nykode therapeutics

Company update on T cell focused COVID-19 vaccine candidate

January 5, 2022

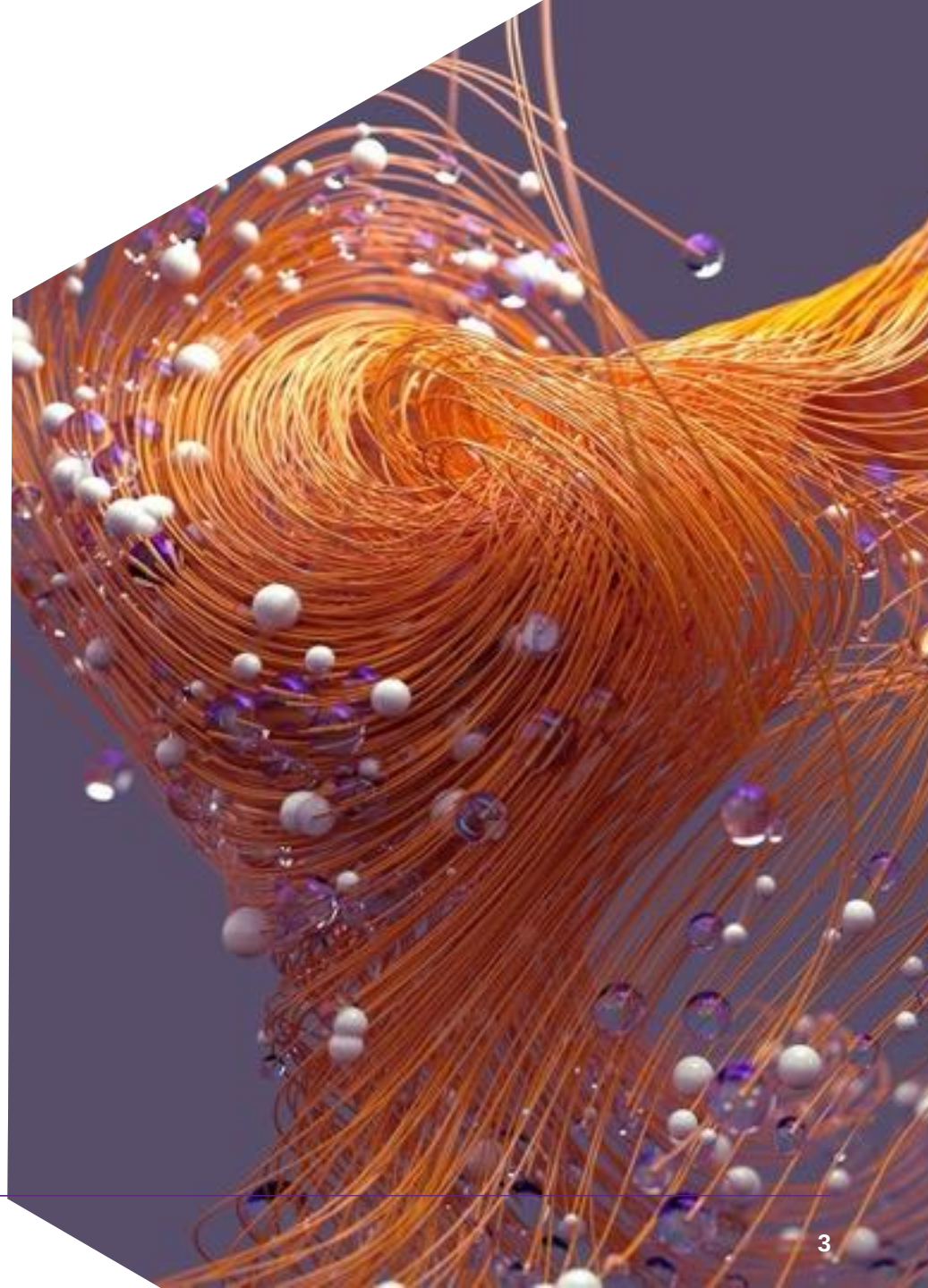
Forward-looking statement

This announcement and any materials distributed in connection with this presentation may contain certain forward-looking statements. By their nature, forward-looking statements involve risk and uncertainty because they reflect the company's current expectations and assumptions as to future events and circumstances that may not prove accurate.

A number of material factors could cause actual results and developments to differ materially from those expressed or implied by these forward-looking statements.

Overview

- Proprietary Vaccibody™ immunotherapy platform uniquely targets Antigen Presenting Cells (APCs) for a potent, broad and lasting immune response
- Pipeline of oncology and infectious disease vaccines includes partnered programs and wholly-owned clinical candidates
- Up to $1.64 billion in upfront and milestone payments plus royalties from top-tier biopharma partners
- Wholly-owned programs include cervical cancer candidate in Phase 2; next generation COVID vaccine for variants of concern in Phase 1/2
- Unique Vaccibody construct can deliver all major vaccine types: DNA, RNA, viral, fusion protein
- Well capitalized and multiple significant catalysts in near-to-medium term



Top-tier collaborations for cancer and infectious disease vaccines valued up to $1.64 billion plus royalties

Partner	Collaboration	Terms	Clinical Development
REGENERON	Multi-target license and collaboration agreement to develop 3 oncology and 2 novel infectious disease programs	$925M~ ◆ $30M upfront ◆ $20M equity investment ◆ $875M in potential milestone payments	Regeneron to develop and potentially commercialize products Nykode to supply technology and product supply through Phase 1 trials
Genentech A Member of the Roche Group	Worldwide, exclusive license and collaboration agreement to develop VB10.NEO, Nykode's individualized neoantigen cancer vaccine	$715M~ ◆ $200M upfront/near term ◆ $515M in potential payments and milestones	Nykode to conduct clinical trials through Phase 1b study Genentech to subsequently conduct clinical, regulatory, manufacturing and commercialization activities
Adaptive biotechnologies®	Worldwide, exclusive rights to Adaptive's clinically validated SARS-CoV-2 T cell epitopes	◆ Undisclosed	Nykode to design and develop T cell vaccines to specifically address SARS-CoV-2 variants of concern

Pipeline of wholly-owned and partnered programs

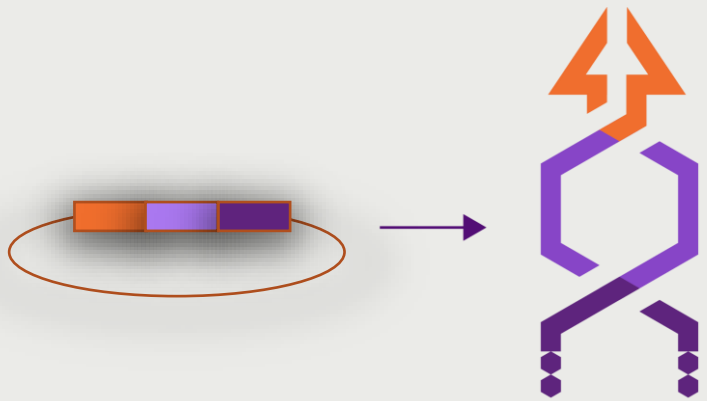
	Program	Indication	Discovery/ Preclinical	Phase 1	Phase 2	Phase 3	Partnerships	Upcoming Milestones
Wholly Owned								
Oncology	**VB10.16**	**HPV16+ cervical cancer[3]**						1H22: Interim Data
	Internal	Undisclosed targets						
Infectious Disease	**VB10.COV2**	**SARS-CoV-2**					Adaptive biotechnologies[4]	1H22: Interim data
	Internal	Undisclosed targets						
Partnered								
Oncology	VB10.NEO	Melanoma, lung, bladder, renal, head and neck					Genentech[1] A Member of the Roche Group; NEKTAR[2]	
	VB10.NEO	Locally advanced and metastatic tumors					Genentech[1] A Member of the Roche Group	
	Regeneron (programs 1 – 3)	Undisclosed					REGENERON[5]	
Infectious Disease	Regeneron (programs 4 – 5)	Undisclosed					REGENERON[5]	

1. Genentech has an exclusive license to VB10.NEO; 2. Collaboration with Nektar Therapeutics on combining NKTR-214 (bempegaldesleukin) with VB10.NEO in trial arm 5B (SCCHN); 3. Roche supplies atezolizumab; 4. Collaboration with Adaptive Biotechnologies on SARS-CoV-2 T cell vaccine; 5. Collaboration with Regeneron

