million enables randomized study evaluating Gritstone's samRNA vaccine with a currently-approved vaccine

Collaborator	N	Randomization	Study Population
	~10,000*	1:1	Previously Vaccinated Healthy Volunteers

Study Arms (Control vs Treatment)

Gritstone samRNA Vaccine **vs** FDA-approved COVID-19 Vaccine

* *Estimated study population size; US only*

[1] *"The BARDA Contract" consists of funding for (1) a base period of $10 million for performance of certain milestones such as preparation of protocol synopsis and submission of an investigational new drug application and (2) following successful completion of the base period, approximately $423 million of additional BARDA funding for two stages gated at BARDA's discretion in support of the clinical trial execution and additional analyses for the clinical trial.*

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Phase 1 Studies Providing Proof-of-Concept for Wide Scale Use

Results to date demonstrate potential for broad applicability across patient populations and settings

Study	Population	Vaccine	n	Data to Date
CORAL – BOOST *(United Kingdom)*	Previously-vaccinated healthy volunteers (4 of 6 cohorts ≥60 years)	samRNA boost or samRNA/samRNA	40*	✓ Robust & durable nAbs ✓ T cell induction ✓ Dose sparing potential
CORAL – CEPI *(S. Africa)*	Unvaccinated (virus-naïve or convalescent) healthy volunteers, including people living with HIV	samRNA boost or samRNA/samRNA	342**	✓ Robust & durable nAbs ✓ T cell induction ✓ Dose sparing potential
CORAL – NIH *(United States)*	Previously-vaccinated healthy volunteers	ChAd/samRNA or samRNA/samRNA	150	✓ Robust & durable nAbs ✓ T cell induction ✓ Dose sparing potential

***Trial supported by funding from CEPI. Fully enrolled as of February 2023.*
**Original study included n = 20. Gritstone expanded study in January 2022.*

CORAL Phase 1 Collaborators

CEPI

NIH National Institute of Allergy and Infectious Diseases

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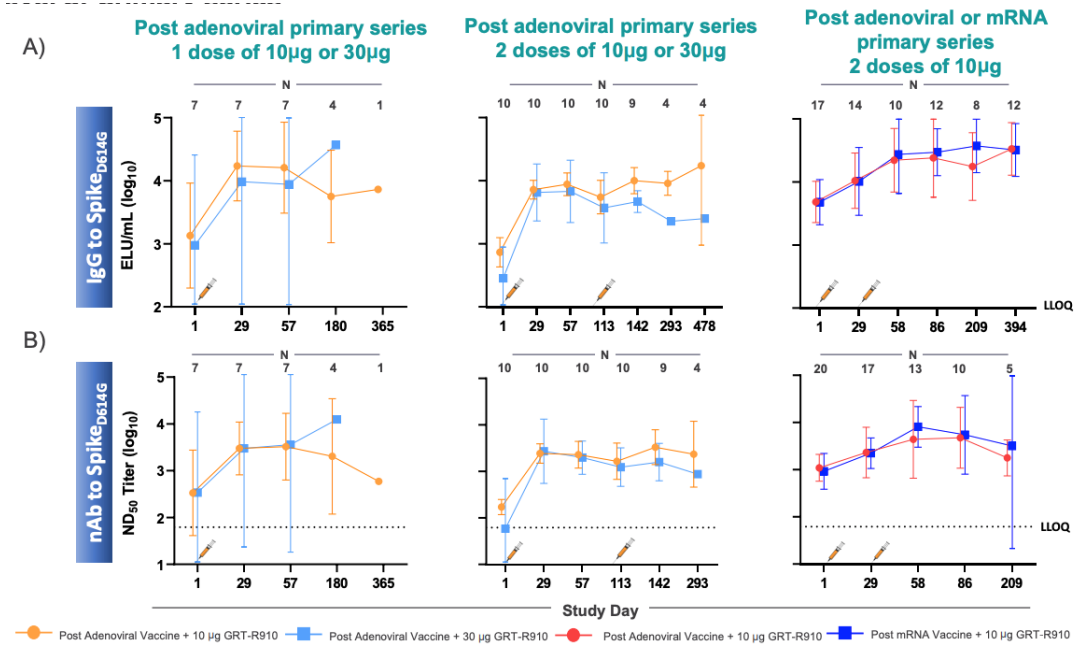
Phase 1 Results Highlight Differentiated Long-lasting Antibody Response

