Barinthus Biotherapeutics Corporate Presentation

Guiding the Immune System to Cure Disease

January 2025

BARINTHUS BIOTHERAPEUTICS

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Our Mission

To advance the next generation of immunotherapies for autoimmunity and inflammatory diseases.

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Company Overview

About us

- **Barinthus Bio** is developing **immunotherapies for autoimmunity and other inflammatory diseases ("I&I" area)**
- Publicly traded on Nasdaq under ticker **BRNS**
- Current focus leveraging **SNAP-TI platform to restore immune tolerance**
- Barinthus Bio's legacy portfolio based on viral vector platforms to be advanced with partner support

SNAP-TI Platform

- **Differentiated** platform for **antigen-specific immune tolerance**, potentially more effective & patient friendly
- **Aims to reduce inflammation & restores the natural state** of immune non-responsiveness to healthy tissue
- Lead candidate for **Celiac disease** (VTP-1000) in ongoing Phase 1 clinical trial with data readout expected in mid-2025
- Advancing undisclosed preclinical candidates based on SNAP-TI platform for other indications within I&I area

Financials

- **Strong balance sheet:**
  - Cash of **$112 million**.[1]
  - Outstanding ordinary shares: 40.2 million.[1]
  - Estimated cash **runway into 2027**.[1]
  - No debt or outstanding warrants.

[1] As of December 31, 2024; preliminary estimate based on management's current views and may change as a result of management's review of results and other factors. The preliminary financial estimate of the Company's cash as of December 31, 2024, may not ultimately be indicative of the Company's results for such periods and actual results may differ materially from those described above. No independent registered public accounting firm has audited, reviewed or compiled, examined or performed any procedures with respect to these preliminary results, nor have they expressed any opinion or any other form of assurance on these preliminary estimated results.

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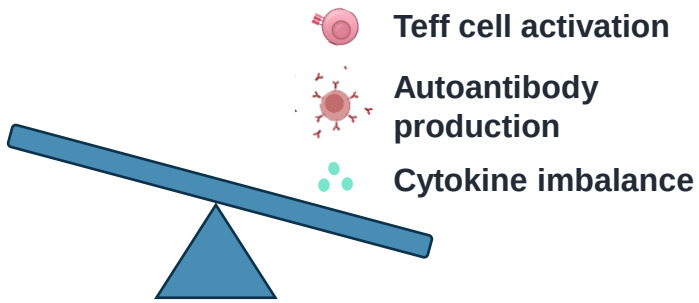
Antigen-Specific Immune Tolerance (ASIT) is a Targeted, Disease-Modifying Approach to I&I Diseases

I&I Diseases

Result of an **imbalance of the immune system**, wrongly attacking our own tissues



Indication Areas:

- Autoimmune diseases
- Allergy
- Transplant rejection
- Other inflammatory diseases

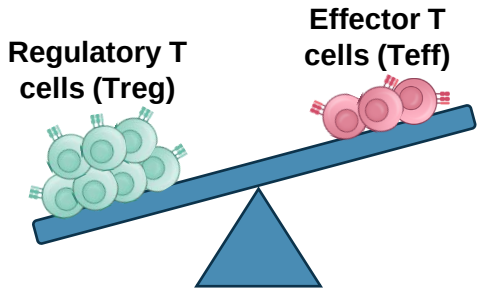
I&I Therapeutics are Evolving

Novel broad-acting therapeutics showing potential in certain I&I diseases

- Broad T cell and B cell depletion
- Anti-cytokine antibodies
- Treg cell therapies and promoters

ASIT, a promising targeted approach

Addressing underlying disease by increasing Treg/Teff ratio



Current challenges

- Limited antigen coverage
- Often requires IV administration
- Tolerability and ADAs
- Adequacy of Treg response

SNAP-TI designed to address each

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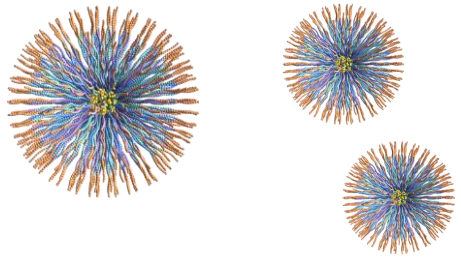
SNAP-TI Designed to Promote Antigen-Specific Tolerance