Vaccibody™ APC-targeting platform is designed to induce a rapid, broad and lasting immune response

- Targets Antigen Presenting Cells (APCs) to induce T cells and B cells to combat cancer and infectious disease
- Ability to change the targeting unit enables different immune response profiles that can be tailored to specific diseases
- Delivery platform is agnostic to DNA, mRNA, viral vector vaccines
- Potential for combination therapies

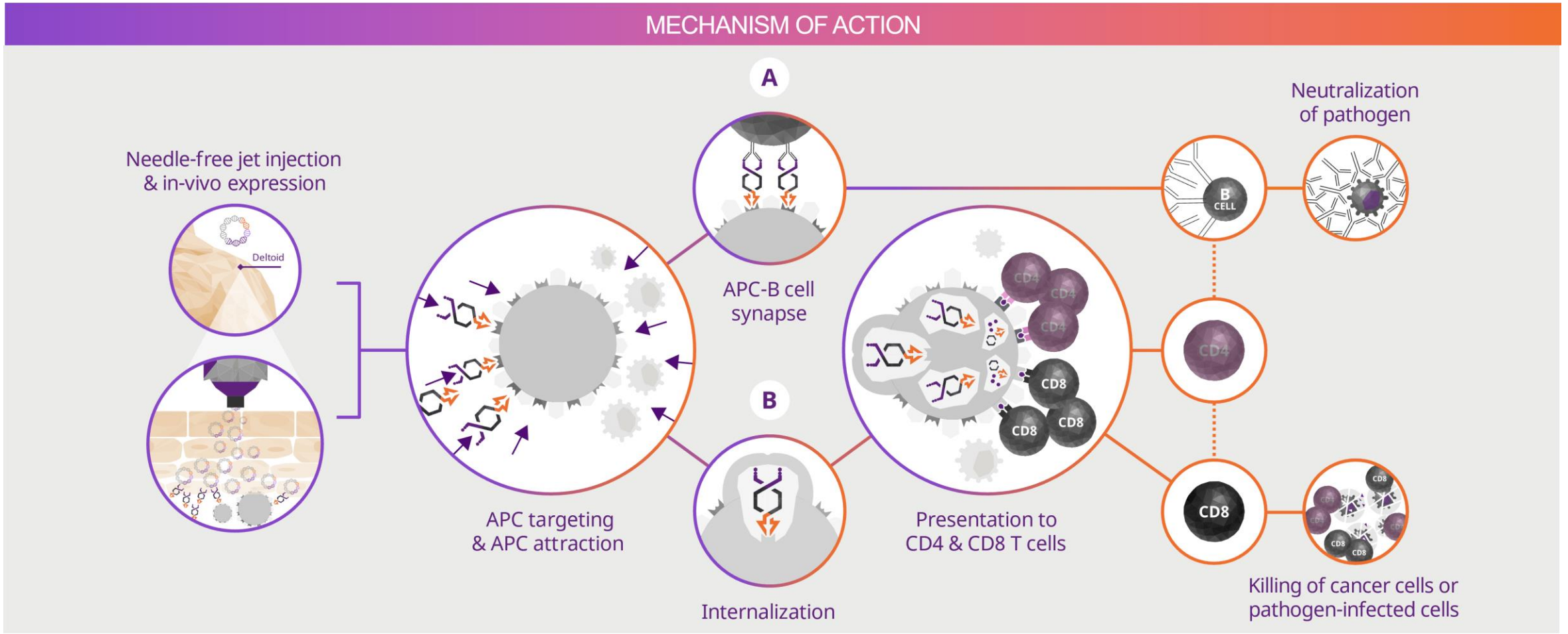
APC TARGETED VACCINE PLATFORM



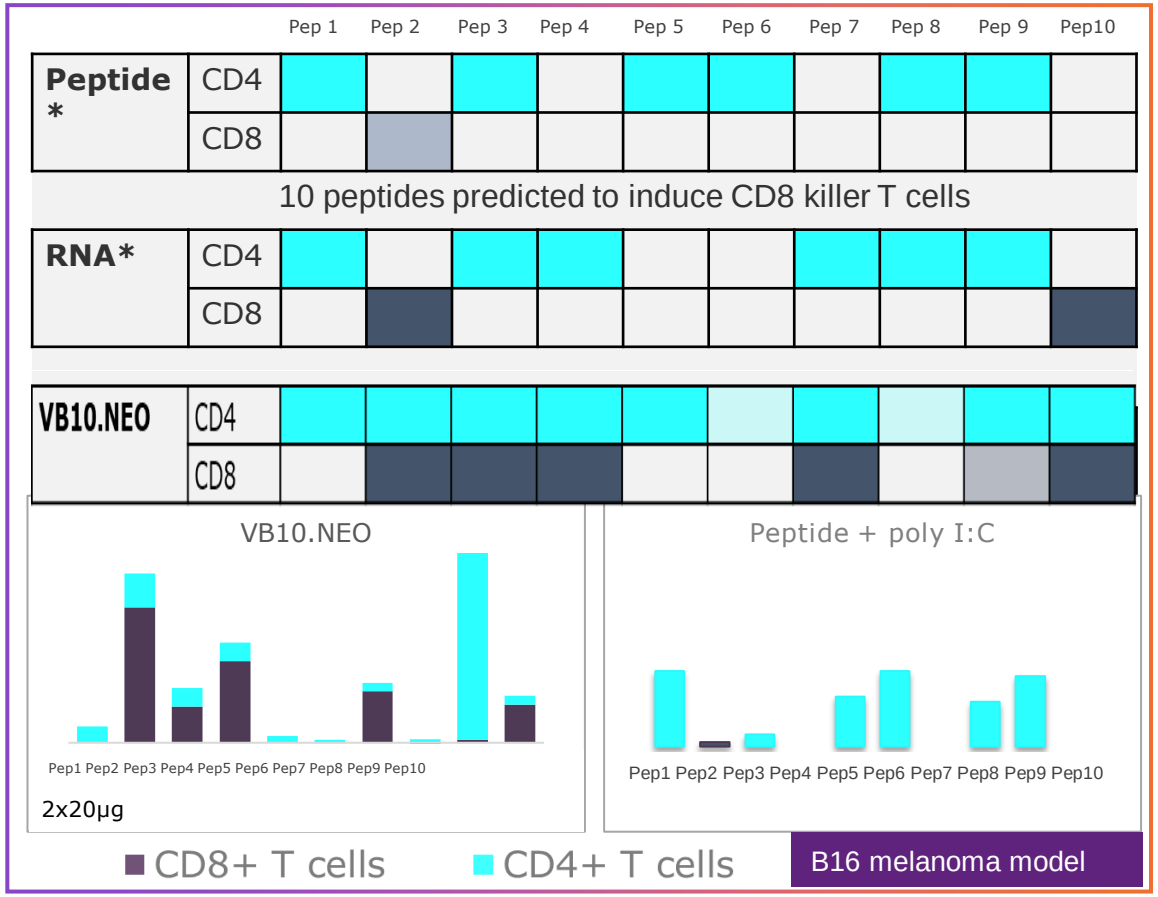
- Targeting unit to attract and bind Antigen Presenting Cells (APC)
  - Molecules that bind surface receptors on APC, eg:
    - Natural ligands, including cytokines and chemokines
    - Bacterial proteins
    - scFv from mAb binding
- Dimerization unit for crosslinking targeted receptor on the surface of the APC
- Antigenic unit
  - Full-length antigens
    - Cancer, viral, bacterial, parasitic etc.
  - Multiple T cell epitopes
    - Individualized and shared cancer products
    - T cell products for infectious disease
    - T cell products for autoimmunity