Potent neutralizing antibody (nAb) levels sustained through 12 months across global patient populations

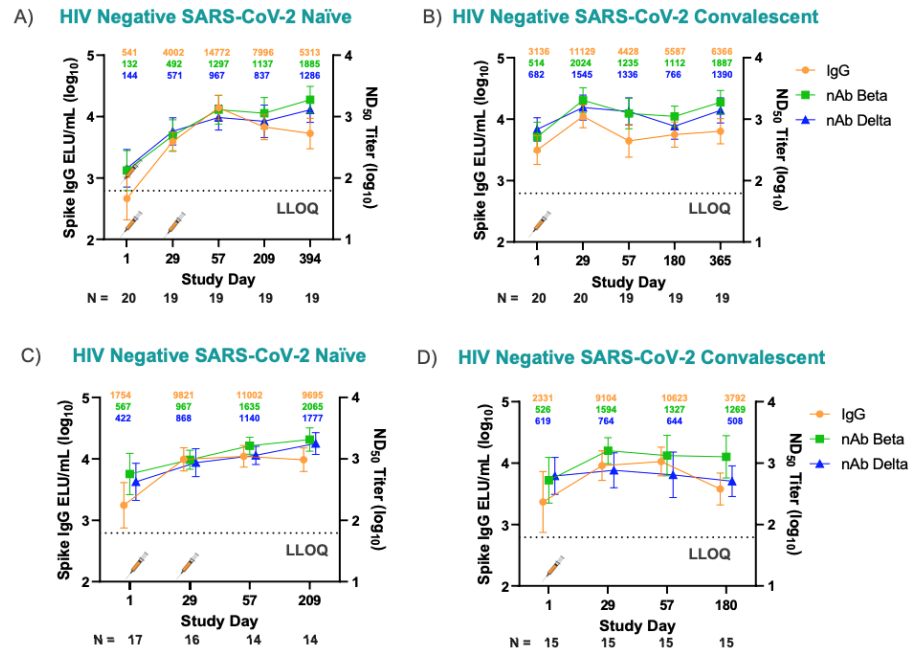
CORAL-BOOST: Elderly UK Population, samRNA Following Adenoviral or mRNA Primary Series



Binding antibodies (IgG) (A) and nAbs (B) against SpikeD614G measured in participants after receiving boost dose(s) of 10µg or 30µg of GRT-R910 post adenoviral and 30µg mRNA vaccine primary series. Geometric means with 95% confidence intervals are shown. Lower limit of quantitation (LLOQ): 50.3 ELU/mL; 62 ND50 Titer

CORAL-BOOST ID Week 2023 Poster

CORAL-CEPI: Young, Unvaccinated S. African Population, samRNA as Single Dose or Homologous Prime Boost



IgG bAb levels to Spike$_{WT}$ (ELU/mL) and nAb titers against Beta and Delta variants (ND50 titer) are shown for participants receiving 1 or 2 doses of 10µg GRT-R914 (A and B) or GRT-R912 (C and D). Geometric means with 95% confidence intervals are shown. Lower limit of quantitation (LLOQ): 62 ND50 Titer (nAb), 50.3 ELU/mL (IgG)