Characteristics and Mechanism of Action



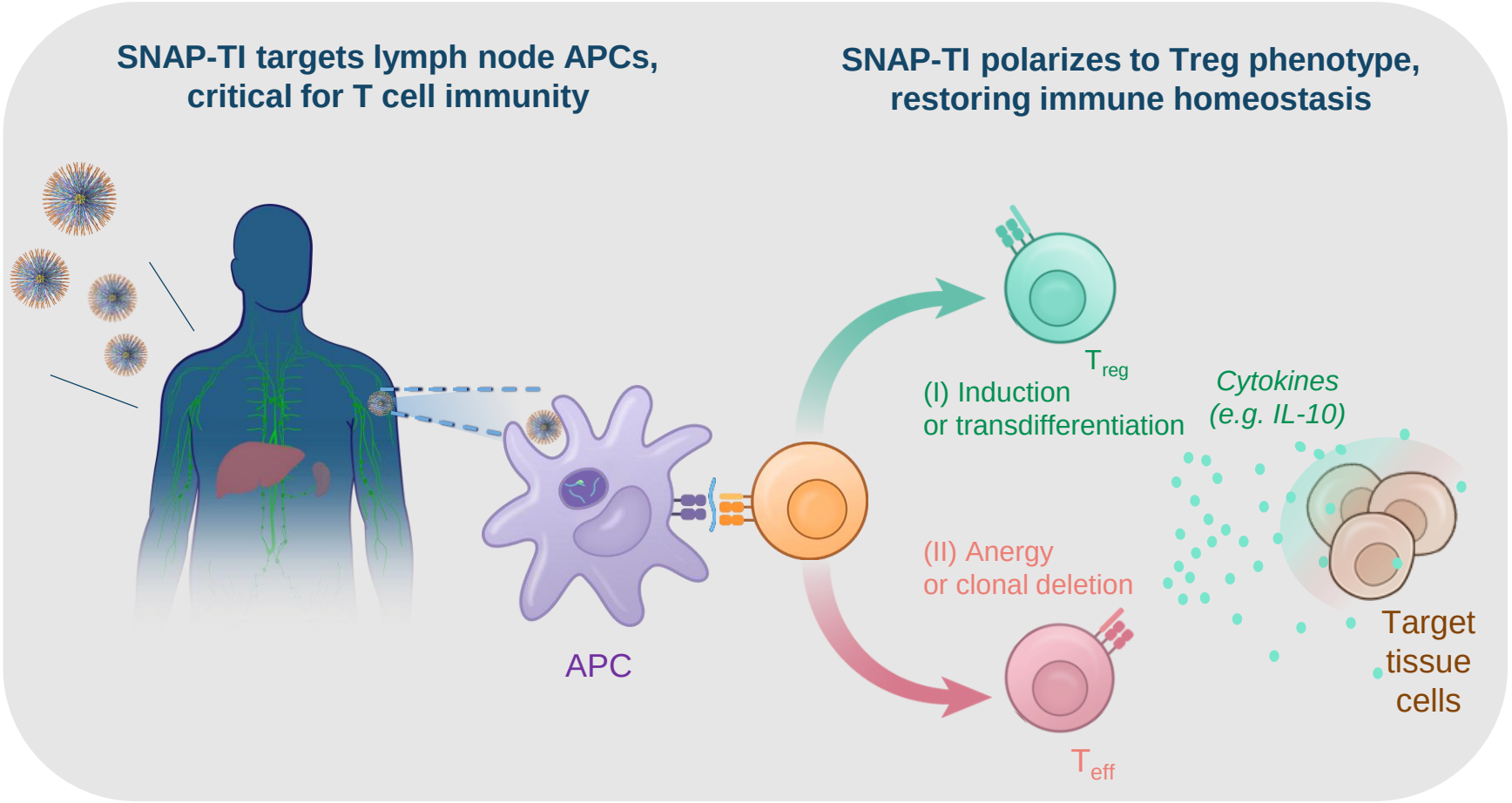
SNAP-TI

Self-Assembling Nanoparticle

- Co-delivery of multiple disease-associated antigens and an immunomodulator
- Nanoparticles of precise composition for ease of manufacturing

Enables

- Broad antigen coverage
- Patient friendly intramuscular/subcutaneous routes
- Based on preclinical data, potentially improved tolerability and increased Treg/Teff ratio



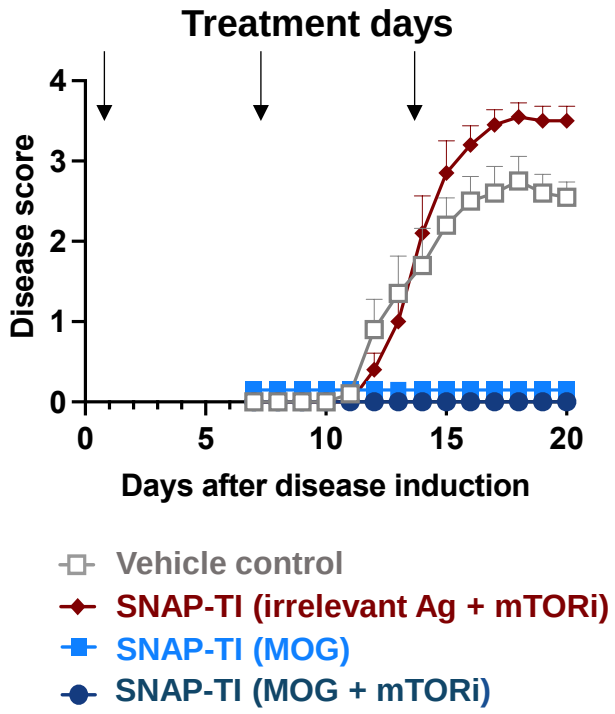
SOURCE: Based on unpublished preclinical data, Barinthus Bio, Data on File.

APC: Antigen presenting cell
Treg: Regulatory T cell
Teff: Effector T cell

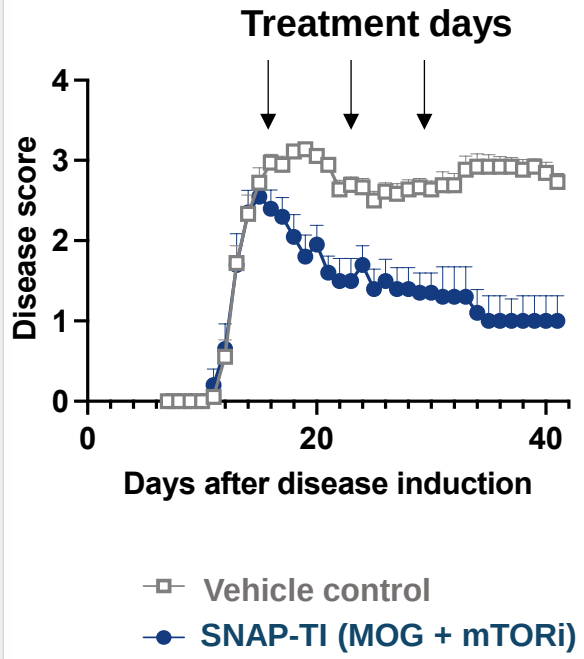
SNAP-TI Ameliorates Disease by Increasing Treg:Teff Ratio

Preclinical Results in EAE, a mouse model of Multiple Sclerosis (MS):

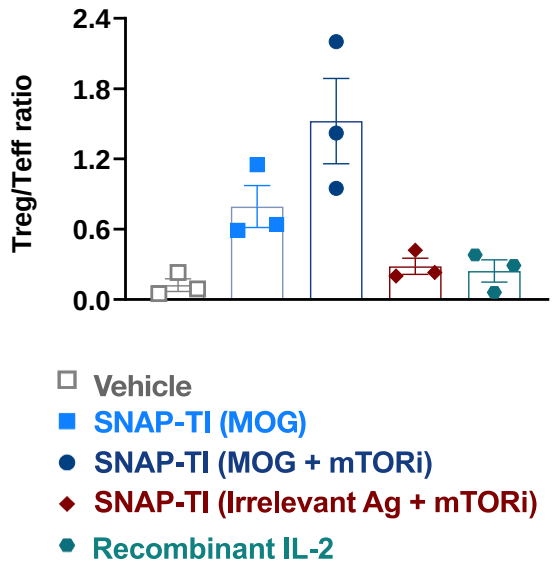
Protection against disease onset[1]



Reverses established disease[1]



Increased Treg:Teff ratio[1]



Efficacy is antigen-specific (**T cell mediated**)

Protection against re-challenge suggests **immune memory**

mTOR inhibitor rapamycin:

- **improves Treg:Teff ratio**
- prevents toxicity associated with exposure to disease antigen
- prevents Anti-drug Abs

MoA and disease amelioration observed in multiple CD4- (*e.g.*, MS) and CD8- (*e.g.*, T1D) driven mouse disease models

[1] Unpublished preclinical data, Barinthus Bio, Data on File.