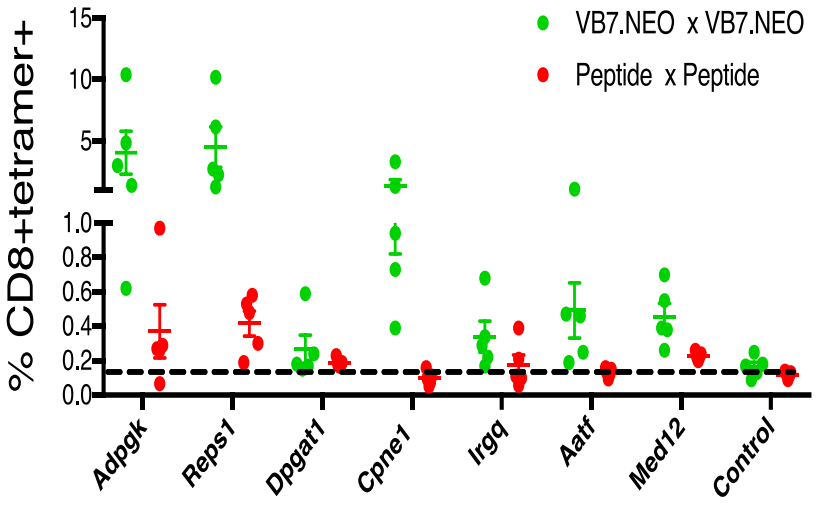
We have achieved this by combining selected genes to encode novel vaccine molecules with desired properties

Unique MoA stimulates both killer T cells and neutralizing antibodies for a potent, disease-specific immune response



MIP-1a targeted Vaccibody induces effective cross-presentation resulting in broad, strong CD8 T cell responses





Genentech

MC38 colon carcinoma

Vaccibody's unique ability to achieve controlled cross-presentation by specific APC receptor targeting induces broader and stronger CD8 responses than non-targeted vaccine technologies

Nykode is creating the next generation of COVID vaccines to protect against emerging variants

Focus on Variants of Concern

- Increasing evidence that neutralizing antibodies induced by the marketed vaccines against original strain wane over time
- Further reduced efficacy against Variants of concern (VoC)
- Both of Nykode's COVID candidates are engineered to provide longer-lasting and superior protection **against these emerging variants vs. existing COVID vaccines**

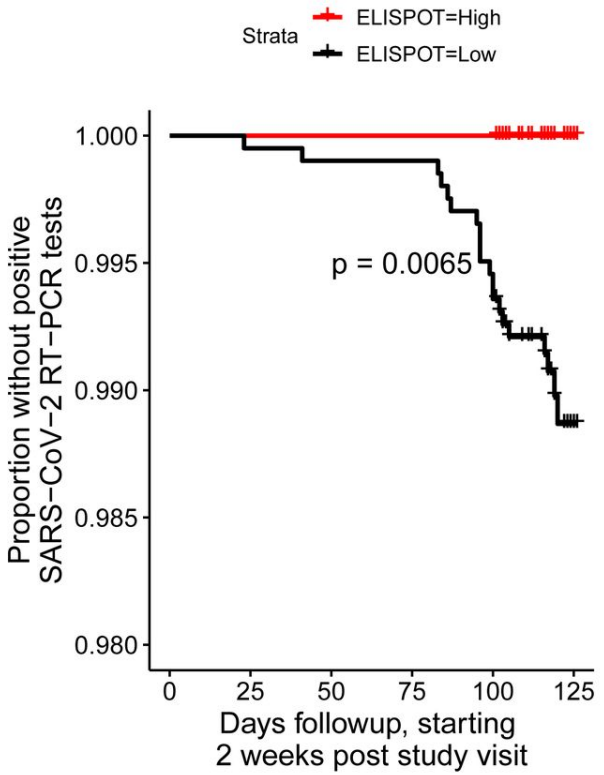
Broad T Cell Response

- Increasing evidence of the importance of broad T cell responses against COVID-19
- Current vaccine approaches only target Spike and do not generate broad antigen specific immune responses
- **Nykode's VB10.2210 candidate takes advantage of T cell epitopes identified by Adaptive Biotechnologies from multiple SARS-COoV-2 antigens to generate broad T cell immunity**

In addition to their significant protective benefits against COVID, Nykode's COVID candidates represent an opportunity to move assets rapidly through the clinic and validate the Nykode's infectious disease approach

T cell rationale in more detail

- Spike based vaccines are at risk of reduced effect due to mutations in Spike
- In COVID-19 patients, T cell responses are observed across the viral proteome and not limited to Spike.
- Growing evidence for the role of T cell immunity in protection against COVID-19:
  - Vaccines offers protection even where no neutralizing antibodies observed
  - Prior SARS-CoV-2 T cell responses associated with lower infection risk
  - CD8 T cells play a key role in limiting SARS-CoV-2 disease severity, even in the absence of humoral immunity, e.g. in patients with B cell deficiency
  - those who are infected with SARS-CoV-2 before getting vaccinated has a lower rate of breakthrough infection compared with those who were vaccinated but never infected
- Efficacy across populations and future Variants of Concern (VoCs) would require a vaccine with a large set of conserved and immunogenic T cell epitopes across multiple antigens with broad HLA coverage and a platform able to induce strong CD8 as well as CD4 T cell responses

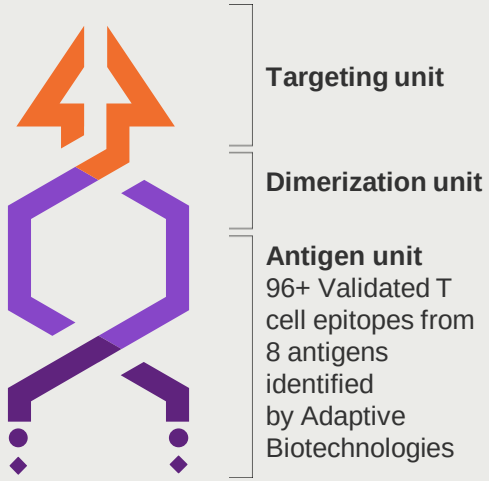


Peng et al 2020 https://www.nature.com/articles/s41590-020-0782-6
Wyllie et al SIREN study UK https://www.medrxiv.org/content/10.1101/2020.11.02.20222778v1.full-text

Two COVID vaccine candidates currently in a Phase 1/2 study

VB10.2210 – T CELL CANDIDATE

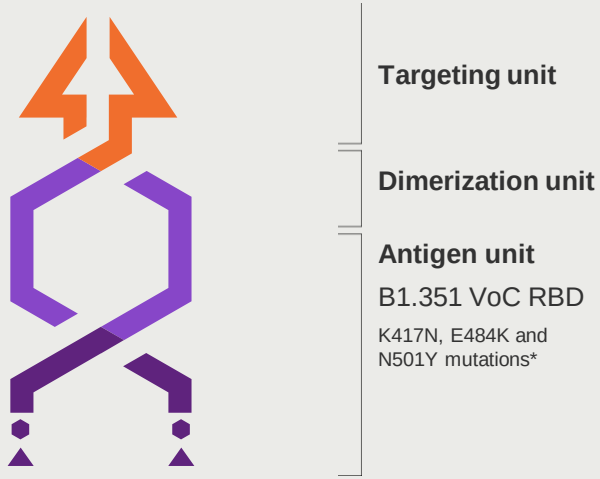
T cell epitope vaccine inducing broadly protective T cell responses



*includes conserved immunogenic T cell epitopes from 7 non-spike antigens which are not as affected by mutations in the current and future VoC, incl Omicron

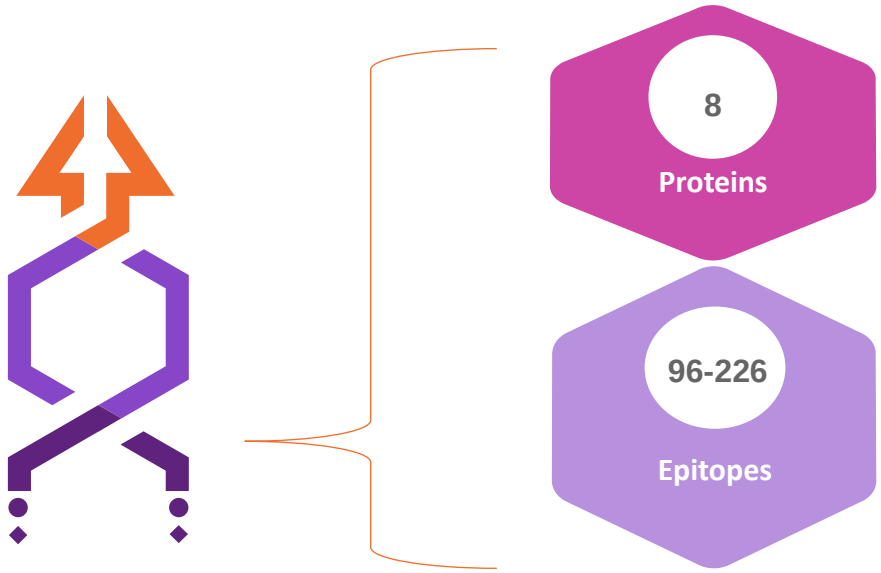
VB10.2129 – RBD CANDIDATE

RBD vaccine tailored to the B1.351 (Beta) VoC to generate RBD-specific antibody and T cell immunity