CORAL-CEPI ID Week 2023 Poster

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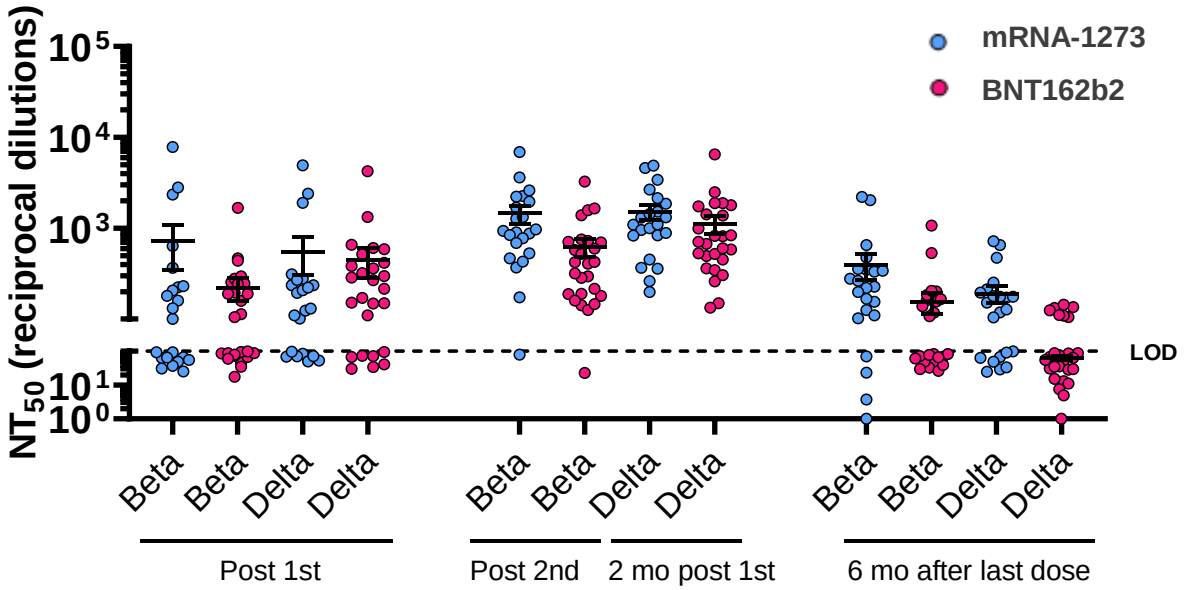
** Full datasets provided in the respective posters*

CORAL-CEPI: nAb Durability in Previously Unvaccinated Subjects (Beta and Delta VOCs)

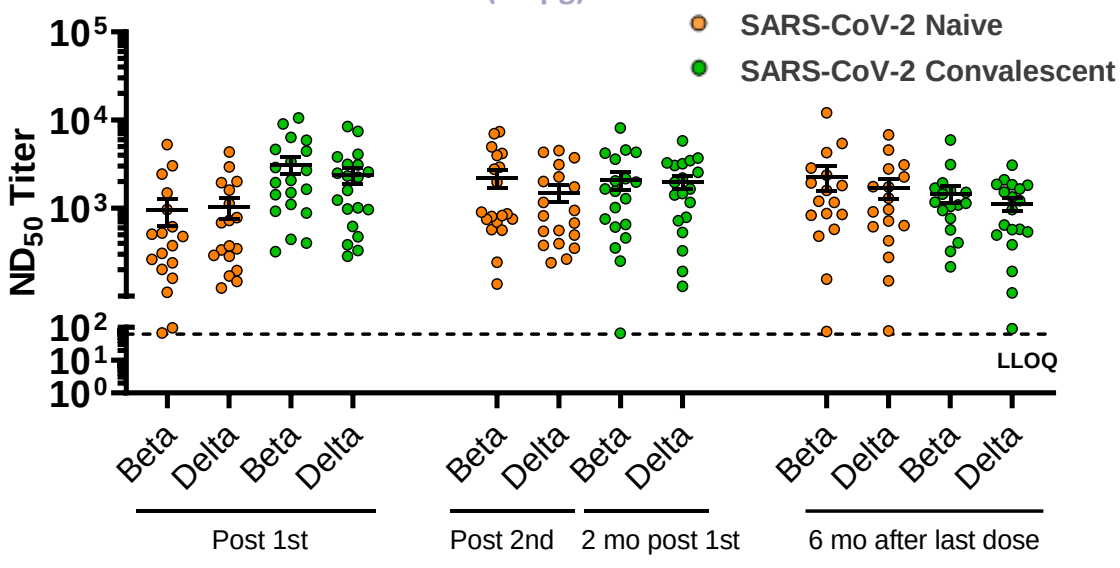
Cross-study 6-month data vs. Moderna and Pfizer shown; vaccines not studied head-to-head directly

