

VBI
VACCINES

ACTIVATING THE POWER WITHIN

Corporate Overview

Forward-Looking Statements

Certain statements in this presentation that are forward-looking and not statements of historical fact are forward-looking statements within the meaning of the safe harbor provisions of the Private Securities Litigation Reform Act of 1995 and are forward-looking information within the meaning of Canadian securities laws (collectively “forward-looking statements”). The company cautions that such statements involve risks and uncertainties that may materially affect the company's results of operations. Such forward-looking statements are based on the beliefs of management as well as assumptions made by and information currently available to management. Actual results could differ materially from those contemplated by the forward-looking statements as a result of certain factors, including but not limited to the ability to establish that potential products are efficacious or safe in preclinical or clinical trials; the ability to establish or maintain collaborations on the development of therapeutic candidates; the impact of the recent COVID-19 outbreak on our clinical studies, manufacturing, business plan and the global economy; the ability to obtain appropriate or necessary governmental approvals to market potential products, including the approval of Sci-B-Vac® in the U.S., Europe, and Canada following the completion of its recent Phase 3 studies; the ability to obtain future funding for developmental products and working capital and to obtain such funding on commercially reasonable terms; the company's ability to manufacture product candidates on a commercial scale or in collaborations with third parties; changes in the size and nature of competitors; the ability to retain key executives and scientists; and the ability to secure and enforce legal rights related to the company's products, including patent protection. A discussion of these and other factors, including risks and uncertainties with respect to the company, is set forth in the Company's filings with the Securities and Exchange Commission and the Canadian securities authorities, including its Annual Report on Form 10-K filed with the Securities and Exchange Commission on March 2, 2021, and filed with the Canadian security authorities at [sedar.com](https://www.sedar.com) on March 2, 2021, and may be supplemented or amended by the Company's Quarterly Reports on Form 10-Q. The company disclaims any intention or obligation to revise any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by law.



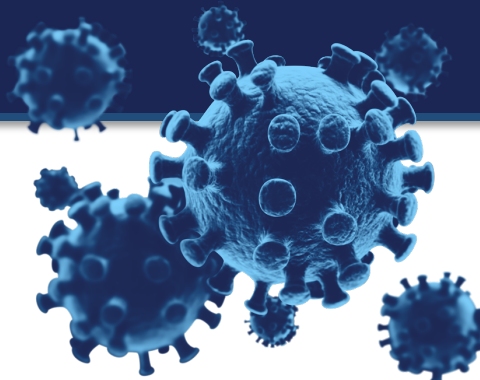
About VBI : Immune to Limitations



We are a biotechnology company **driven by immunology** in the pursuit of powerful prevention and treatment of disease



Through our innovative approach to **virus-like particles**, our vision is to stimulate and amplify the human immune system to **target and overcome significant, aggressive, and urgent infectious diseases and cancers**

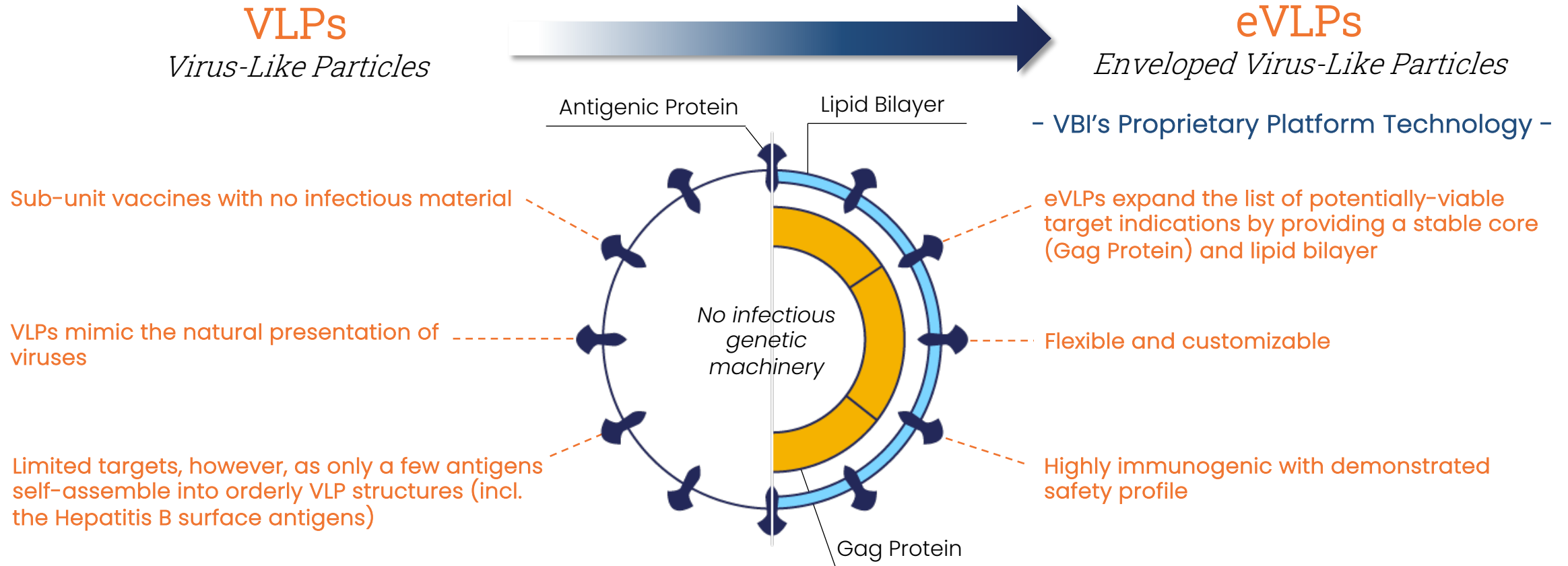


Our belief in the importance of **protecting and enhancing human life** is at the core of everything we do



The Science of Virus-Like Particles (VLPs)

Transforming natural immunity into potent protection and treatment



VBI's pipeline programs consist of both self-assembling VLP candidates and eVLP candidates

VBI's Pipeline : Both Sides of the Fight

VBI's broad spectrum of vaccine and immunotherapeutic candidates are designed to power the immune system to prevent and treat disease

Prophylactic Candidates

Disease	Program	Technology	Preclinical	Phase 1	Phase 2	Phase 3	Approved
Hepatitis B (HBV)	3-Antigen Vaccine Candidate	VLP					Approved in Israel as Sci-B-Vac®
Cytomegalovirus (CMV)	VBI-1501	eVLP					
COVID-19 (Ancestral)	VBI-2902 (monovalent)	eVLP					
COVID-19 (Beta Variant)	VBI-2905 (monovalent)	eVLP					
Coronaviruses	VBI-2901 (multivalent)	eVLP					
Coronaviruses	Undisclosed (multivalent)	eVLP					
Zika	VBI-2501	eVLP					

Therapeutic Candidates

Disease	Program	Technology	Preclinical	Phase 1	Phase 2	Phase 3	Approved
Hepatitis B (HBV)	VBI-2601 (BRIL-179)	VLP					
Glioblastoma (GBM)	VBI-1901	eVLP					
Other CMV+ Tumors	Undisclosed	eVLP					



2020 & 2021 Set to Transform VBI (1)

Recent Achievements

Strong Financial Position

- ✓ Ended Q2 2021 with \$135.0M on balance sheet
- ✓ **Coronavirus Vaccine Collaborations** : Ongoing collaborations with CEPI (up to USD\$33M) and the Government of Canada (up to CAD\$56M) to support development of coronavirus programs
- ✓ **Secured Debt Funding** : \$32M drawn to-date from \$52M debt financing package with K2 HealthVentures

Path to Approval for 3-Antigen Hepatitis B Vaccine in U.S., Europe, & Canada

- ✓ **Regulatory Approval Applications** : BLA (U.S.) and MAA (Europe) accepted for review in January 2021 and December 2020, respectively
- ✓ **Peer-Reviewed Publication of Key Results** :
 - January 2021: Phase 4 immunogenicity and safety results in younger adults (age 20-40) published in *Vaccine*
 - May 2021: PROTECT Phase 3 immunogenicity and safety study data in adults age 18+ published in *The Lancet Infectious Diseases*
 - June 2021: Phase 3 immunogenicity and safety results in healthy Asian adults published in *Vaccine*

Advancement and Expansion of VBI's Development Pipeline

- ✓ **April 2021** : High-dose Phase 1b/2a data announced supporting initiation of **first-in-class Phase 2 combination study** assessing VBI-2601 (BR11-179), VBI's immunotherapeutic hepatitis B candidate, and BR11-835 (VIR-2218), Vir's investigational siRNA, as potential functional cure regimen
- ✓ **June 2021** : **FDA Fast Track Designation** granted for VBI-1901 + GM-CSF in **first recurrent GBM patients** based upon encouraging tumor response data and improvements in overall survival compared to historical controls, as presented at ASCO 2021
- ✓ **June 2021** : Initial positive Phase 1 data of **VBI-2902 (monovalent ancestral COVID-19)** announced, establishing robust human proof-of-concept for eVLP platform against COVID-19
- ✓ **September 2021** : First subject dosed in Phase 1b study evaluating **VBI-2905 (monovalent Beta variant)** as both a 2-dose regimen in unvaccinated adults and 1-dose heterologous booster in adults previously vaccinated with an approved mRNA vaccine