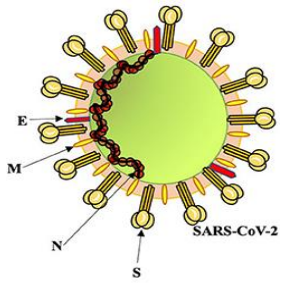


*All 3 aa mutated also in Omicron VoC

VB10.2210 includes a large set of conserved, validated T cell epitopes from 8 SARS-CoV-2 genes

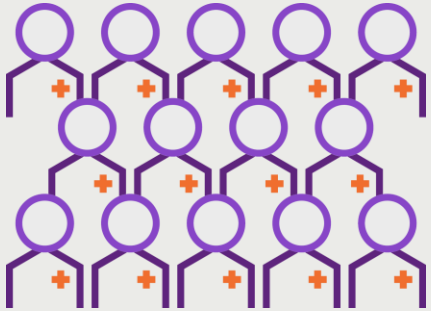


- Spike is the main surface protein and the focus for neutralizing antibody responses
- However, T cell responses can recognize all viral proteins and thus Spike constitutes a limited source for optimal T cell responses
- High concentration of mutations in Spike are evading Spike-specific antibody responses and reduces the Spike-specific T cell responses against variants
- VB10.2210 is designed to induce a broad T cell response against multiple immunogenic epitopes from seven additional non-Spike antigens not affected by mutations in the VoC
- Intended to be used as a **universal booster Covid vaccine**



Nykode's vaccine, paired with Adaptive's T cell epitopes, is designed to generate broad T cell immunity against Variants of Concern

Adaptive sequenced TCRs and identified expanded COVID-19 specific T cell clones in more than 6500 samples from COVID-19 patients.



Adaptive mapped the TCRs to corresponding T cell epitopes, including cell-based assays.

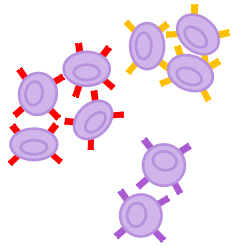
Optimal combination of conserved and immuno-dominant T cell epitope hotspots across all 8 SARS-CoV-2 antigens were subsequently used for vaccine design.

Adaptive launched T-Detect™ COVID, which is the first-in-class T cell-based clinical test for Covid-19 with FDA Emergency Use Authorization.

To be implemented also for immunomonitoring.

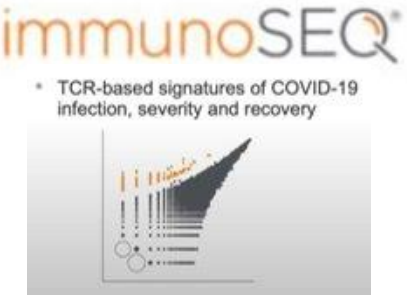
Epitopes included in VB10.2210 are confirmed to expand T cells in COVID-19 patients

1. T cell receptors from >6500 samples from COVID-19 patients are sequenced

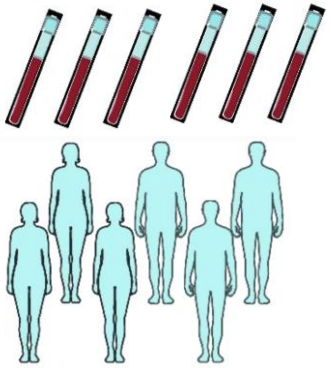


Identify SARS-CoV-2 specific T cells that are clonally expanded

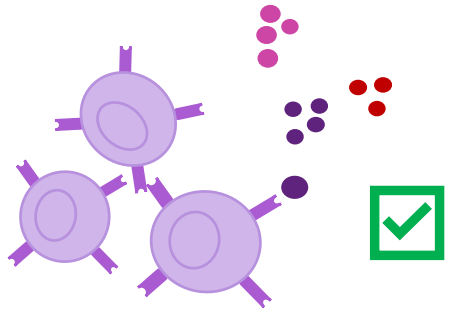
2. TCR sequences compared to non-COVID-19 material to identify SARS-CoV-2 specific TCRs and which ones are clonally expanded in multiple patients



3. Perform MIRA – cells are stimulated with peptide pools covering the viral antigens. The responding T cells are matched back to the epitope and the TCR of these T cells are sequenced.