EAE: Experimental autoimmune encephalomyelitis
MOG: myelin oligodendrocyte glycoprotein

mTORi: mechanist target of rapamycin
T1D: Type 1 diabetes

I&I Portfolio With Anticipated Near-Term Clinical Milestones

Harnessing the power of antigen-specific immunotherapies to target large market opportunities in areas of high unmet need.

Product Candidate*	Therapeutic For	Preclinical	Phase 1	Phase 2	Phase 3	Status/Anticipated Upcoming Milestones[1]
VTP-1000	Celiac disease					Phase 1 single ascending dose data (Q3 2025)

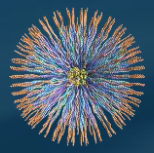
We believe that the SNAP-TI platform has the potential to impact multiple additional I&I indications.

*Barinthus Bio has worldwide rights for all product candidates.
These are estimated timelines only and our pipeline may be subject to change.

[1] Based on management's current estimates on expected clinical data milestones.

VTP-1000

Celiac Disease Therapeutic



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Guiding the immune system to cure disease

Celiac Disease: A Large and Growing Market

Everyone likely knows someone suffering from Celiac Disease

~1%	Of people have Celiac Disease worldwide.[1]	~80 million people.
~60%	Of patients are not able to adhere to a strict Gluten-Free Diet. [2]	~48 million people.
~20%	Of patients are Non-Responsive. [3]	~16 million people's symptoms continue despite avoiding gluten.
~7.5%	Increasing incidence per year. [4]	Increasing financial burden on healthcare systems.

[1] Celiac Disease Foundation. 2024.
[2] Rubin, G., et al. (2009) Aliment Pharmacol Ther. 30(4), 315-330.
[3] Leffler, DA., et al (2007) Clin Gastroenterol Hepatol. 5(4),445-450.
[4] King, JA., et al. Am J Gastroenterol (2020). 115(4):507-525

0 current FDA or EMA approved treatments.

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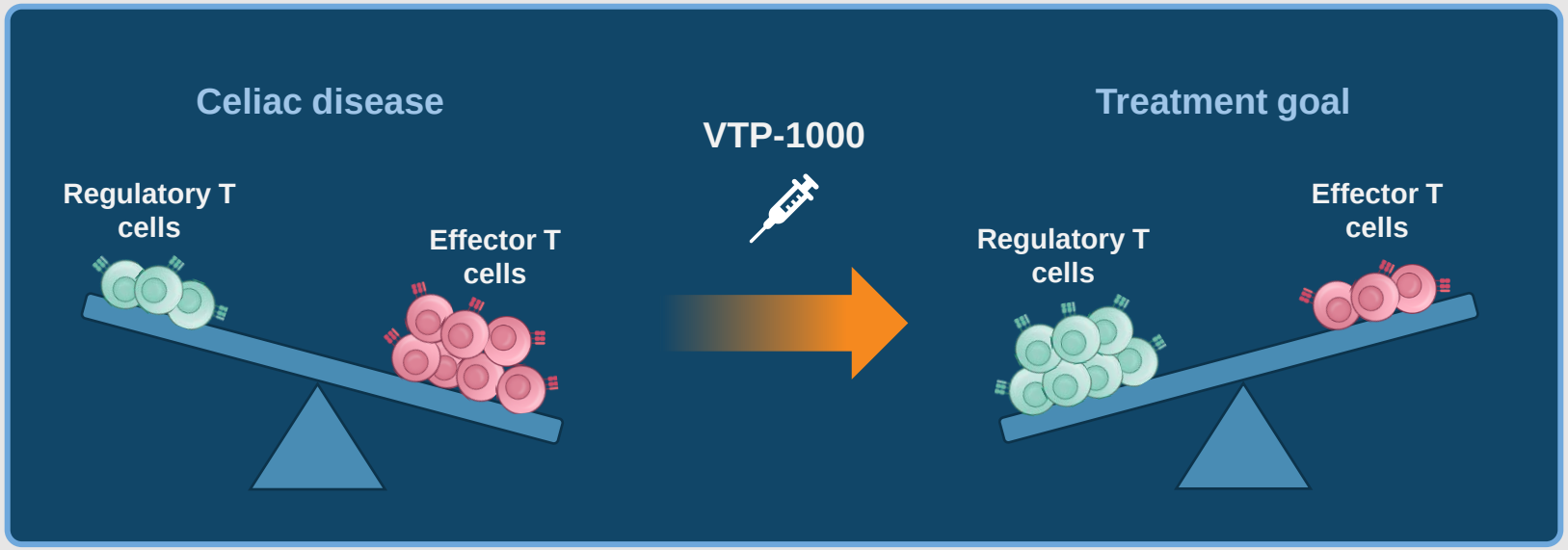
Celiac Disease: A Loss of Immune Tolerance to Gluten

Celiac disease is triggered by an immune response to gluten that **damages the small intestine** and can **cause long-lasting health problems**.