2020 & 2021 Set to Transform VBI

Anticipated Upcoming Milestones

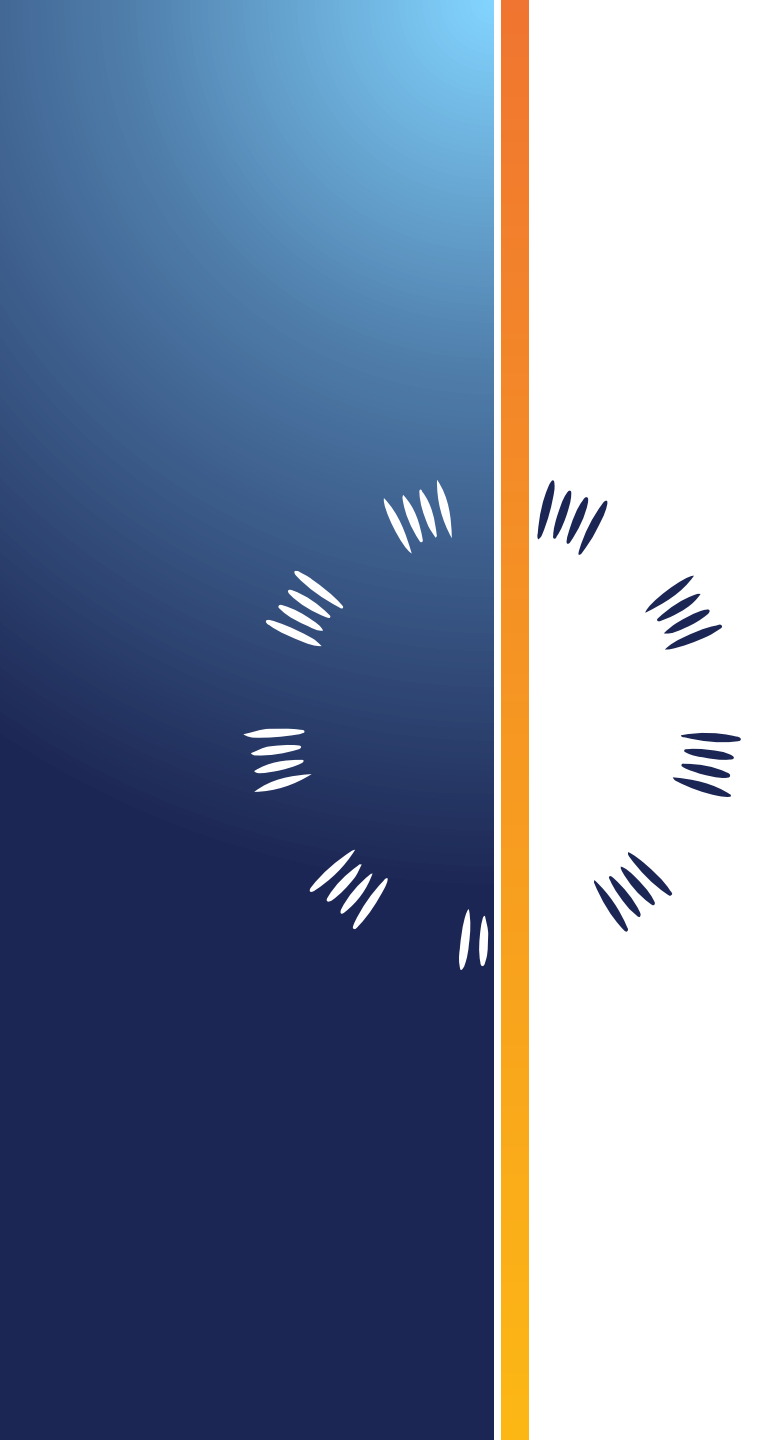
Path to Approval for 3-Antigen Hepatitis B Vaccine Candidate in the U.S., Europe, and Canada

- November 30, 2021 : U.S. PDUFA target action date
- 2021 : EMA (Europe) review process ongoing
- 2021 : Submission to UK MHRA and Health Canada are in process and expected to complete in 2021

Advancement and Expansion of VBI's Development Pipeline

- Q4 2021 : Expected initiation of VBI-1901 (GBM) randomized, controlled study, with potential to yield registrational data
- Early Q1 2022 : Data expected from Phase 1b study of VBI-2905 (monovalent Beta variant), subject to speed of enrollment
- H1 2022 : First clinical study of VBI-2901 (trivalent pan-coronavirus) expected to begin
- H2 2022 : Interim clinical data from Phase 2 combination study of VBI-2601 (BR11-179) and BR11-835 (VIR-2218) expected





Hepatitis B (HBV)

The Hepatitis B Virus (HBV) Remains a Significant and Persistent Global Health Problem

HBV infection is the most common blood-borne infection, with an estimated 240M–350M chronically-infected individuals worldwide

U.S. & Europe : HBV Disease Burden and Challenges



Suboptimal surveillance results in under-representation of true disease burden

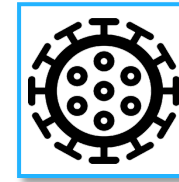
No. of chronically-infected adults:

- 2018 U.S. surveillance data estimates **862,000 adults**, but may be as high as **2.2 million**¹
- European estimates report **~5 million** are chronically infected²



Acute HBV disease rates have increased in recent years

- U.S. acute HBV Adult Infections **increased 11%** from 2014–2018³
- In Europe, the highest rate of acute infections is among **35–44-year-olds**⁴



Low awareness of infection status leads to increased risk of transmission

- **68%** of chronically-infected adults in the U.S. are **unaware of their infection status**⁵
- A recent ECDC survey showed proportion of **undiagnosed infections range between 45%–85%**²



Adult vaccination rates remain persistently low

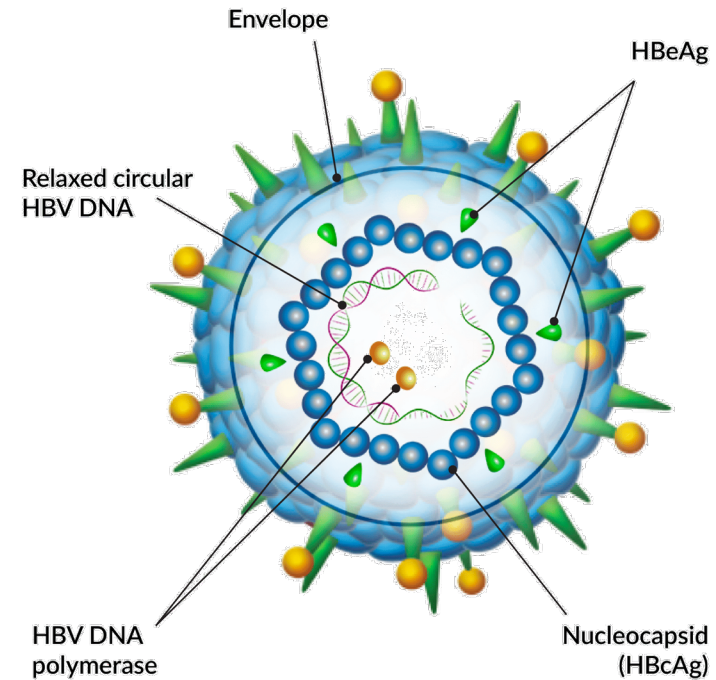
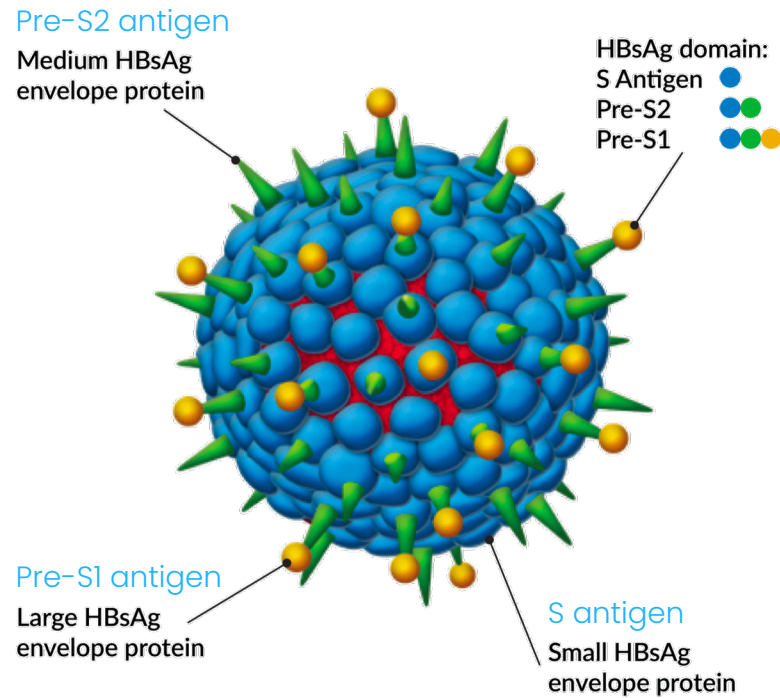
- The 2017 reported U.S. HBV vaccination rate for adults age 19+ was **only 25.8%**, leaving almost **200 million unprotected adults**⁶