Gritstone's samRNA vaccine candidate elicits durable nAb responses against Beta and Delta variants, in contrast to FDA-approved Moderna and BioNtech/Pfizer mRNA vaccines

Adapted from: Evans et al. Sci. Transl. Med. 2022[1]



CORAL-CEPI: Gritstone samRNA[2] (10 µg)



[2] *SARS-CoV-2 naïve (orange): Participants received 2 doses with anti-N seronegative at baseline. nAb data were collected at Day 29 (Post 1st dose), Day 57 (Post 2nd dose), and Day 209 (6 month after last dose). SARS-CoV-2 convalescent (green): Participants received 1 dose with anti-N seropositive at baseline. nAb data were collected at Day 29 (Post 1st dose), Day 57 (2 months post 1st dose), and Day 180 (6 month after last dose). Error bars indicates means ± SEs; the dashed horizontal line indicates the limit of detection (NT50 < 100) for Evan et al. Sci. Transl. Med. 2022. and it is lower limit of quantification (ND_{50} <62) for GO-012 data.*

[1] Evans et al. Sci Transl Med. 2022 Mar

There are limitations in this comparison, such as: a) study populations may not be entirely comparable; b) experience with circulating SARS-CoV-2 may be different; c) assays may not be entirely comparable, d) baseline values may be very different across studies

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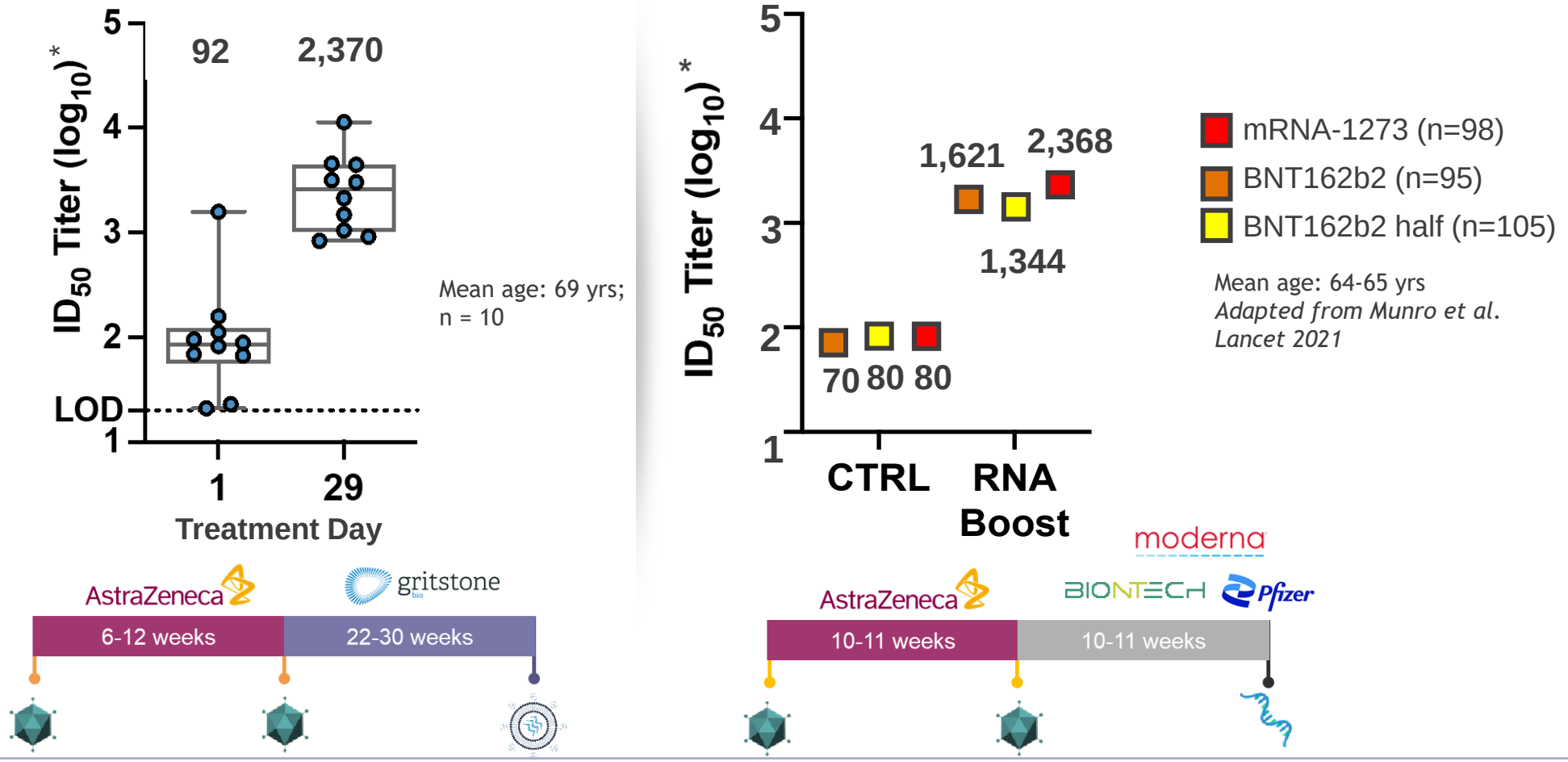
CORAL-BOOST: samRNA Boost Elicited Similar nAbs at up to 1/10th the Dose