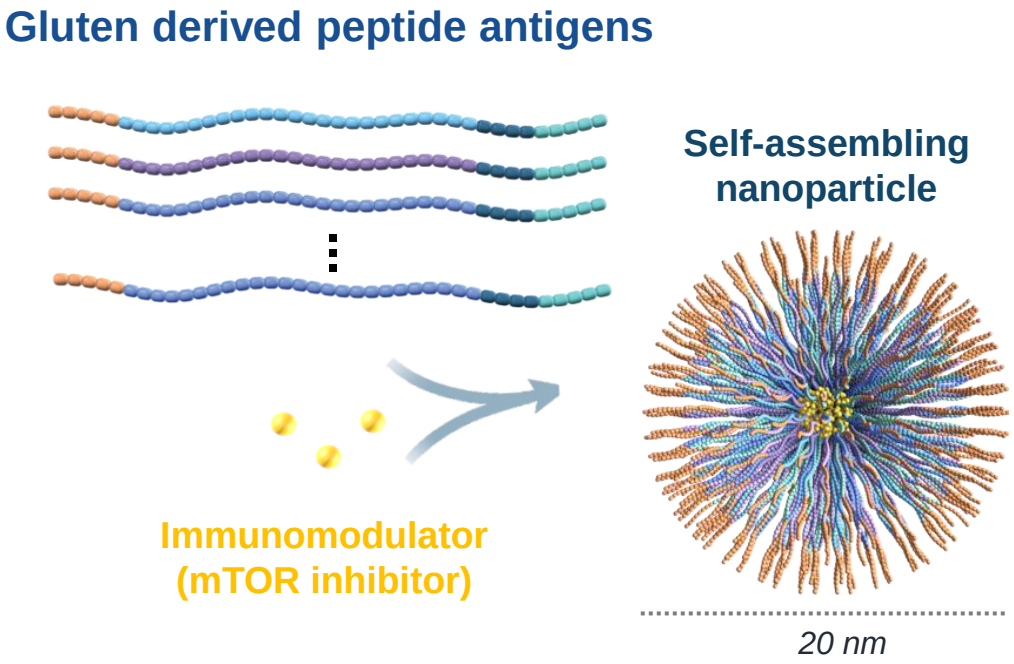
- In celiac disease, **effector T cells attack the lining of the small intestine**, **overwhelming the regulatory T cells** that usually prevent autoimmunity and unwanted inflammation.
- **VTP-1000 aims to induce tolerance** to gluten by **reducing effector T cells and increasing regulatory T cells** in a disease-specific manner to **guide the immune system to tolerate gluten**.
- The **overall goal** is to **prevent symptoms (and other consequences)** associated with inadvertent gluten ingestion in people with celiac disease.



VTP-1000 aims to restore the natural state of tolerance to gluten

VTP-1000: Clinical Stage Celiac Disease Immunotherapy

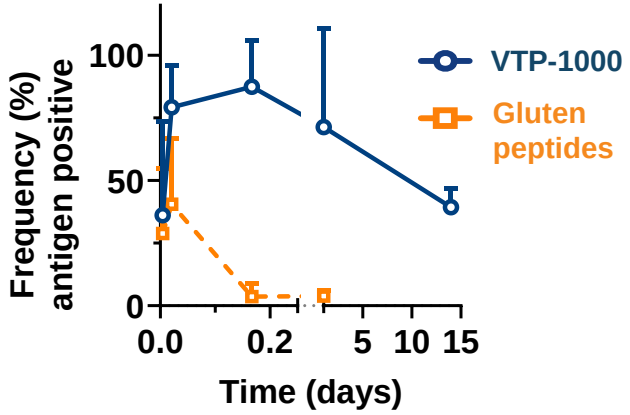
- Celiac disease has well-defined gluten-derived antigens
- Clinical POC in field that ASIT can mediate efficacy in Celiac
- VTP-1000 comprises key antigens from gluten proteins and the mTOR immunomodulator rapamycin
- VTP-1000 is administered by the IM route (simpler clinical paradigm)
- Preclinical data suggest nanoparticle and immunomodulator provide potential key advantages of
  - Improved Treg skewing
  - Reduced risk of antigen-associated inflammation
- Status: Phase 1 trial ongoing



VTP-1000 Preclinical Data Showed Potential Differentiated Profile

VTP-1000 accesses majority of APCs in lymphoid and disease tissue

VTP-1000 traffics to draining lymph nodes and remains detectable in APCs past day 15

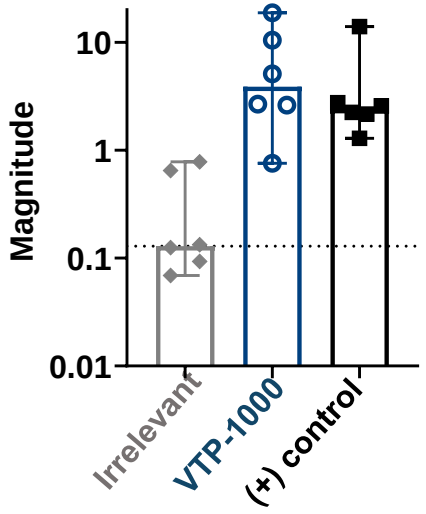


Other tissues

- ✓ **Liver**
- ✓ **Spleen**
- ✓ **Intestines**

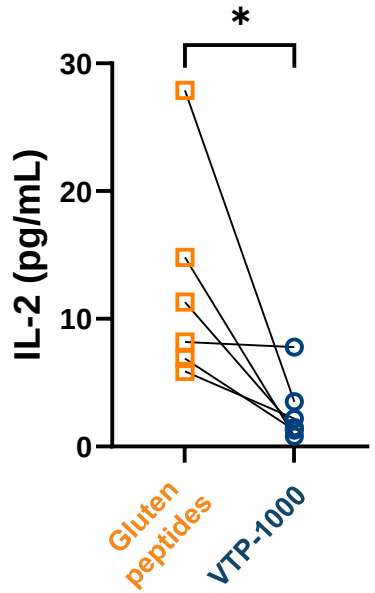
VTP-1000 antigens recognized by Celiac disease subjects (n=6)

Irrelevant antigens or VTP-1000 incubated with subject whole blood and assessed for recognition by T cells



VTP-1000 observed to reduce IL-2 and other inflammatory cytokines*

Gluten peptides or VTP-1000 incubated with subject (n=6) blood



*IL-1, IL-6, IL-8, TNF, IFNg, etc.

[1] Unpublished preclinical data, Barinthus Bio, Data on File.