Sources: ¹HHS Viral Hepatitis in the United States: Data and Trends. ²ECDC: Around 9 Million Europeans are Affected By Chronic Hepatitis B or C. European Centre for Disease Prevention and Control, July 26, 2017. ³HHS Viral Hepatitis National Strategic Plan for the United States: A Roadmap to Elimination (2021–2025). ⁴ECDC: Hepatitis B – Annual Epidemiological Report for 2017, Jun 17 2019. ⁵Hepatitis B Basic Information – U.S. Department of Health & Human Services, August 2020. ⁶Vaccination coverage among adults in the United States, National Health Interview Survey, 2017. Centers for Disease Control and Prevention.

Hepatitis B Virus (HBV) Structure

HBV genome encodes for three distinct variants of the surface antigen, all of which are present on the surface of a wildtype virus – pre-S1, pre-S2, and S antigens



The pre-S1 and pre-S2 regions of HBV contain hepatocyte receptor binding sites

VBI is Committed to the Fight Against Hepatitis B

Effective elimination of HBV will require both improved preventative interventions and the development of a functional cure

Prevention

VBI Candidate :

3-antigen prophylactic vaccine candidate

(licensed in Israel as Sci-B-Vac®)

- Scientifically differentiated approach to vaccination against HBV
- Only vaccine candidate to express all 3 surface antigens of the HBV virus, pre-S1, pre-S2, and S (vs. just single S antigen)
- Manufactured in mammalian cells (vs. yeast)
- Adjuvanted with alum

Treatment

VBI Candidate :

VBI-2601 : HBV immunotherapeutic candidate

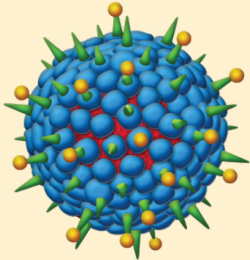
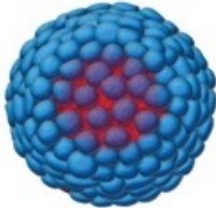
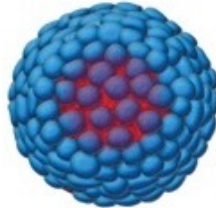
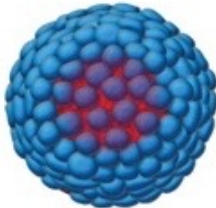
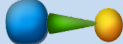
- Similar 3-antigen conformation as the preventative vaccine, but reformulated to enhance T cell responses
- In development with partner Bii Biosciences

Both of VBI's HBV candidates mimic the natural 3-antigen presentation of the wild type Hepatitis B virus



VBI's 3-Antigen HBV Vaccine Candidate is Scientifically Differentiated from Other Approved HBV Vaccines

Only HBV vaccine candidate to express three hepatitis B surface antigens and to be manufactured in mammalian cells (vs. yeast)

	3-Antigen HBV Vaccine Candidate	Engerix-B® (also included in Twinrix®)	Recombivax HB®	Heplisav-B®
				
Viral antigens mimicked:				
S Antigen 	✓	✓	✓	✓
Pre-S2 Antigen 	✓			
Pre-S1 Antigen 	✓			
Dose of HBs Antigens:	10µg	20µg	10µg or 40µg (HD)	20µg
Adjuvant:	500µg Aluminum hydroxide	500µg Aluminum hydroxide	500µg Aluminum hydroxide	3000µg CpG 1018
Derivation:	Mammalian (CHO) Cell	rDNA yeast	rDNA yeast	rDNA yeast

Note: Head-to-head studies of the 3-antigen HBV vaccine candidate vs. Recombivax HB or Heplisav-B have not been conducted – safety and efficacy cannot be compared across these products



Results from Global Phase 3 Program

4,445 adults were enrolled in two Phase 3 studies beginning in 2017 – PROTECT and CONSTANT – designed to assess safety, tolerability, immunogenicity, and manufacturing consistency of VBI's 3-antigen HBV vaccine candidate

Pivotal Phase 3 Program Highlights

- **Safety** : Safety profile observed in the Phase 3 program was consistent with the known safety profile of the vaccine candidate – no new or unexpected safety signals observed
- **Immunogenicity** :
 - **Higher rates of seroprotection*** (SPR) and higher geometric mean concentrations (GMCs) of anti-HBs titers in all adults (age 18+)
 - **Robust immunogenicity regardless of age** – statistical and clinical superiority (as defined in the protocol) achieved in adults age 45+ in PROTECT study
 - **Rapid onset of protection**, notably in younger adults where ~90% were protected after 2 doses of VBI's vaccine candidate
 - **Improved immunogenicity in adults with immunocompromising comorbidities** – these conditions result in reduced immunogenicity to standard-of-care HBV vaccines, and place adults at a high risk of HBV infection and/or more serious complications if infected with HBV
- **Lot-to-lot manufacturing** : Consistency of manufacturing was demonstrated across 3 lots of VBI's 3-antigen HBV vaccine candidate



*Seroprotection (SPR) defined as % of subjects with anti-HBs titers ≥ 10 mIU/mL

PROTECT Phase 3 Results: Higher SPRs and Anti-HBs Titers Across Subgroups

Table 6.3 Population	# of Subjects (N)		Seroprotection Rates* (SPR) at Day 196			GMC of Anti-HBs Titers at Day 196		
	Engerix-B (EB)	VBI Candidate	EB	VBI	Difference in SPRs : VBI – EB	EB	VBI	Increase of GMC Anti-HBs Titers : VBI/EB
All Subjects	723	718	76.5%	91.4%		192.6	1148.2	6.0x
Age								
18-44 years	135	125	91.1%	99.2%		720.6	4570.4	6.3x
45-64 years	322	325	80.1%	94.8%		276.5	1577.3	5.7x
>= 65 years	266	268	64.7%	83.6%		63.7	410.2	6.4x
18-39 years	72	71	93.1%	100.0%		903.3	5164.2	5.7x
40-49 years	143	158	89.5%	98.7%		645.7	2869.6	4.4x
50-59 years	164	153	78.1%	92.8%		211.6	1250.0	5.9x
60-69 years	229	221	72.1%	89.1%		122.9	780.5	6.4x
>=70 years	115	115	56.5%	78.3%		34.8	241.8	6.9x
Diabetes								
Yes	60	54	58.3%	83.3%		41.3	222.3	5.4x
No	663	664	78.1%	92.0%		221.4	1312.2	5.9x
BMI								
> 30 kg/m ²	254	269	68.1%	89.2%		110.0	884.0	8.0x
≤ 30 kg/m ²	469	449	81.0%	92.7%		260.9	1343.0	5.1x