*Cross-study comparison: 10µg of samRNA elicited similar nAbs as 100µg of Moderna (mRNA-1273) after AZ primary series**

Neutralizing antibodies (geomean) against Wild Type Variant



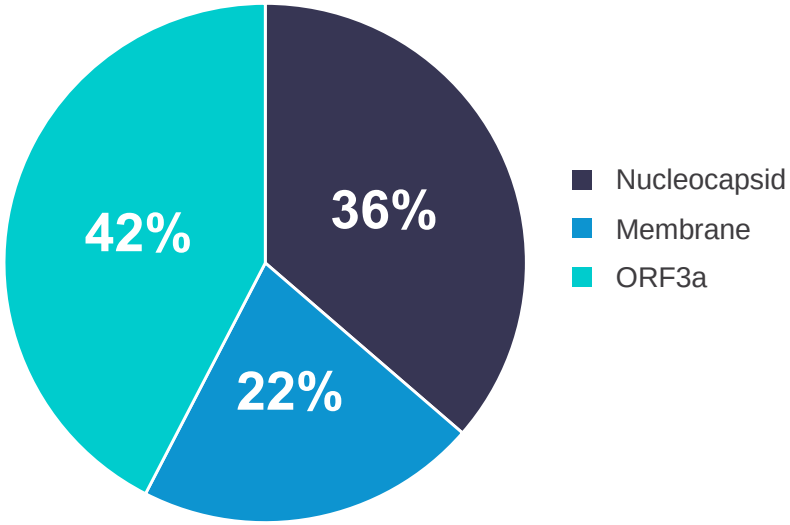
*Not studied head-to-head directly. ID50 = Median infective dose; Geomean ID50 titer values notated CTRL: Equivalent meningococcal conjugate vaccine; Treatment day = day 1 GRTS samRNA boost dose was administered. Boxes and horizontal bars denote interquartile range (IQR) and median neutralization, respectively. Whisker endpoints are equal to the maximum and minimum values below or above the median +/- 1.5 x IQR.