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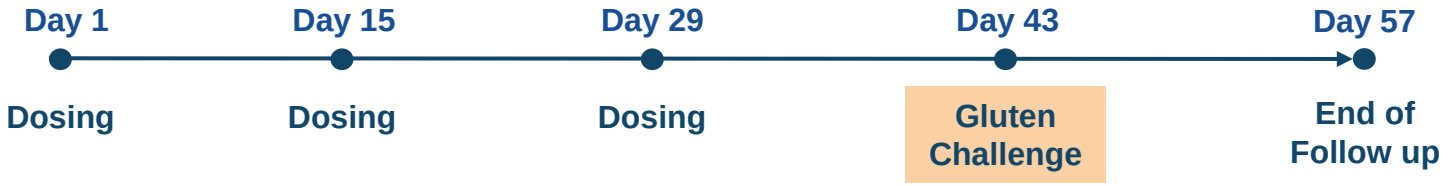
AVALON: Phase 1 – Trial Design, Initiated Q3 2024

Objective: **Evaluating safety and tolerability of single and multiple doses of VTP-1000 in participants with Celiac disease**

Part A – Single Ascending Dose (N=18)

Part B – Multiple Ascending Dose (N=24)



- **Sequential dosing levels:** 7-day gap from first 2 participants at each level and safety review before escalation to next dosing level.

Dose Levels	VTP-1000 (Part A/B)	Placebo
1	N=4/6	N=2
2	N=4/6	N=2
3	N=4/6	N=2

Key Inclusion Criteria

- Diagnosis of celiac disease as confirmed by positive serology and intestinal histology.
- Well-controlled, gluten restricted diet ≥12 months.

Key Primary Endpoints

- Safety: incidence of AEs and SAEs.
- Changes from baseline in anti-tissue transglutaminase immunoglobulin A antibodies.

Other Outcome Measures

- Serum cytokine (IL-2) concentrations.

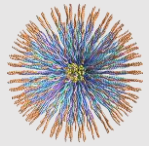
Next anticipated milestone:

Single ascending dose data: Q3 2025

Study Reference: NCT06310291

VTP-1000: The First Step Towards a Growing Pipeline

SNAP-TI Supporting Package



- ☑ Preclinical proof-of-concept in a variety of disease models:
  - Multiple Sclerosis
  - Vitiligo
  - Type 1 diabetes
- ☑ VTP-1000 GLP Tox complete
- ☑ VTP-1000 Phase 1 trial ongoing

Key Design Features

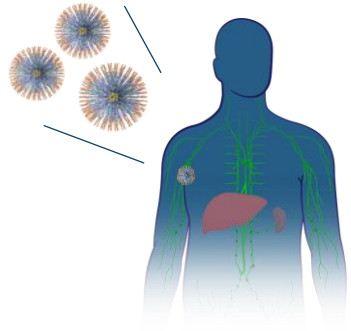
Optimal Design
- Self assembling 20 nm nanoparticle.
- Large loading capacity of a broad range of targetable antigens.

Lymph Node Targeting
- Optimally accesses lymph node APCs.
- Key for T cell immunity.

Co-delivered Immunomodulator
- Efficacy: Enhanced Treg/Teff ratio.
- Safety: Prevents antigen associated toxicity.

Ease of Route of Administration
- Intramuscular/subcutaneous injection.
- Key for patient compliance.

Broad Applicability:
- Range of disease-associated antigens
- Various disease mechanisms
- Different tissues



Diverse targetable indications
- *e.g.*, Celiac, Type 1 diabetes, Rheumatoid arthritis, Vitiligo, Primary biliary cholangitis and more…

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Viral Vector Platform Programs

Program Looking for Partners to Advance

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Guiding the immune system to cure disease

Barinthus Bio's Programs Based on Viral Platforms

For more information about these programs, please visit: www.barinthusbio.com/pipeline/

Viral Programs	Product Candidate*	Therapeutic For	Preclinical	Phase 1	Phase 2	Phase 3	Partner	Status/Anticipated Upcoming Milestones
Infectious Diseases	VTP-300 ◆ ✓	Chronic Hepatitis B						Phase 2b HBV003 primary analysis data (Q2 2025) Phase 2a IM-PROVE II data (Q2 2025)
Cancer	VTP-800/850 ✓	Prostate cancer						Phase 1 data (Q2 2025)
Prophylactic Vaccines	VTP-500 ✓	MERS					University of Oxford, CEPI	Initiation of Phase 2
	VTP-400 ✓	Zoster					CanSinoBIO (China)	Phase 1 ongoing

◆ Data supporting proof-of-concept announced ✓ Existing human clinical data

ChAdOx | ChAdOx + MVA

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These are estimated timelines only and our pipeline may be subject to change
ChAdOx: Chimpanzee Adenovirus Oxford
MVA: Modified vaccinia ankara.

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VTP-300

Hepatitis B Virus (HBV) Therapeutic

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Chronic HBV Infection Represents a Large Market Opportunity

There is an urgent need to develop effective therapeutic strategies to cure chronic HBV infection.

~254M Patients are **chronically infected** with HBV.[1]

1.2M **New HBV infections** per year.[1]

~ 13% Patients are **diagnosed.**[1]

Limitations of Current Treatments

- Existing therapies typically require **chronic treatment**.
- Standard of care nucleos(t)ide analogs (NUCs) are **slow-acting with low cure rates**.[2]
- Pegylated interferon has **significant side effects**.[3]
- **Less than 10% of patients achieve a functional cure with existing therapies**.[4]

HBV: hepatitis B virus

[1] WHO, Global hepatitis report, 2024. [2] Broquetas T and Carrion JA, *Hepat Med*. 2002;14:87-100. [3] Van Zonneveld M, et al, *Aliment Pharmacol Ther*. 2005;21(9):1163-71. [4] Boyd A, et al, Viruses. 2021 Jul 11;13(7):1341