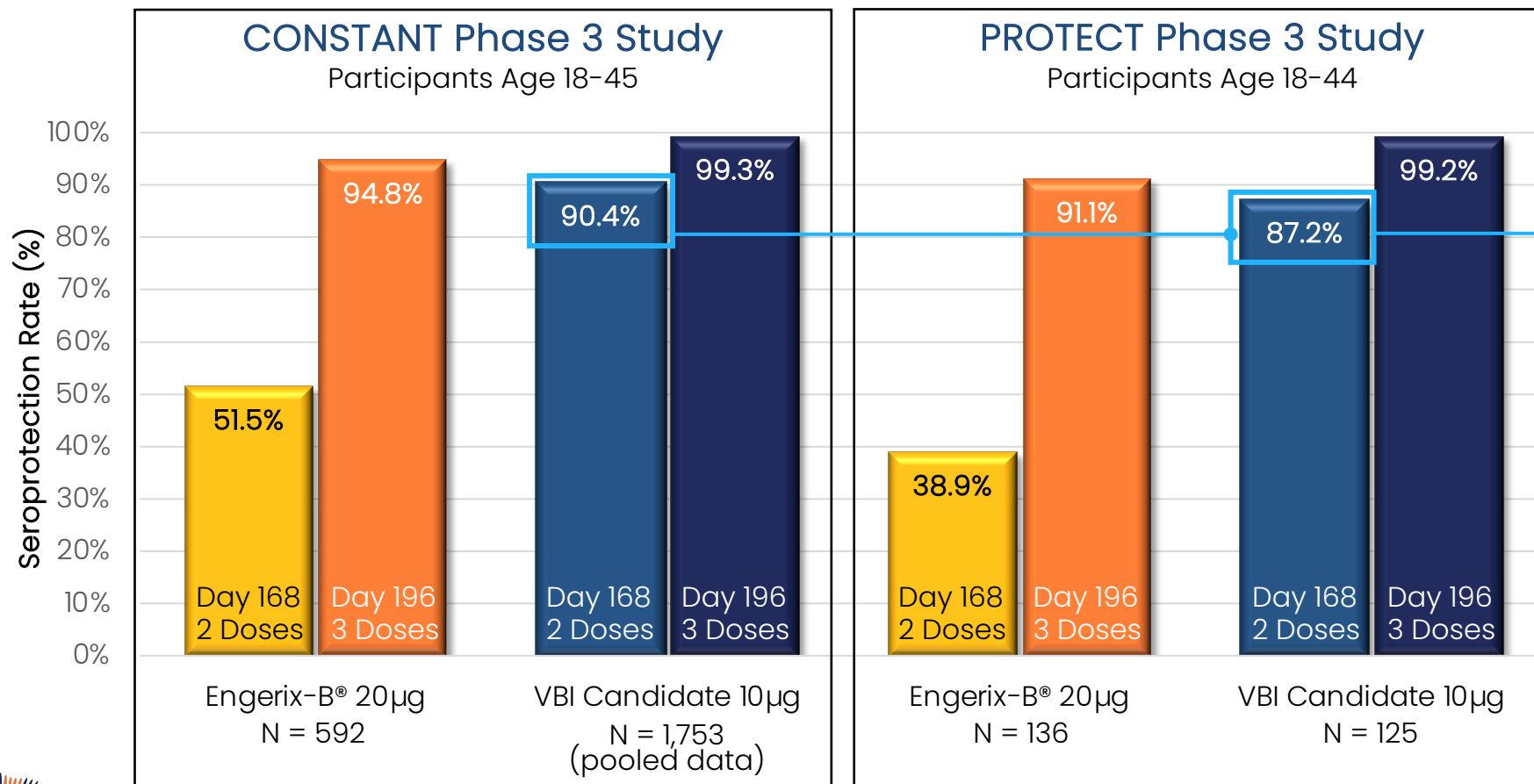
-10% 0% 10% 20% 30% 40%



*Seroprotection rate (SPR) defined as % of subjects with anti-HBs titers ≥ 10 mIU/mL
BMI, body mass index; SPR, seroprotection rate; GMC, geometric mean concentration; EB, Engerix-B

PROTECT & CONSTANT Phase 3 Results: Higher SPR after Both 2 and 3 Doses in Adults Age 18-45

~66% of U.S. acute HBV cases reported in 2018 were in adults under the age of 50 years



On average, ~90% of adults age 18-45 vaccinated with VBI's vaccine candidate were protected after 2 doses (Day 168) vs. ~40-50% of those who received Engerix-B

Seroprotection Rate (SPR) defined as percent (%) of participants with anti-HBs titers ≥ 10 mIU/mL



Key Unmet Medical Need & Market Segmentation

2019 U.S. adult Hepatitis B vaccine market

~\$320 M

(~5.7 million doses)

However, public health action plans include objectives to increase the U.S. adult vaccination rates
(current rate for age 19+ is ~25%)



	Target Population	Key Product Attributes Driving Use	Est. Unvaccinated Population
Adult Population (Age 18+)			
Young, "Otherwise Healthy"	- Public service sector workers (incl. HCWs) - Military - Pre-diabetics	- Earlier Seroprotection - Cost	US : 5M+ EU : 5M+ Total : 10M+ (conservative estimate)
Older Adults	Age 45+	- Improved Seroprotection rates - Safety	US : 50M EU : 35M Total : 85M
Immuno-compromised/High-Risk Adults	- Diabetics - CKD/ESRD patients - Other high-risk populations	- Improved Seroprotection rates - Safety	US : 30M EU : 20M Total : 50M
Pediatric Population (Age 0-17)			
High-risk, Immuno-compromised Newborns	Children born: - With immuno-compromising conditions (e.g., Thalassemia) - To HBV-infected mothers - In high endemic areas	- Improved Seroprotection rates - Safety	~8M births each year in US/EU ~75,000 births to HBV+ mothers ~1/2,000 children are born with a primary immuno-compromising condition

The Road to Commercialization

Commercialization Partnership :

- To prepare for the potential commercial launch of VBI's 3-antigen HBV vaccine candidate in the U.S., Europe, and Canada, VBI entered into a partnership with Syneos Health
- VBI and Syneos have been working together since 2019, but recently expanded their relationship to incorporate full-service commercialization solutions and to build the leadership team and field teams dedicated to VBI
- Syneos Health selected as partner for their robust and innovative commercialization experience and deep vaccine expertise, including successful partnerships with leading vaccine manufacturers



Upcoming Milestones :

- BLA under review by FDA – PDUFA target date set for November 30, 2021
- MAA under review by EMA, review ongoing
- Submission to UK MHRA and Health Canada are in process and are expected to complete in 2021



VBI-2601 : Potential to be a Critical Component of a Functional Cure for HBV Infection

Scientific consensus is that a functional cure for HBV is within reach, but will likely require the use of an immunotherapeutic as part of a combination approach

A functional cure will likely require the achievement of :

1. Drive down hepatitis B virus (HBV) DNA
2. Drive down immuno-suppressive HBV S-antigen
3. Achieve long-term immunologic control



Phase 1b/2a Study Design & Objectives

Study Designed & Executed in Partnership with Bii Biosciences

- Two-part, multi-center, controlled, dose-escalation study of VBI-2601 in patients with chronic HBV infection to assess safety, tolerability, and antiviral activity
- The study enrolled 46 patients:
 - Study Part 1 :
 - Cohort A : NUC-only control
 - Cohort B : VBI-2601 (20 µg dose)
 - Cohort C : VBI-2601 (20 µg dose) + interferon-alpha (IFN-α)
 - Study Part 2 :
 - Cohort D : VBI-2601 (40 µg dose)
 - Cohort E : VBI-2601 (40 µg dose) + IFN-α
- The study was conducted at clinical study sites in Australia, New Zealand, Thailand, South Korea, Hong Kong, and China
- Key objectives : Re-stimulation of HBV immunity – antibody responses to HBV surface antigens (S, Pre-S1, Pre-S2), HBV-specific T cell responses



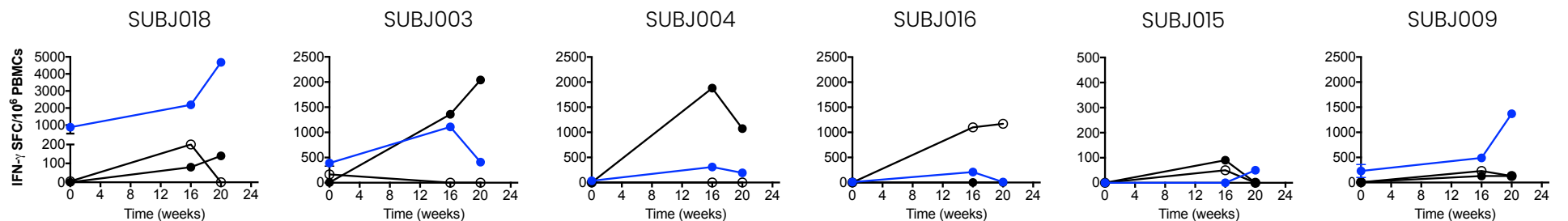
Interim Phase 1b/2a Data Demonstrates Significant Restoration of Antibody and T Cell Responses

Data Announced November 18, 2020

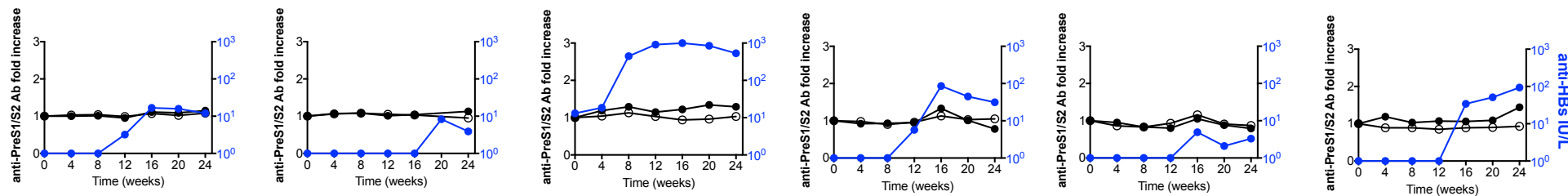
- Potent re-stimulation of T cell responses to HBV surface antigens (S, Pre-S1, Pre-S2) seen in 67% (n=6/9) and 78% (n=7/9) of evaluable patients in the low-dose VBI-2601 unadjuvanted and adjuvanted, respectively
- Boosting of antibodies to HBV surface antigens observed in 60% (n=6/10) and 67% (n=6/9) of evaluable patients treated with VBI-2601, unadjuvanted and adjuvanted, respectively