Phase 1 Results: Robust and Broad CD8+ T cell Induction

samRNA has driven potent cytotoxic cellular responses against both Spike and non-Spike SARS-CoV-2 viral epitopes

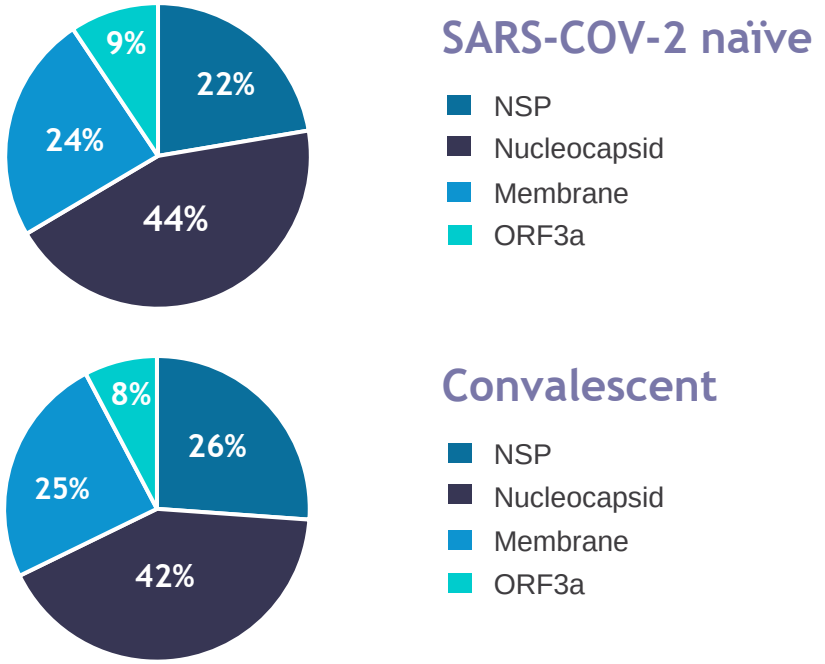
CORAL-BOOST: Non-Spike CD8+ T cell responses after single 10ug samRNA boost following Vaxzevria (AstraZeneca) primary series