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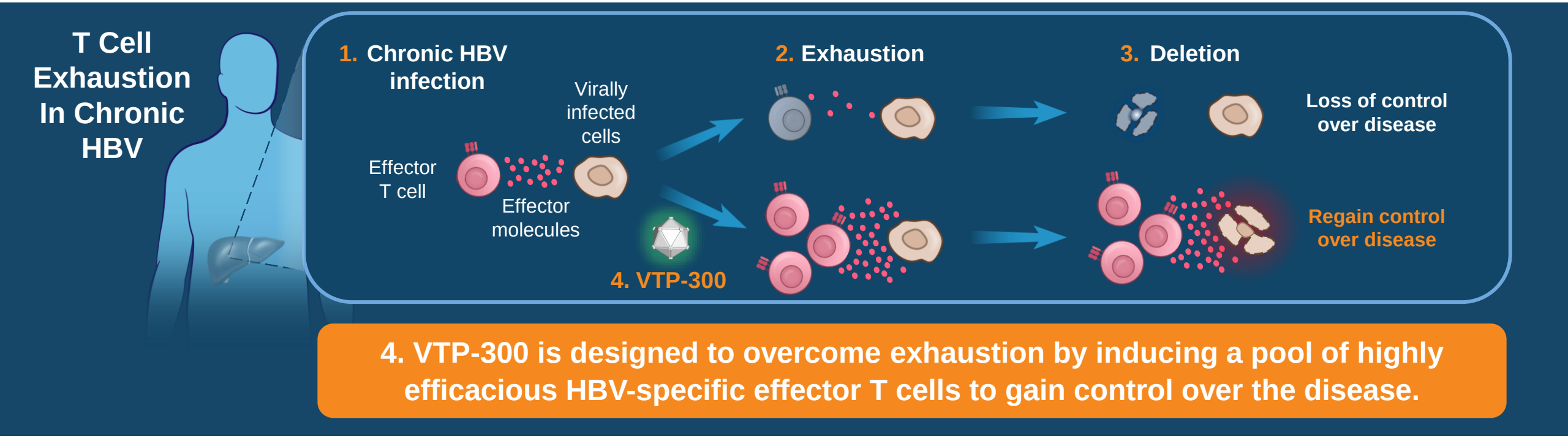
Chronic HBV Infection Leads to T Cell Exhaustion

1. Chronic exposure to HBV and HBsAg can lead to **T cell exhaustion**.

2. Exhausted T cells **lose their functions**, resulting in decreased secretion of cytokines and killing molecules.

3. In **severe stages of exhaustion**, HBV specific T cells can be deleted, leading to the **loss of HBV-specific T cell response** and **no control of the disease**.



4. VTP-300 is designed to overcome exhaustion by inducing a pool of highly efficacious HBV-specific effector T cells to gain control over the disease.

HBsAg: Hepatitis B surface antigen

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A Combined Approach is Needed for Functional Cure

Experts agree that a functional cure will likely require a combination of agents with complementary mechanisms of action. **VTP-300** is an investigational antigen-specific immunotherapy based on viral vectors designed to stimulate a host immune response by inducing disease-specific effector T cells.

Three potential components to a functional cure

Inhibit viral replication	Directly **lower** HBsAg burden	**Stimulate** host immune system response	AASLD **Functional Cure** Definition
NUCs (*Current standard of care*)	RNAi	**Antigen-specific immunotherapies (VTP-300)**	• HBsAg loss,
Capsid & Entry Inhibitors (*Investigational*)	Oligonucleotide	PD-1 Inhibitors	• HBV DNA loss, and
	Monoclonal antibodies (mAbs)	Immunostimulants (TLR agonists)	• Off NUC therapy, sustained for at least 6 months.

VTP-300 is designed to engage the host immune system and has been shown to induce sustained HBsAg reduction in ongoing trials.[1]

[1] Based on interim data, data cut off date: April 15, 2024.

HBsAb: Hepatitis B surface antibody

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HBV003: Phase 2b Trial – Enrolment Complete

VTP-300 + Low-dose nivolumab (LDN), N=69, with baseline HBsAg ≤200 IU/mL*

Objective: Evaluating Additional Dosing and PD-1 Inhibition Timing

Inclusion Criteria

- HBV DNA ≤1,000 IU/mL.
- HBsAg ≤200 IU/mL.*
- On NUCs for ≥6 months.

Primary Endpoint

- % participants with a greater than 1 log HBsAg reduction at 6 months after initiation of therapy.

Secondary Endpoints

- Safety: incidence of AEs and SAEs.
- T cell response.

HBV003 results will inform treatment dosing regimen

Group 1: Mirrors Group 3 in HBV002 to further support response effect observed.

Group 2: Assesses if additional dose of MVA-HBV with LDN at Day 85 further reduces HBsAg.

Group 3: Assesses if delaying LDN until after MVA-HBV is more optimal (plus adds option of 2nd MVA-HBV dose).

Next anticipated readout:

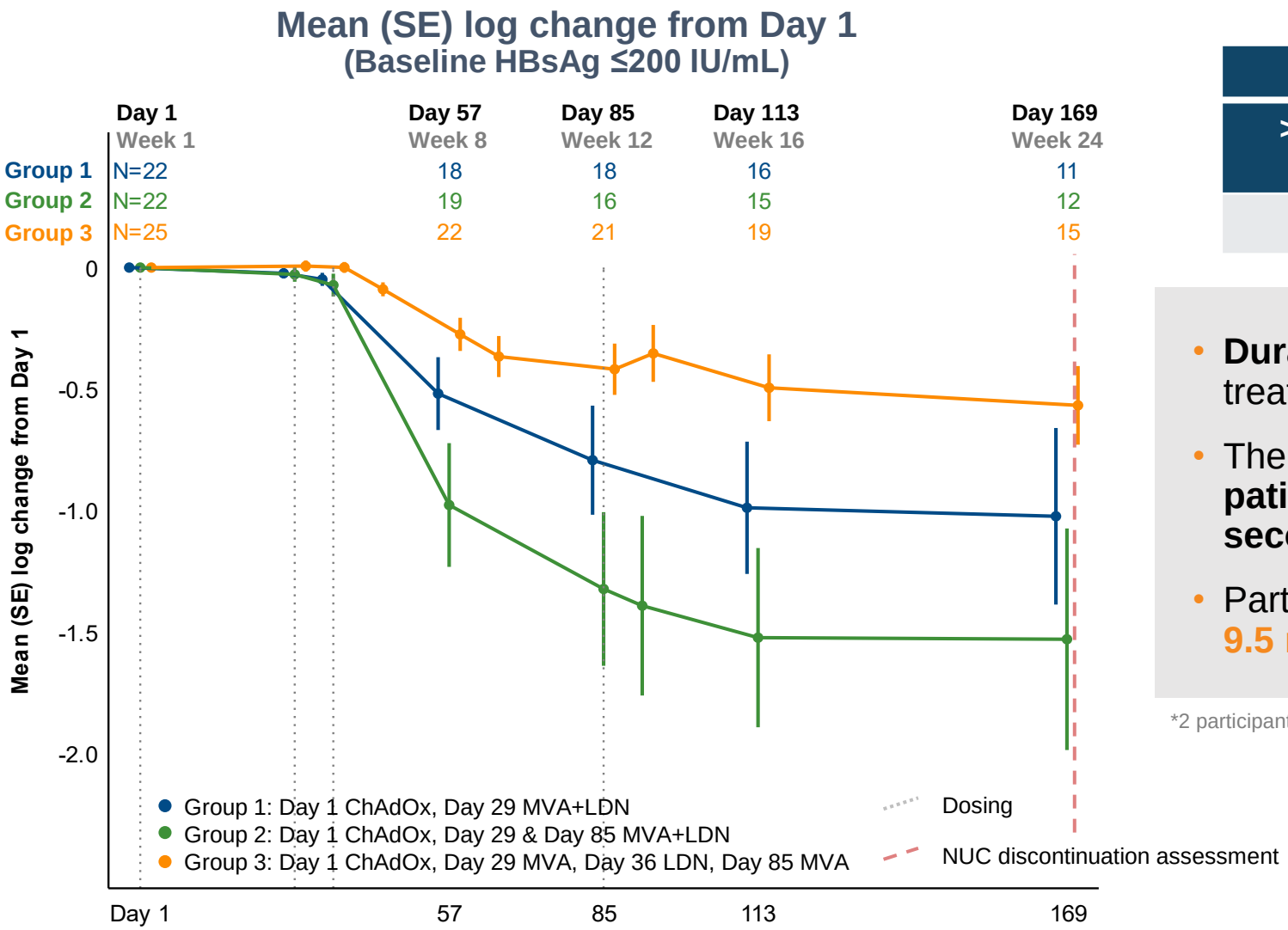
Q2 2025

Study Reference: NCT05343481

ALT: Alanine aminotransferase; **LLOQ:** lower limit of quantification; **ULN**: upper limit of normal; **HBeAg:** Hepatitis B e Antigen.

*Inclusion criteria were amended in 2023 to focus on participants with HBsAg ≤200 IU/mL, as such data now focuses on this group.

HBV003: Durable HBsAg Declines Observed



Participants, baseline HBsAg ≤200 IU/mL	
>1 log reduction at Day 169	HBsAg loss (<LLOQ), any time
29% (11/38)	8*

- **Durable HBsAg declines** were observed in all treatment groups.
- There was a **trend toward stronger responses in patients who received LDN at the time of the second VTP-300 dose** (Groups 1 & 2).
- Participants have **maintained HBsAg loss for up to 9.5 months**.

*2 participants achieved HBsAg loss after Day 169.

Interim data, presented at AASLD 2024. Data cut off was September 30, 2024, for lab data and October 8, 2024, for clinical data.

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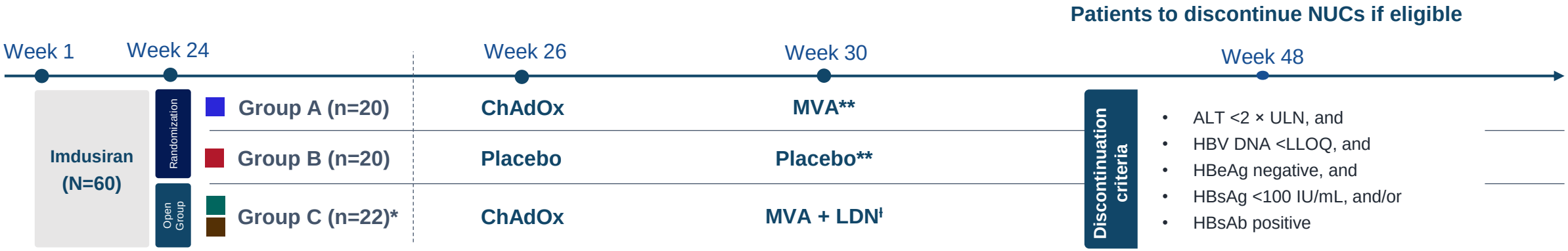
IM-PROVE II: Phase 2a – Collaboration with Arbutus

Imdusiran (RNAi) + VTP-300 +/- LDN, N=60 – Enrolment complete

Trial expanded in Q4 2022 to include an arm with LDN



Inclusion Criteria

- HBV DNA ≤20 IU/mL.
- HBsAg ≥100 to <5,000 IU/mL.
- On NUCs for at least 1 year.

Next anticipated readout:

Q2 2025

Primary Endpoints

- Safety: incidence of AEs and SAEs.

Secondary Endpoints

- Change in HBsAg concentration from baseline.
- Proportion of participants with a change in HBsAg from baseline meeting response criteria (≥0.5, 1, 2, or 3 log10 reduction).
- Change in HBV DNA, RNA, core-related antigen, HBsAg antibody, HBsAg e-antibody from baseline.