VBI-2601 Unadjuvanted Data - Responders

T cell Responses



Antibody Responses



● HBsAg ● PreS1 ○ PreS2



Phase 1b/2a Data Highlights

- As of April 2021, data from 33 evaluable patients across all low- and high-dose study arms suggest:
 - **Safety** : VBI-2601 was well-tolerated at all dose levels with and without IFN- α , with no significant adverse events identified
 - **Restimulation of HBV Immunity** :
 - T cell responses to HBV surface antigens (S, Pre-S1, Pre-S2) were seen in $\geq 50\%$ of patients (range: 50% - 78%) from all study cohorts compared to no detectable response in control, NUC-only arm
 - T cell responses and antibody responses were comparable across the 20 μg and 40 μg unadjuvanted study arms
 - T cell responses were comparable across the adjuvanted and unadjuvanted cohorts
- Based on the acceptable safety profile and vaccine-induced adaptive immune responses observed to-date, the high dose (40 μg) of VBI-2601 was selected to progress into a Phase 2 combination study



VBI-2601 Ongoing Partnership & Upcoming Milestones

Brii Partnership:

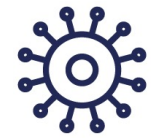
- In December 2018, VBI announced a license and collaboration agreement with Brii Biosciences (Brii Bio) to develop a functional cure for Hepatitis B
- **Upfront** : \$11M – \$4M upfront payment + \$7M equity investment
- **Milestones & Royalties** : Up to \$117.5M in potential milestone payments and potential low double-digit royalties on commercial sales in the licensed territory
- **Licensed Territories** : China, Hong Kong, Macau, and Taiwan
- VBI will retain all rights outside of the licensed territory with respect to the treatment of hepatitis B



Recently Completed and Upcoming Milestones:

- **April 2021** : Brii Bio initiated dosing in a Phase 2 study to assess VBI-2601/BR11-179 (Tx HBV) in combination with BR11-835 (VIR-2218)
 - The Phase 2 study will evaluate the high-dose (40 µg) level of VBI-2601 both with and without IFN-α, and is expected to be conducted in New Zealand, China, Hong Kong, Australia, Taiwan, Singapore, Thailand, and South Korea
- **H2 2022** : Interim clinical data from Phase 2 study of VBI-2601 (BR11-179) and BR11-835 (VIR-2218) expected

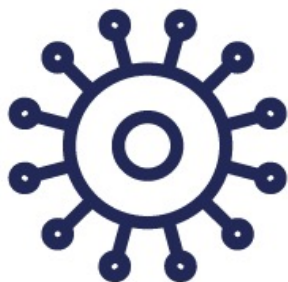




Coronaviruses

The Virus that Causes COVID-19 Continues to Evolve, Leading to Increasing Number of Mutations and Variants of Concerns

COVID-19



- A strain of coronavirus first identified in December 2019 in Wuhan, China
- Since then, as of September 2021, there have been **~234M confirmed cases** worldwide, responsible for **4.8M deaths**¹

Variants of Concern

Several variants of concern have been identified², including:

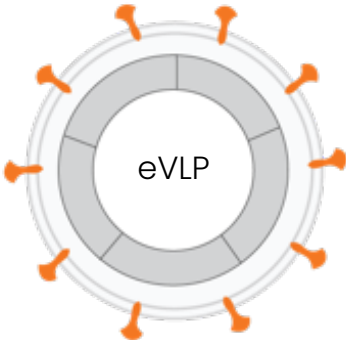
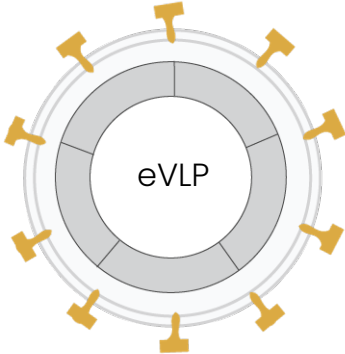
- ➔ **B.1.1.7 – “Alpha”**
First detected in UK
- ➔ **B.1.351 – “Beta”**
First detected in South Africa
- ➔ **B.1.617.2 – “Delta”**
First detected in India
- ➔ **P.1 – “Gamma”**
First detected in Japan/Brazil

Research is ongoing to better understand these variants, how easily they might be transmitted, and the effectiveness of currently approved vaccines against them



VBI is Committed to the Long-Term Protection Against Coronaviruses

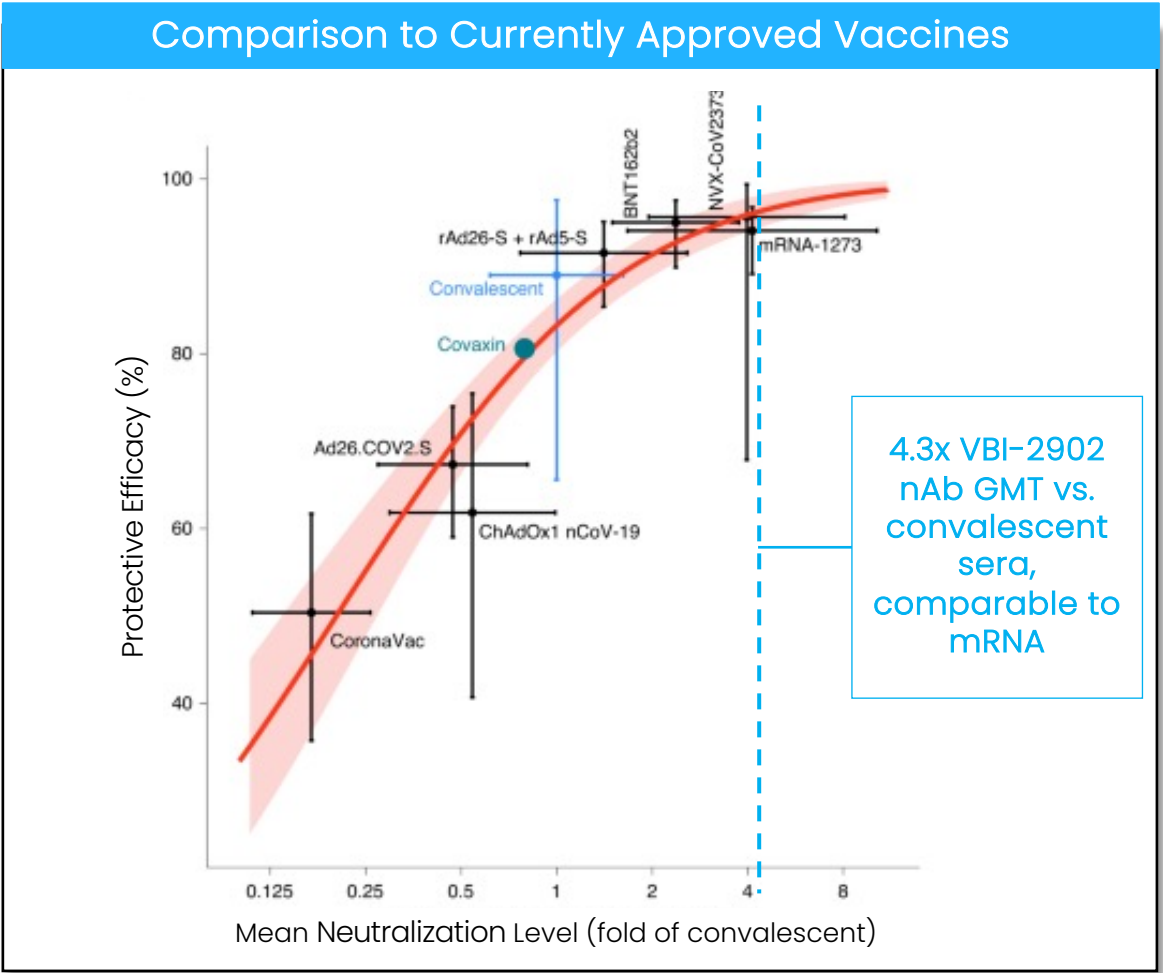
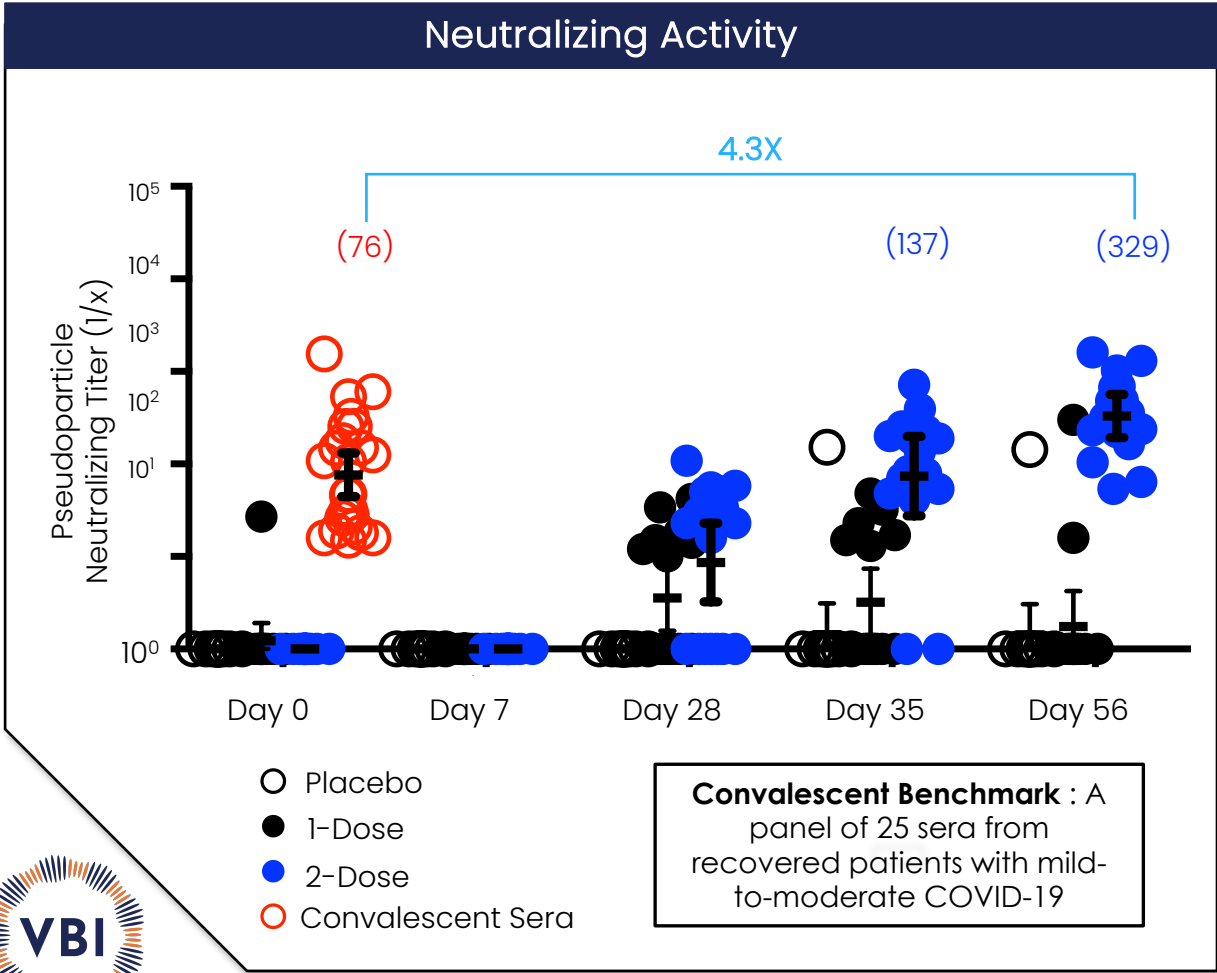
VBI’s coronavirus pipeline programs (VBI-2900) are designed to add meaningful clinical and medical benefit to already approved vaccines – be it as a single-dose heterologous booster, more durable immune responses, and/or providing broader protection