Proportion of responses to TCE5 regions assessed by post-IVS ELISpot

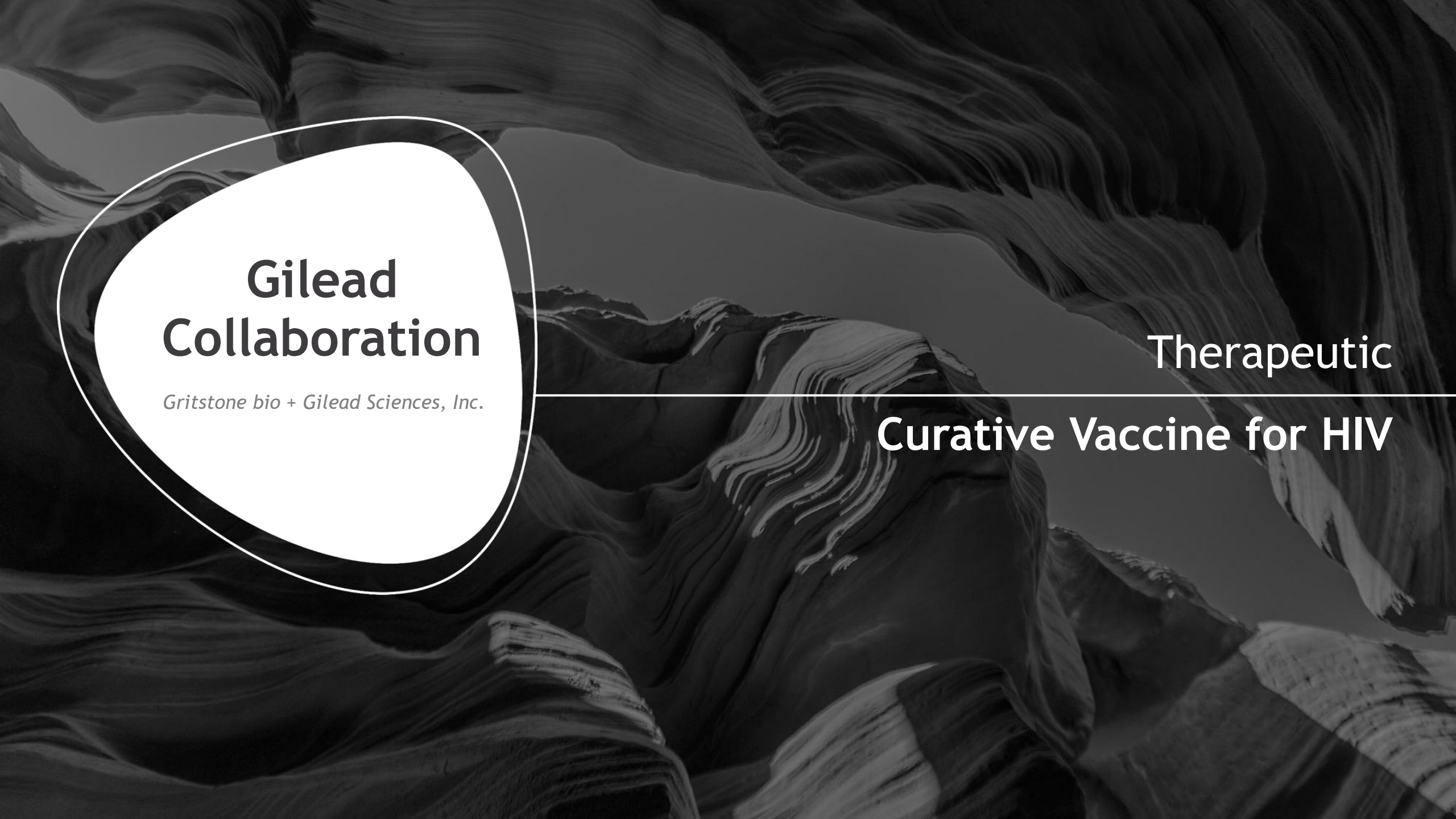


TCE5 overlapping peptide (OLP) pools to TCE5 Nucleocapsid, Membrane and ORF3a regions assessed by post-IVS ELISpot (post-treatment timepoint)

CORAL-CEPI: Previous SARS-CoV-2 exposure does not affect T cell responses post-vaccination



Frequency of peak T cell responses to TCE components at post- vaccination timepoint are shown for naïve (n=7) and convalescent (n=7) subjects following one or two doses of GRT-R914.



Gilead Collaboration

Gritstone bio + Gilead Sciences, Inc.

Therapeutic

Curative Vaccine for HIV

Gilead HIV Cure Collaboration for Vaccine-based HIV Immunotherapy

Deal value of up to $785 million plus royalties

- Leverages Gritstone's vaccine platform technologies (adenoviral and samRNA)
- Based on preclinical data demonstrating strong, durable and broad anti-SIV CD8+ T cell responses and T cell memory data
- Gilead is conducting a Phase 1 study and is responsible for all R&D
- $40M milestone payment payable by Gilead for Phase 2 opt-in

Terms of Arrangement

GILEAD	gritstone bio
$60 million	Upfront payment
$725 million	Clinical, regulatory, and commercial milestones

Mid single-digit to low double-digit tiered royalties on net sales upon commercialization

Developing Next-Generation Vaccines for Oncology and Infectious Disease

Platforms Drive More Potent and Durable Immunity

Best-in-class antigen prediction

Proprietary, next-gen vectors drive response

Fully-integrated Biomanufacturing

Potential best-in-class neoantigen-based personalized cancer vaccine program (GRANITE) in randomized Phase 2/3 study for MSS-CRC