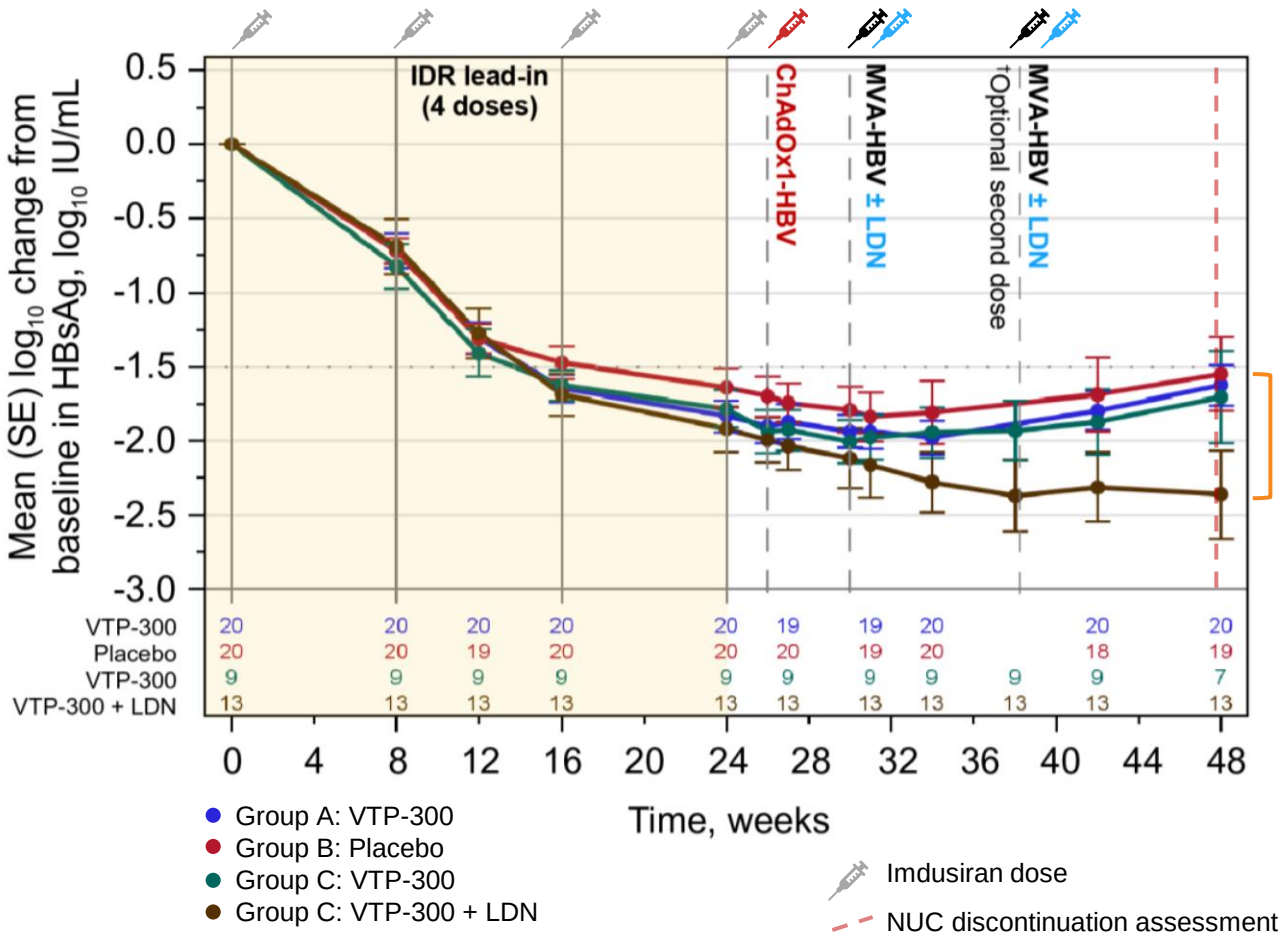
LDN: Low-dose nivolumab **ALT**: Alanine aminotransferase; **LLOQ:** lower limit of quantification; **ULN**: upper limit of normal.
*13/22 participants received VTP-300+LDN, 9/22 received VTP-300.
**Additional MVA/Placebo to be dosed at Week 38, if patients have experienced a ≥0.5 log drop in HBsAg from Week 26 to Week 34.
‡Additional MVA+LDN to be dosed at Week 38, if patients have HBsAg ≥10 IU/mL at Week 34.

IM-PROVE II: Imdusiran, VTP-300 and LDN Showed Significantly Greater HBsAg Decline

VTP-300

Arbutus BIOPHARMA

Mean HBsAg Change from Baseline by Treatment Group



Statistically significant difference*

	Group C (N=22)**	
Treatment	Imdusiran lead in, VTP-300 + LDN	Imdusiran lead in, VTP-300
Participants	13/22	9/22

- **Group C participants receiving imdusiran, VTP-300 and LDN had a significantly greater mean HBsAg log_{10} decline at Week 48** compared with all other groups.
- Participants in Group C who received VTP-300 + LDN were **more likely to reach HBsAg values <100 and <10 IU/mL**.

*P=0.017. ANCOVA adjusted for baseline HBsAg.
**Some participants were not eligible for LDN under the trial criteria.

Interim data, presented at AASLD 2024.

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VTP-300 Trials Overview – Q4 2024 Update

Key updates in these data from those previously presented at EASL in the second quarter of 2024 include:

EASL June 24’	AASLD Nov 24’	HBV003 – Phase 2b
21	**38**	participants out to **week 24**.
4	**8**	participants have had **achieved HBsAg loss** at any time.
-	**2/6**	participants **met criteria for functional cure** to date.
-	**2/6**	participants off NUC therapy **seroconverted to HBsAb positivity**.
Durable HBsAg declines continue to be observed in all treatment groups.		
Participants have **maintained HBsAg loss for up to 9.5 months**.		

EASL June 24’	AASLD Nov 24’[ł]	IM-PROVE II – Phase 2a
38	**58**	participants out to **week 48.**
11	**11**	participants out to **week 72.**
1	**1**	**VTP-300 participant (Group A) reached HBsAg undetectable at Week 72.**
-	**3**	**VTP-300 + LDN participants (Group C) achieved HBsAg loss by Week 48.**
Participants **receiving VTP-300 + LDN (Group C) had a significantly greater mean HBsAg log_{10} decline at Week 48** compared with all other groups.		
More participants receiving VTP-300 + LDN had HBsAg <10 IU/mL at Week 48 than other groups.		

Next anticipated readout for both trials:
Q2 2025

[ł]Only updated data on Group C were presented at AASLD in November 2024.

Company Highlights

BARINTHUS BIOTHERAPEUTICS

Guiding the immune system to cure disease

Financial Overview and Catalysts

Guiding the immune system to cure disease

Cash
$112 million[1] as of December 31, 2024
No debt or outstanding warrants
Estimated cash runway into 2027[1]

Expected near-term catalysts[2]

- **Q2 2025**
  - **VTP-850 (Prostate)**: Phase 1 results
  - **VTP-300 (HBV)**: Phase 2b HBV003 primary analysis
  - **VTP-300 (HBV)**: Phase 2b IM-PROVE II data
- **Q3 2025**
  - **VTP-1000 (Celiac)**: Phase 1 single ascending dose data

[1] As of December 31, 2024; preliminary estimate based on management's current views and may change as a result of management's review of results and other factors. The preliminary financial estimate of the Company's cash as of December 31, 2024, may not ultimately be indicative of the Company's results for such periods and actual results may differ materially from those described above. No independent registered public accounting firm has audited, reviewed or compiled, examined or performed any procedures with respect to these preliminary results, nor have they expressed any opinion or any other form of assurance on these preliminary estimated results.

[2] Based on managements current estimates on expected clinical data milestones.

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Thank You

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