	VBI-2901 <i>Trivalent Pan-Coronavirus</i>	VBI-2902 <i>Monovalent COVID-19</i>	VBI-2905 <i>Monovalent COVID-19 B.1.351 Variant</i>	Undisclosed <i>Multivalent Candidates</i>
Schematic				<i>A suite of additional multivalent coronavirus vaccine candidates designed to evaluate the potential breadth of VBI’s eVLP technology</i>
Construct Design	Ancestral COVID-19, MERS, SARS spike antigens	Ancestral COVID-19 spike antigen	COVID-19 B.1.351 (501Y.V2) spike antigen	Undisclosed



In Phase 1a Clinical Study, VBI-2902 Induced Neutralizing Titers Comparable to Approved mRNA Vaccines

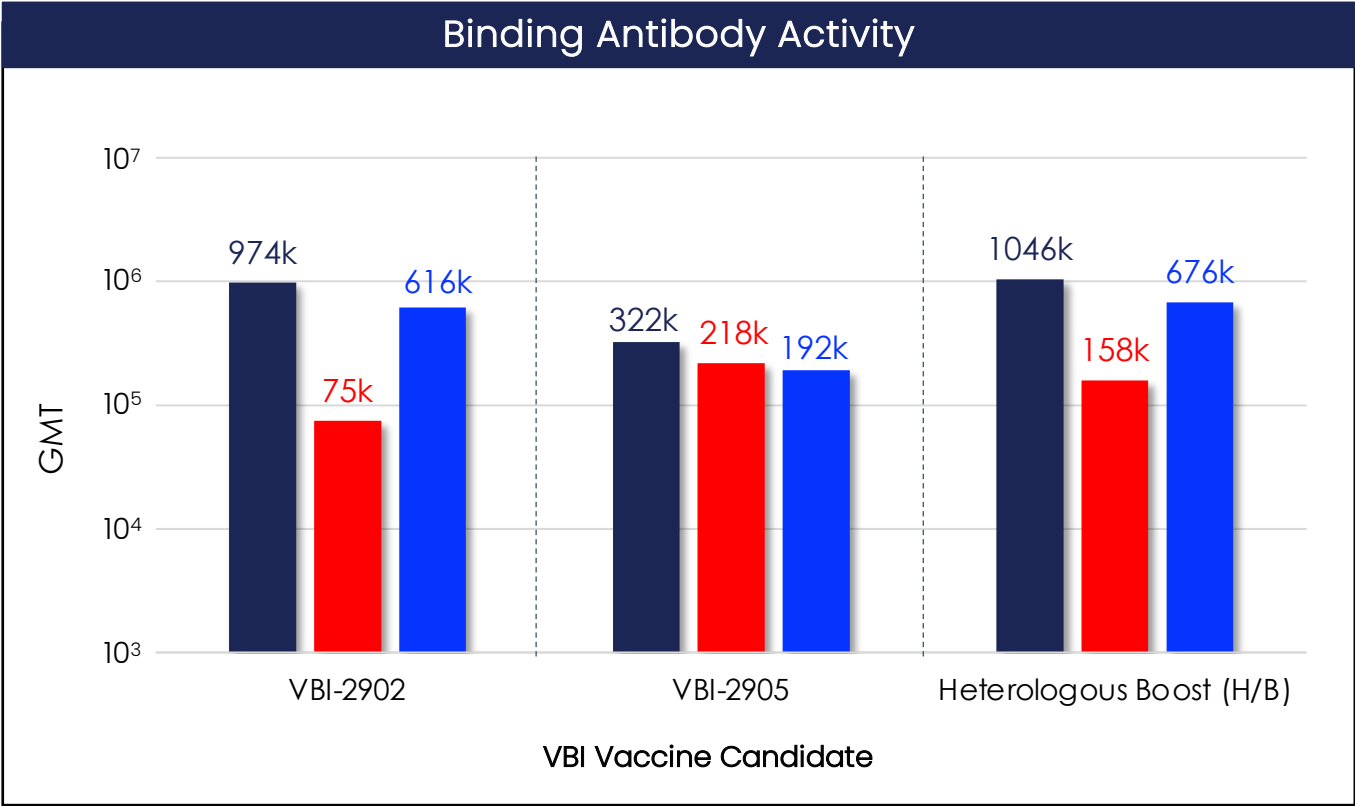
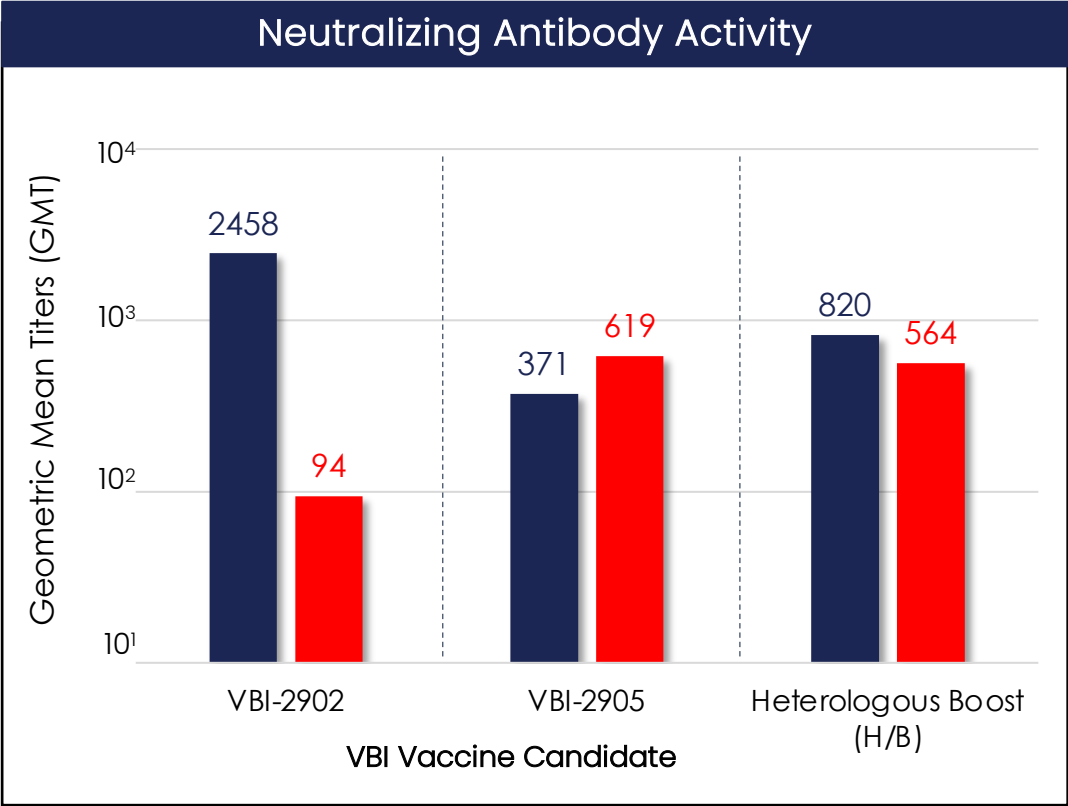
After two doses of 5ug, VBI-2902a elicited neutralizing antibody (nAb) responses 4.3X higher than a panel of convalescent sera, without the use of a next-generation adjuvant