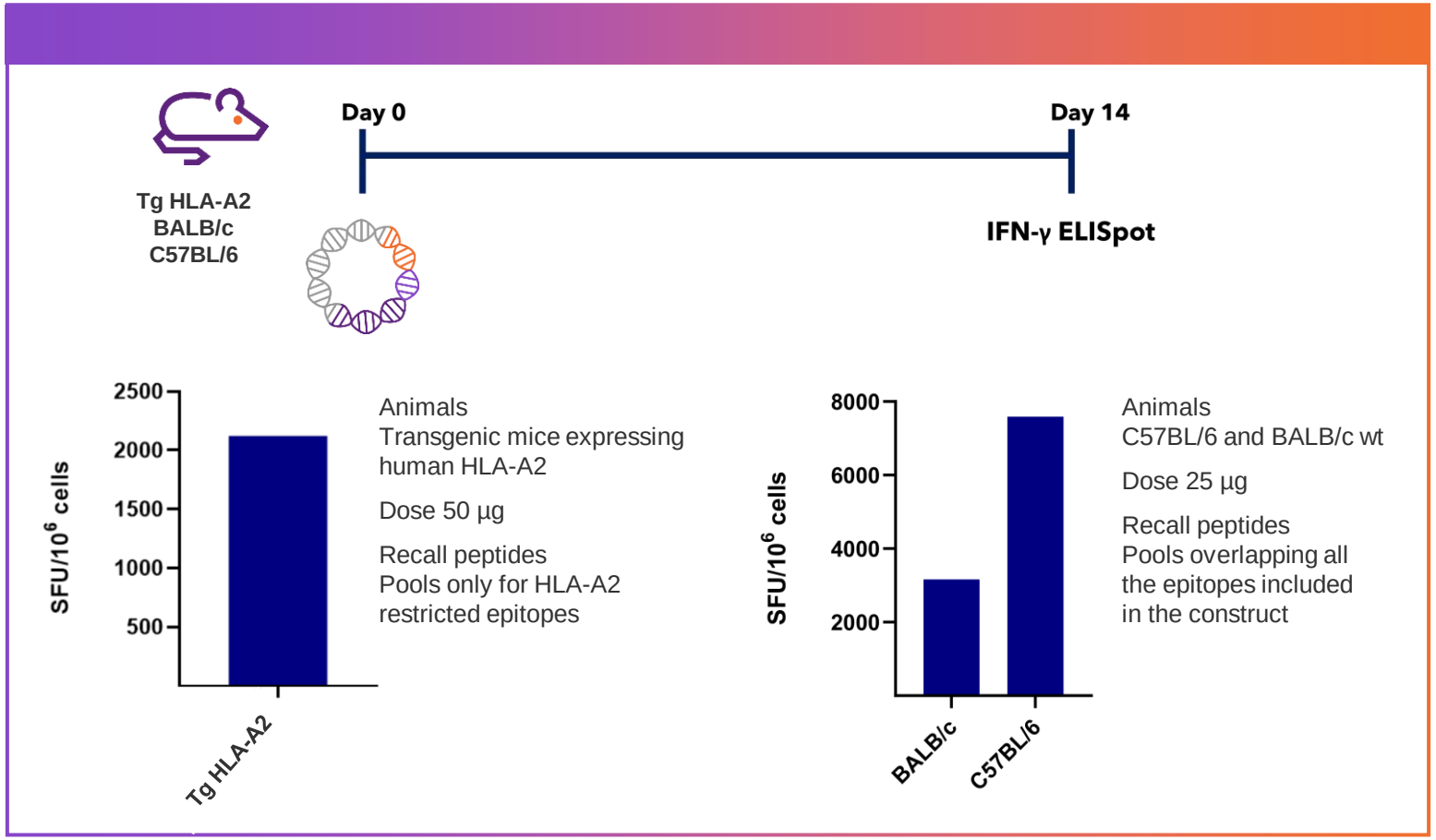
Subgroup of patients



4. Match epitope specificity with TCRs in the large Covid-19 specific TCR database

5. Use the optimal combination of these validated T cell epitopes in Nykode's MIP-1α targeted vaccine

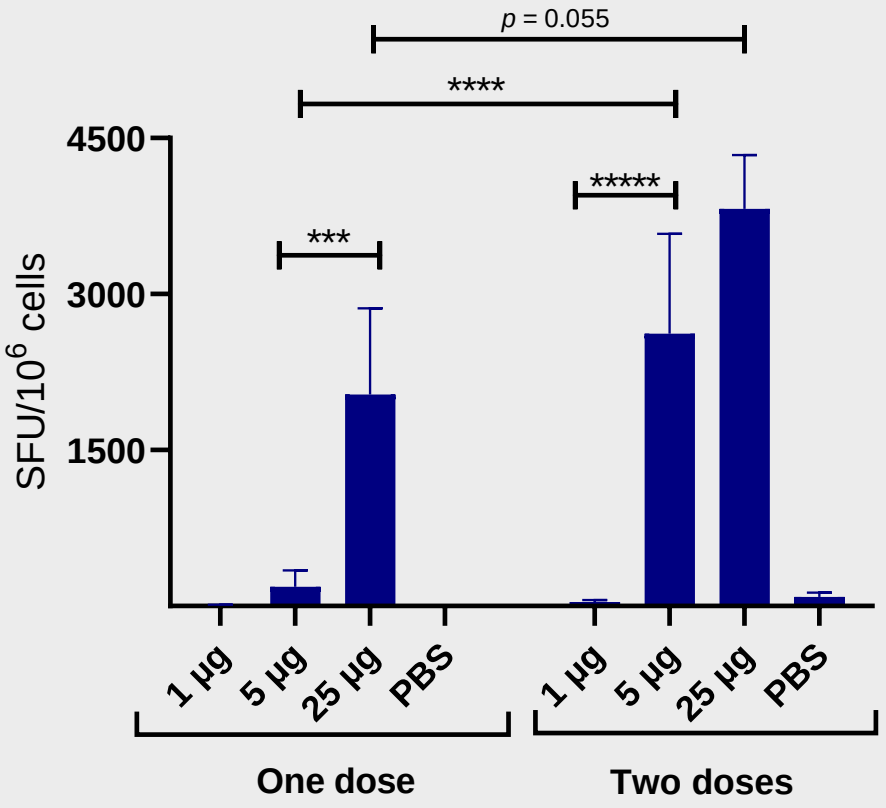
VB10.2210 induces strong CD8 T cell responses in mouse models



- VB10.2210 induces strong CD8 T cell responses after 1 vaccination against HLA-A2 specific epitopes in humanized HLA-A2 tg mice
- The strong T cell responses observed in two additional mice models show the breadth of the T cell response independent of HLA selection

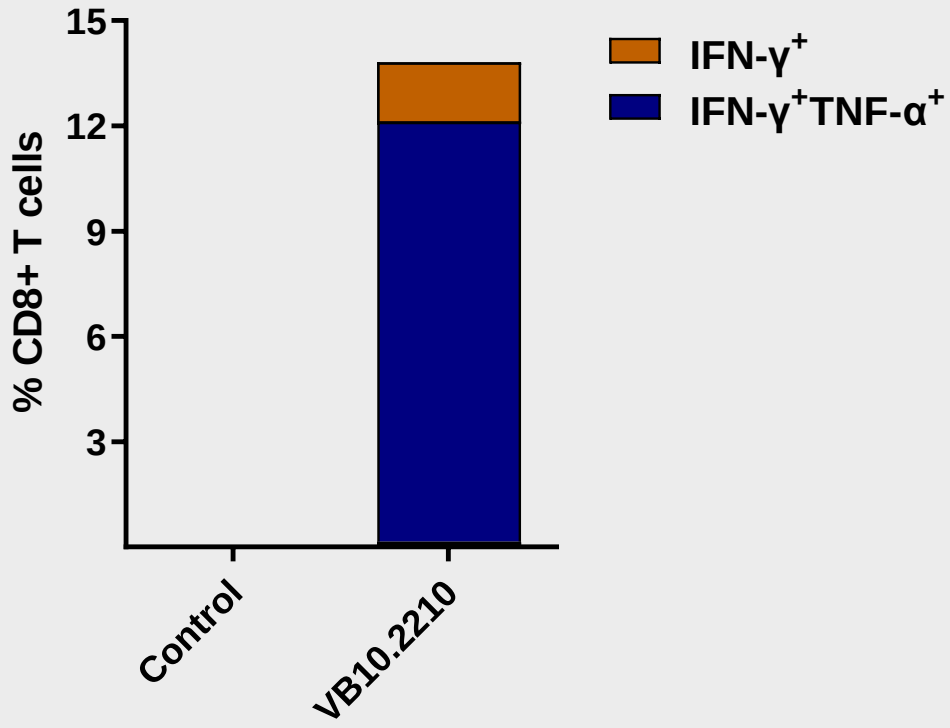
T cell immunity increases with higher dose and induce potent CD8 T cells secreting pro-inflammatory cytokines

DOSE RESPONSE AND SECOND DOSE EFFECT



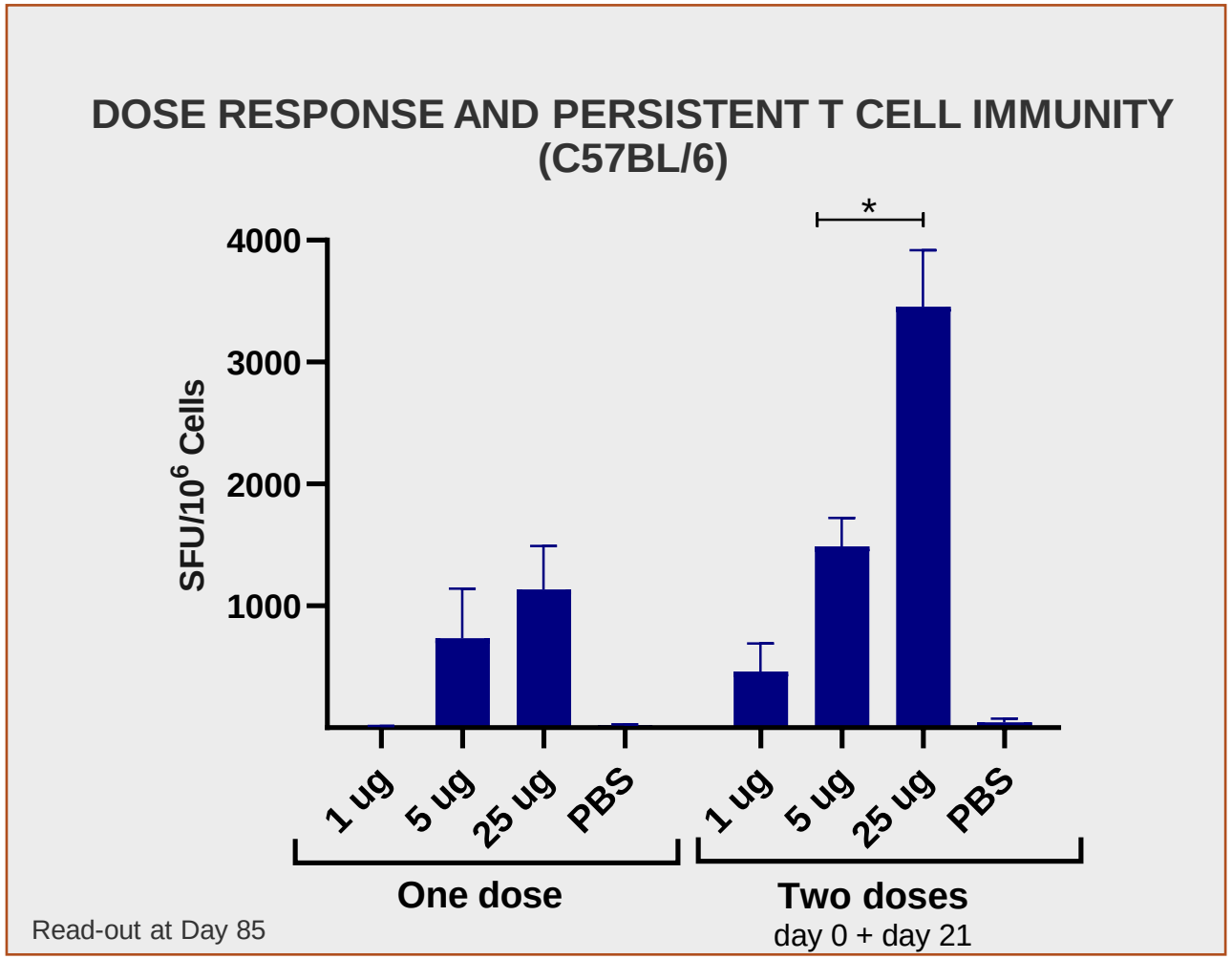
Read-out at Day 14 (one dose), Day 35 (two doses)