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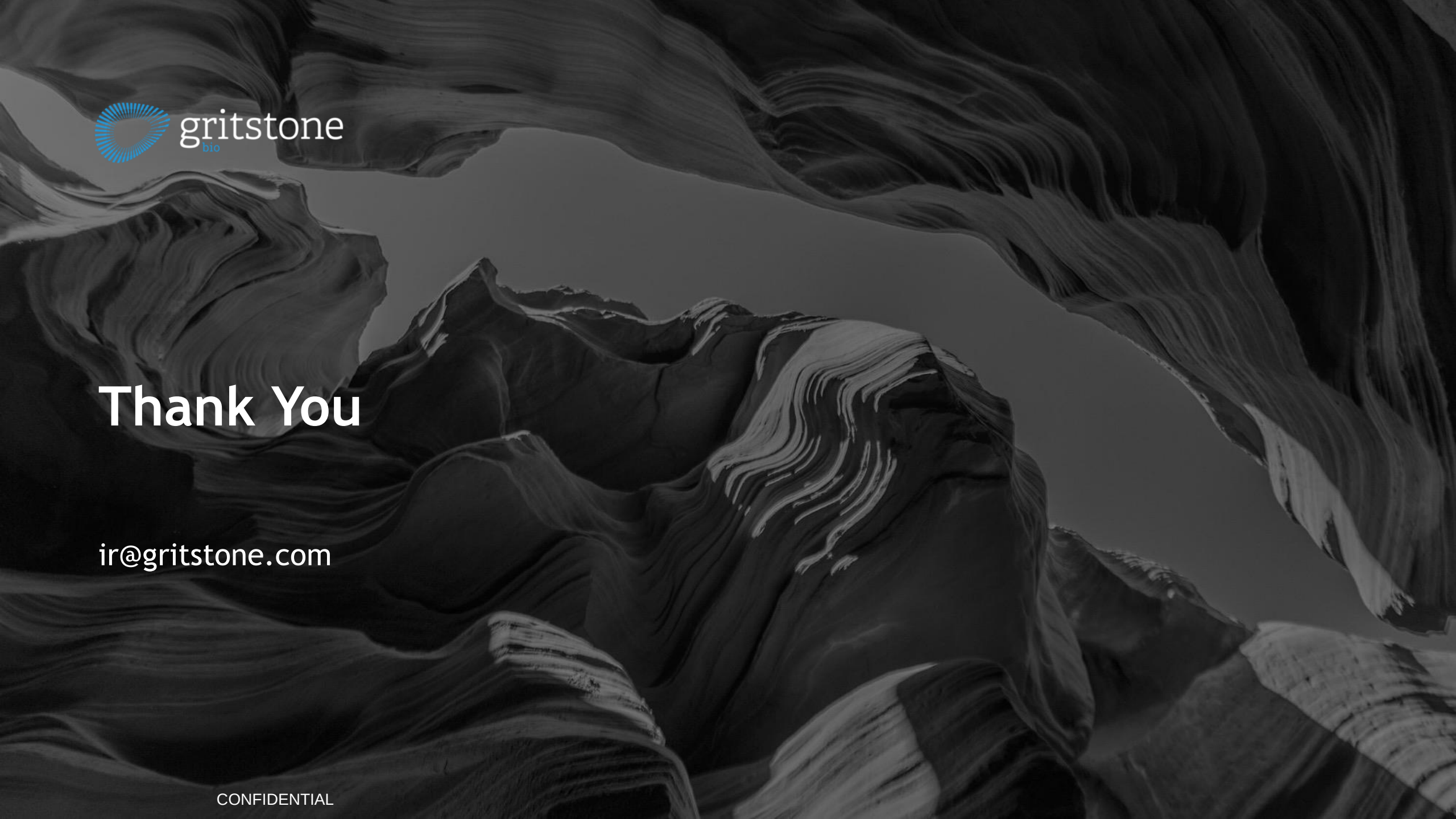
Cash Position as of December 31, 2023*	$86.9 million

**cash, cash equivalents, marketable securities, and restricted cash*



Thank You

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