Note: Data does not include n=11 participants who got vaccinated with a separate COVID-19 vaccine (not VBI-2902) during the study

New Preclinical Data Demonstrate Immunogenicity of VBI-2905 as Both a 2-Dose Regimen and 1-Dose Booster

Mice primed with VBI-2902, targeting ancestral SARS-CoV-2, followed by Beta-targeting VBI-2905 (heterologous boost) resulted in robust and balanced immunity across variants

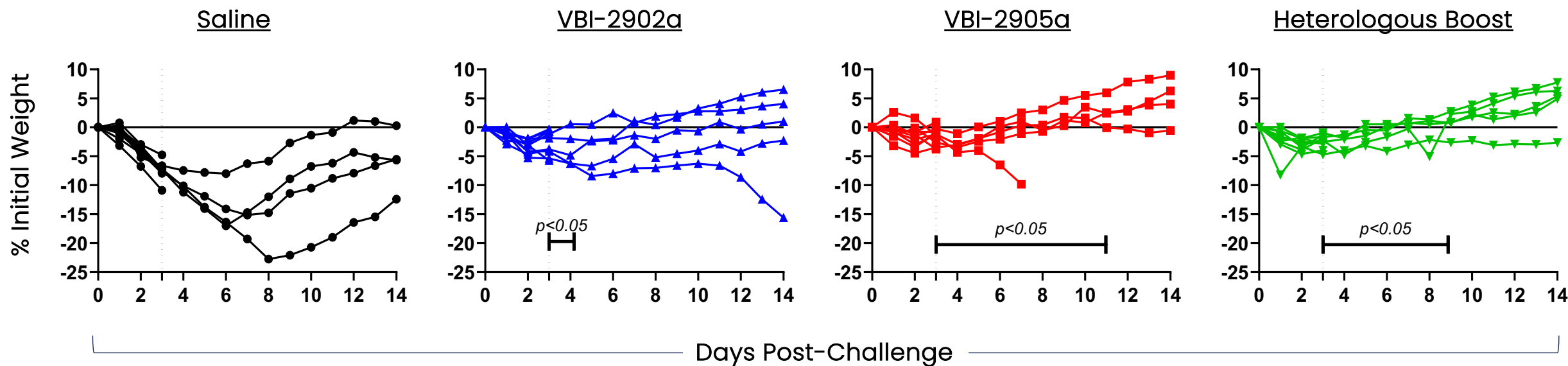


Immunogenicity of VBI-2902a and VBI2905a in mice: C57BL/6 mice, 8 per group, received 2 injections 3 weeks apart of VBI-2902a, VBI-2905a, or a first injection of VBI-2902a followed by a second injection of VBI-2905a (heterologous boost), each containing 0.1µg of S. Blood was collected at day 14 after the second injection for monitoring of the humoral response.

Hamster Challenge Data Demonstrate Ability of VBI-2905 to Protect Against Infection from Beta Variant of COVID-19

As observed in previous hamster challenge studies of VBI-2902a, neutralizing antibody titers against the Beta variant correlated with protection of disease (weight loss) after challenge

Prevention of Disease (Measured by Weight Loss/Regain)

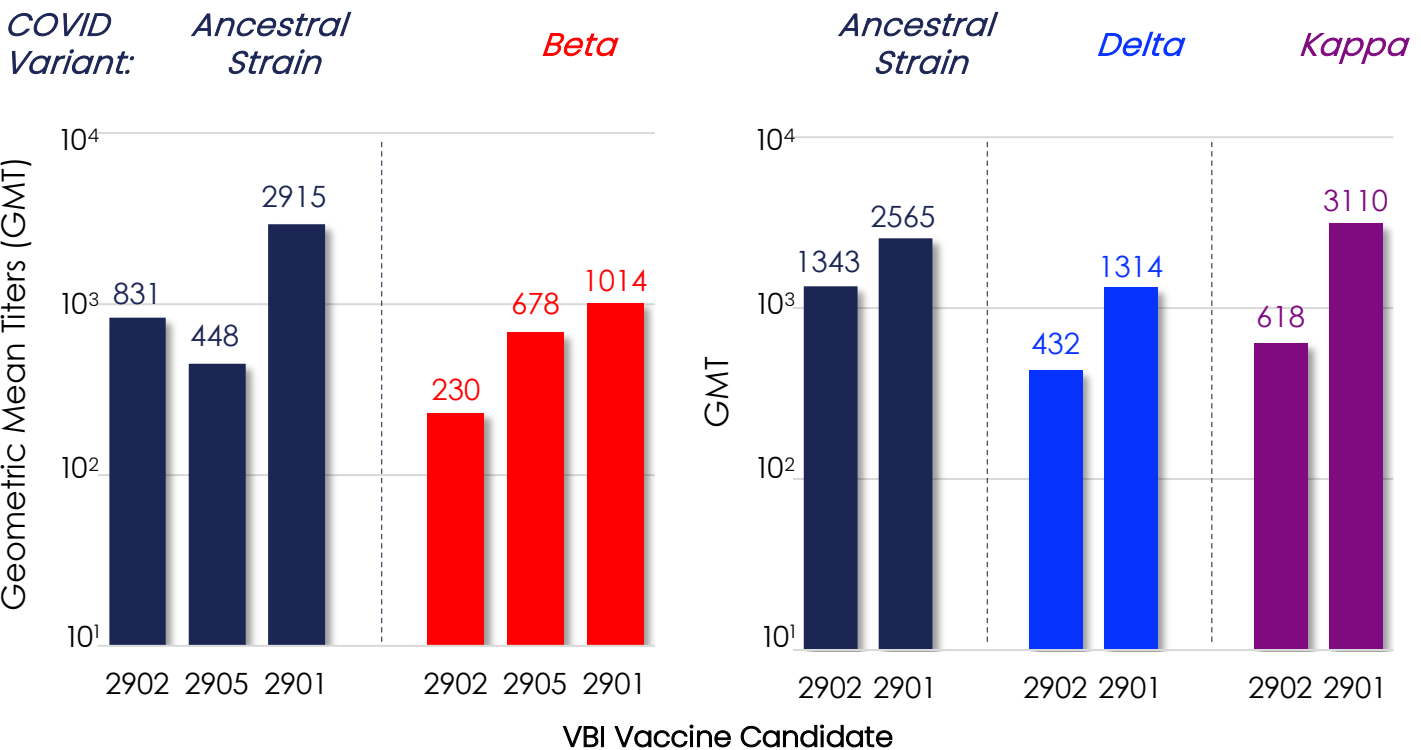


Beta variant challenge in Syrian golden hamsters after immunization with VBI-2902a and VBI-2905a: Four groups of 10 Syrian golden hamsters received 2 IM injections 3 weeks apart of placebo saline buffer (placebo group), VBI-2902a, VBI-2905a, or a first injection of VBI-2902a followed by a second injection of VBI-2905a (heterologous booster), with $1\mu\text{g}$ of S per dose. Blood was collected 2 weeks after each injection. Three weeks after the last injection (Day 42), hamsters were exposed to SARS-CoV-2 Beta virus at 1×10^5 TCID₅₀ per animal via both nares.