TWO-CYTOKINE PRO-INFLAMMATORY PROFILE



Read-out at Day 35 (two doses of 25µg)

VB10.2210 induces long-lasting T cell responses



Summary VB10.2210

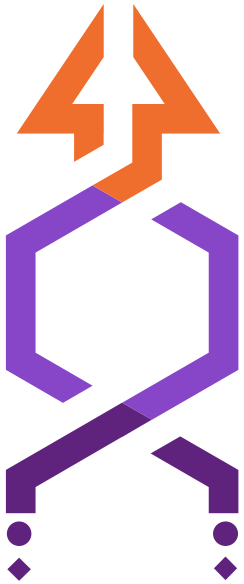
- Include clinically validated T cell epitopes based on Adaptive's unique TCR and epitope matching technology from >6500 Covid-19 samples

- APC-targeted delivery encoded by DNA plasmid, formulated in PBS- with manufacturing, stability, distribution and safety advantages

- Consistently strong T cell immunity in transgenic HLA-A2.1 mice
  - Validating the T cell epitopes identified by Adaptive
  - Confirming ability to generate potent $CD8^+$ T cells

- Strong T cell responses in three different mouse models across multiple epitopes
  - Verify ability to induce T cell responses across diverse HLA haplotypes

- Persistent T cell immunity measured at day 85
  - Indicates established immunological memory



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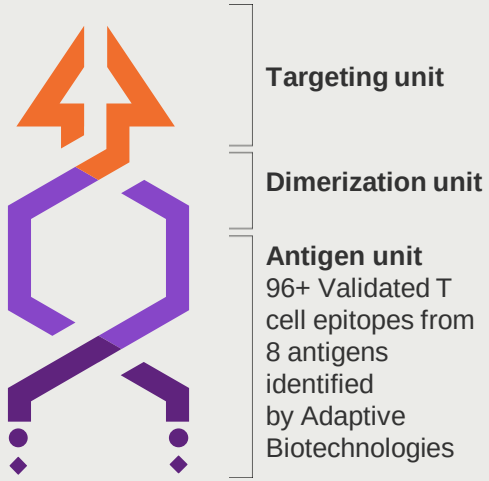

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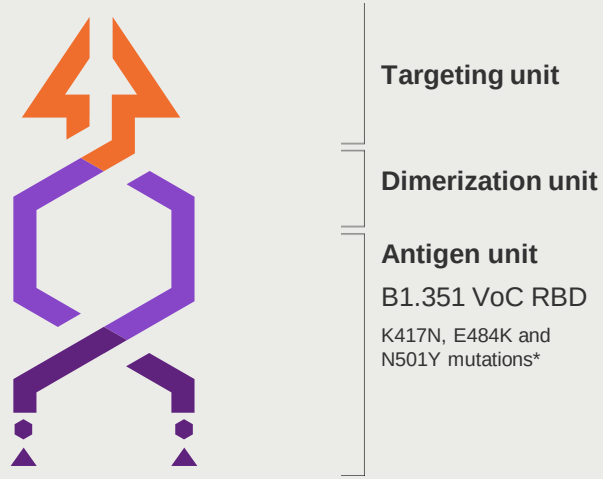
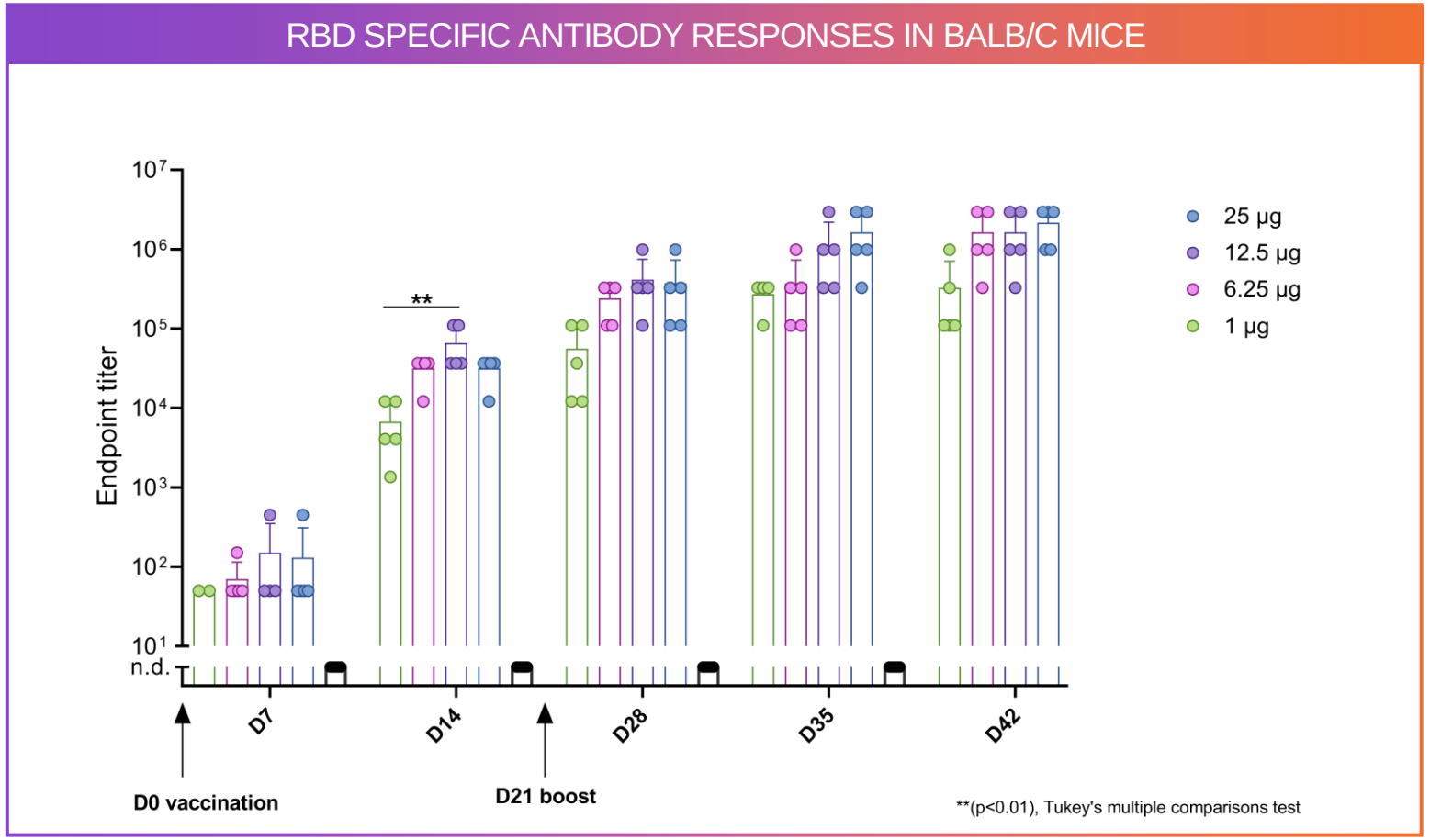


*All 3 aa mutated also in Omicron VoC

VB10.2129 induces rapid, strong and persistent antibody responses

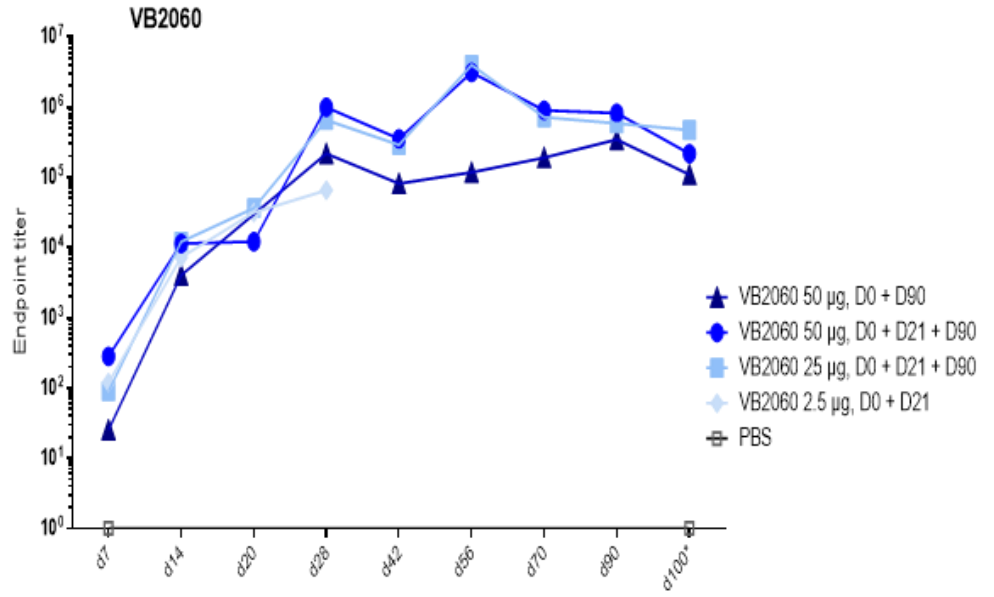
Rapid, strong and long-lasting antibody responses induced after vaccination with the B1.351 RBD specific vaccine

- Rapid: Ab detected already day 7 after one vaccination even with low dose (1µg)
- Strong responses: >10^6 endpoint titer
- Confirming the results achieved with the previously published Nykode RBD vaccine against Wuhan WA1/2020

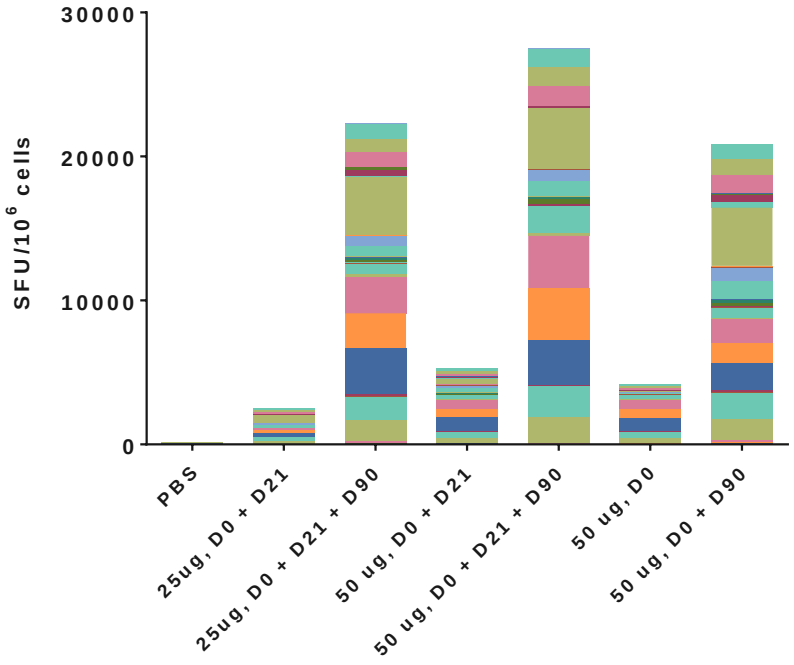


RBD candidate VB2060 induces persistent antibody and T cell responses

RBD-SPECIFIC ANTIBODY TITERS



RBD-SPECIFIC T CELL RESPONSES



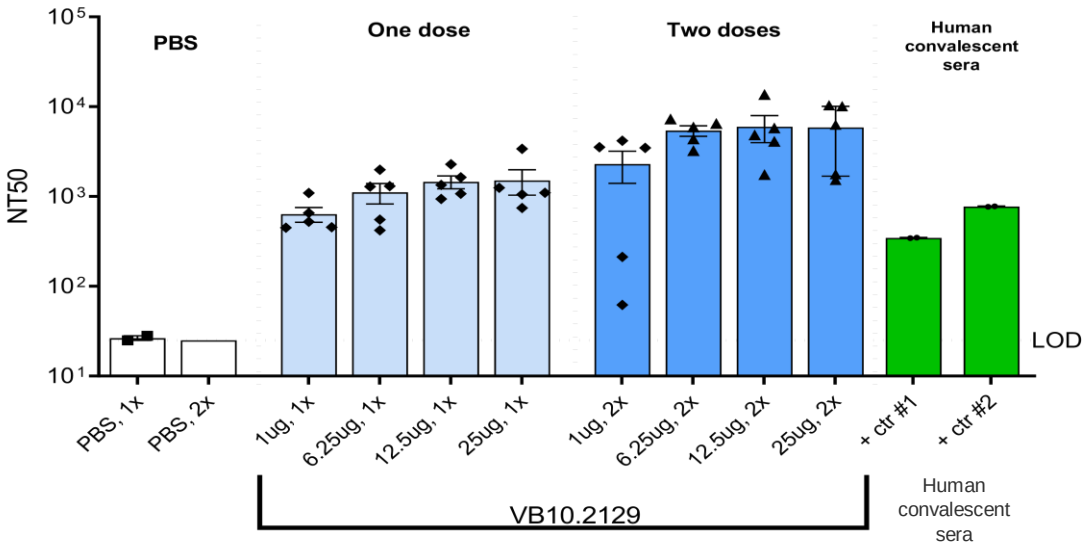
Read-out at Day 100

- Long-lasting RBD-specific antibody and T cell responses measured >3 months post vaccination

Norheim et al, 2020

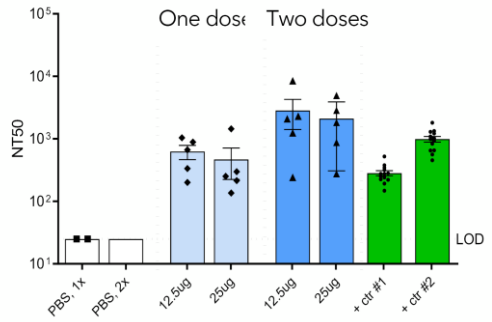
RBD candidate VB10.2129 induces potent virus neutralization responses across Variants of Concern

BETA – (PSEUDOVIRUS NEUTRALIZATION ASSAY)

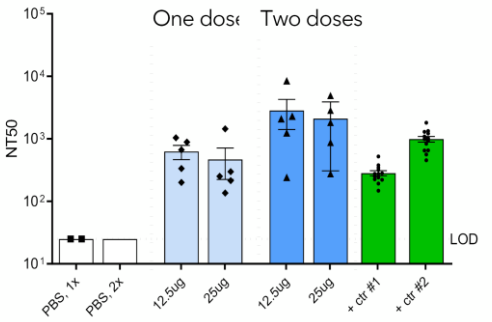


NT50: Neutralization titers that achieved 50% neutralization

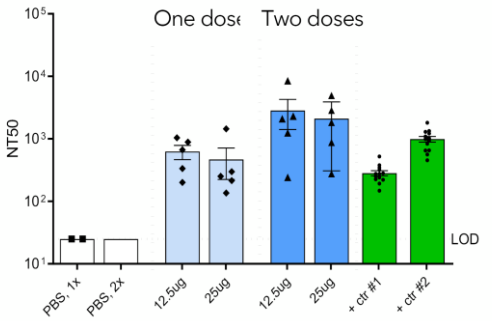
ORIGINAL STRAIN



ALPHA



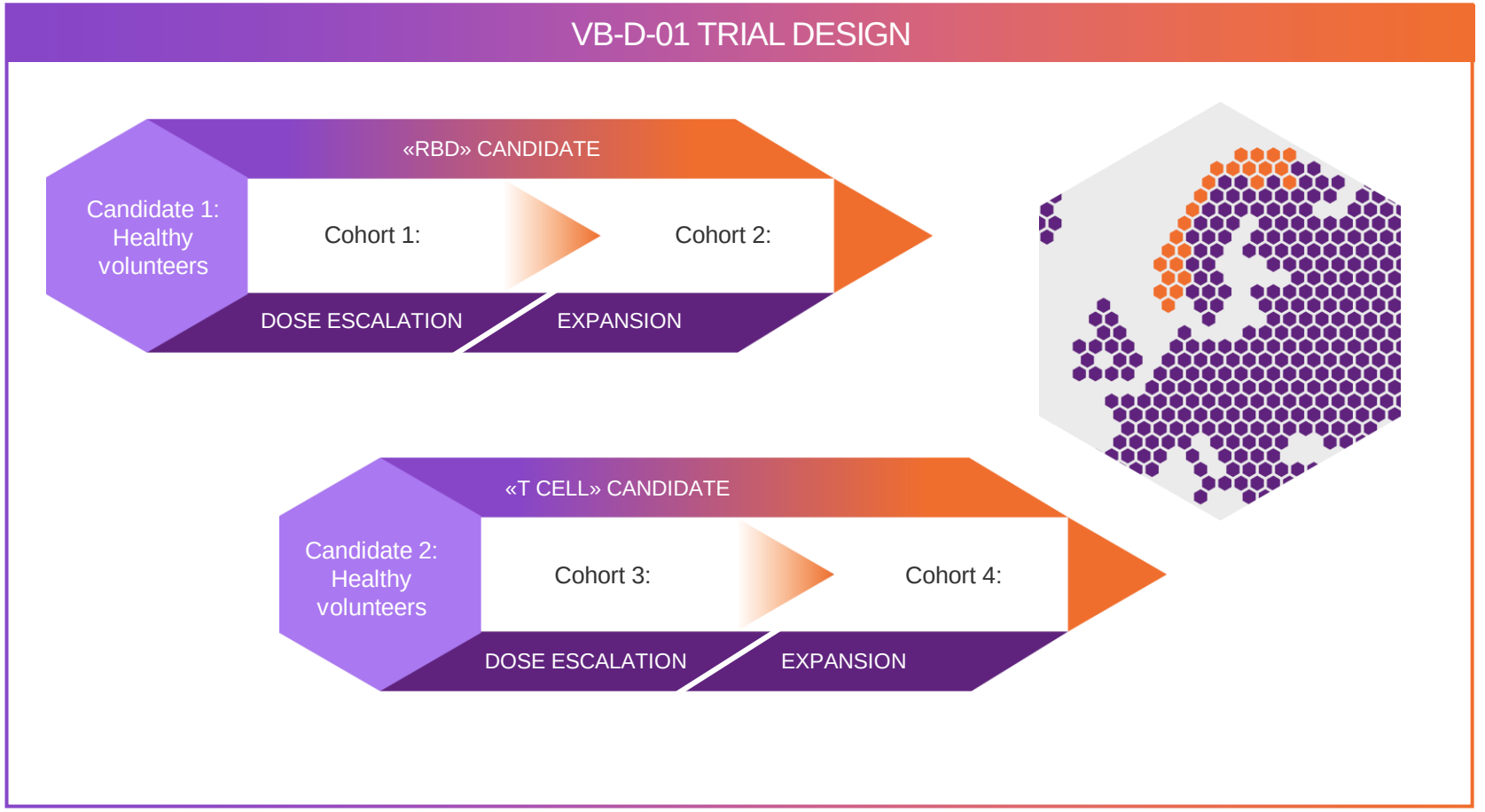
GAMMA



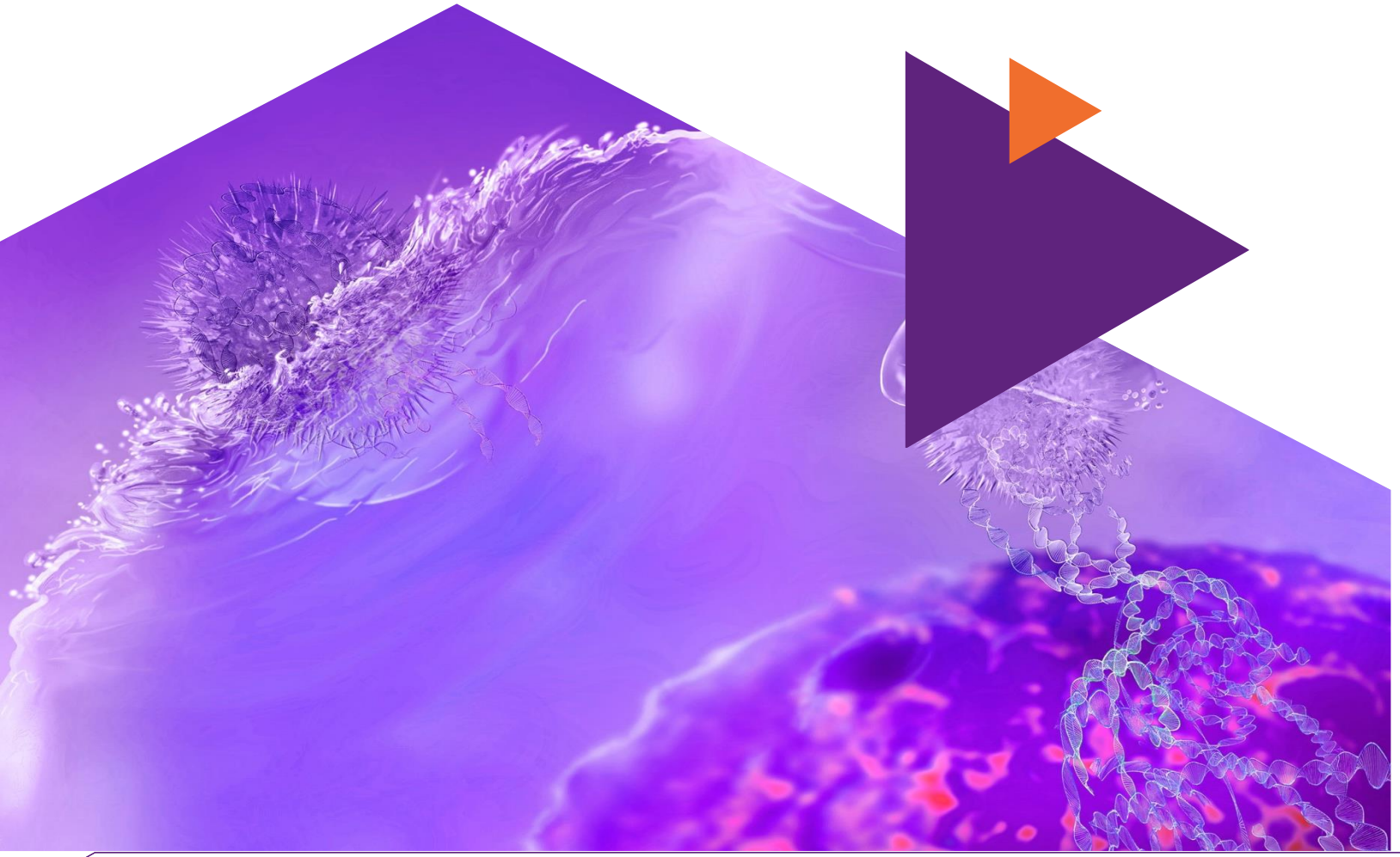
- Rapid onset of strong neutralizing antibody responses after a single vaccination
- Cross-neutralization observed against all other variants tested

Phase 1/2 trial investigating two candidates as a booster in previously vaccinated subjects

- A Phase 1/2, open label, dose escalation trial
- First subject with RBD candidate dosed Nov. 3, 2021; first patient with T cell candidate dosed Dec. 27, 2021
- Results expected during 1H 2022



Strong financial foundation for achieving our vision



- Financially well positioned to grow and execute the Company's strategy over the next years
- Strong balance sheet
  - 3Q 2021 liquidity of $189 mill
  - Additional $50 mill from Regeneron received in Q4 2021

Contact
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THANK YOU