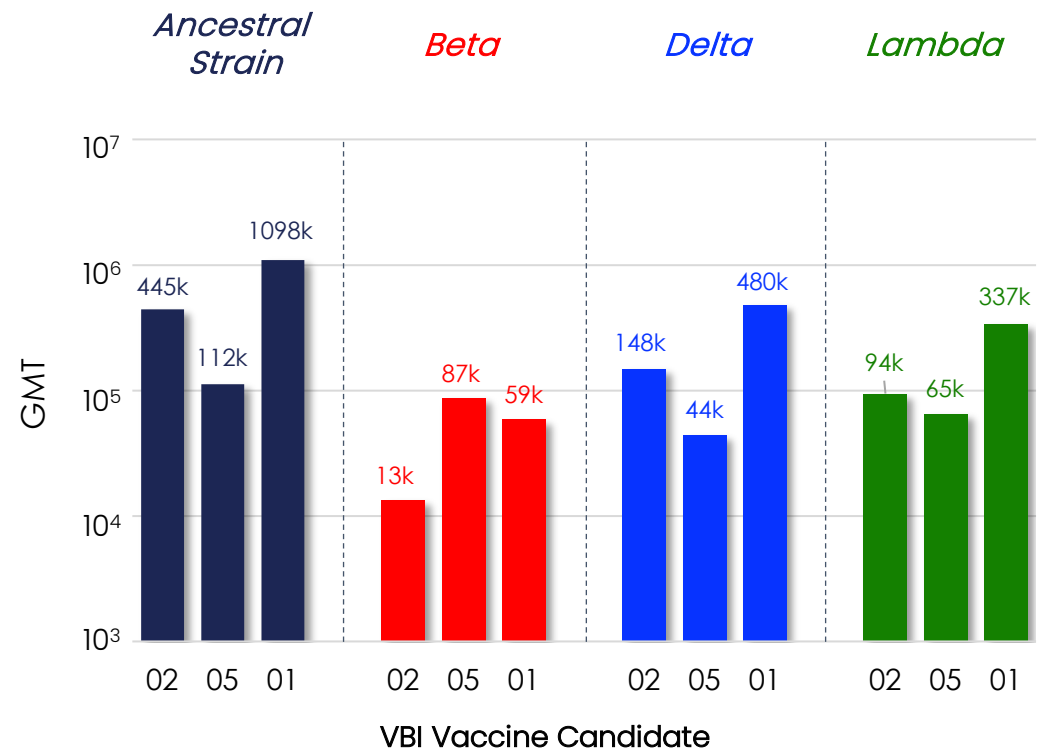
Trivalent VBI-2901 Induced Robust Antibody and Neutralizing Titers Against an Extended Panel of Variants

VBI-2901 induced higher and more consistent immunogenicity against Beta, Delta, Kappa, and Lambda variants, with evidence for broadening immunity rather than just boosting cross-reactive antibodies

Neutralizing Antibody Activity



Binding Antibody Activity



Immunogenicity of trivalent VBI-2901a: Three groups of 10 mice were immunized with 2 doses of VBI-2901a, VBI-2902a, or VBI-2905a 3 weeks apart. Blood was collected at day 14 after the last injection for monitoring of humoral responses. Neutralization of EPT measured by PRNT90, neutralization of pseudoparticles expressing S from Wu-1, Delta, and Kappa variants are represented as half-maximum inhibitory dilutions (neutralization ID50). Due to technical limitations, only 8 sera per group were tested against Wu-1 and Kappa pseudoparticles and 4 sera against Delta pseudoparticles.

VBI-2905 Phase 1b Study Design & Objectives

Study supported by CEPI collaboration – participant dosing initiated September 2021

- Randomized, observer-blind, placebo-controlled Phase 1b study in ~80 healthy adults age 18–54 years
- Key objectives of the study are to assess the safety, tolerability, and immunogenicity of VBI-2905 across two regimens
- 3-arm study :
 - **Cohort 1: VBI-2905 5µg – 1 dose booster** in previously vaccinated individuals, given at least 4 months post-immunization with an authorized mRNA vaccine
 - **Cohort 2: Placebo** – 1 dose in previously vaccinated individuals, given at least 4 months post-immunization with an authorized mRNA vaccine
 - **Cohort 3: VBI-2905 5µg – 2 doses** in unvaccinated individuals administered at Day 1 and Day 28
- The study will enroll subjects at clinical trial sites in Canada and Mexico
- Initial data from the study is expected in early Q1 2022, pending speed of enrollment



Summary & Next Steps

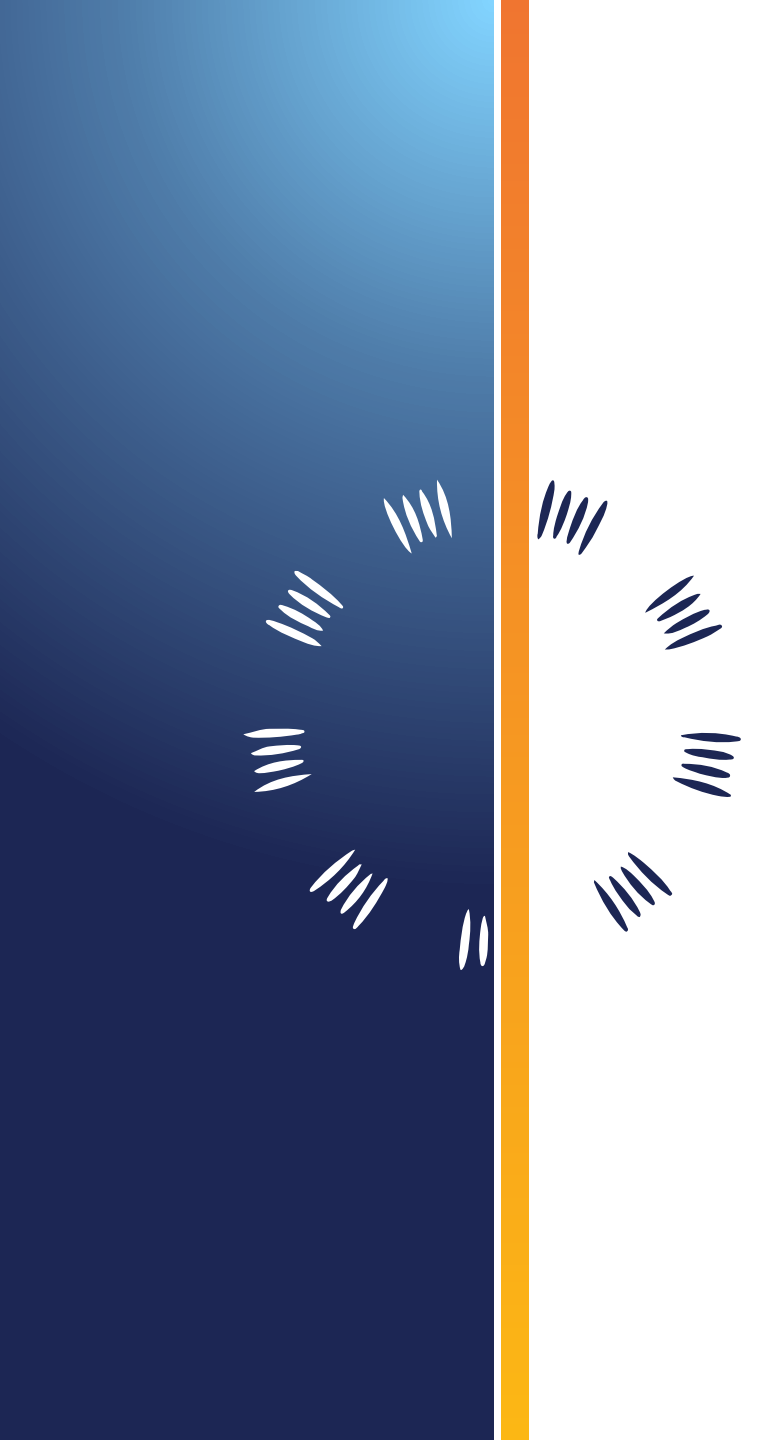
- In addition to developing vaccines to support parts of the world that have not received adequate protection due to limited supply of the ancestral strain vaccines, VBI is working to broaden immunity against COVID-19 and betacoronaviruses through two main approaches:
 - **Heterologous boosting** (VBI-2905) to induce cross-reactive antibodies capable of protecting against numerous COVID-19 variants
 - **Trivalent betacoronavirus eVLP** (VBI-2901) capable of broadening antigen specificity (B-cell immunity), resulting in the ability to neutralize variants not included in the vaccine
- VBI's coronavirus pipeline is supported by partnerships with:



Upcoming Milestones:

- **Early Q1 2022** : Data expected from Phase 1b study of VBI-2905, subject to speed of participant enrollment
- **H1 2022** : Expected initiation of the first clinical study of VBI's multivalent candidate, designed to increase breadth of protection against COVID-19





Glioblastoma (GBM)

Unique Approach to Immuno-Oncology

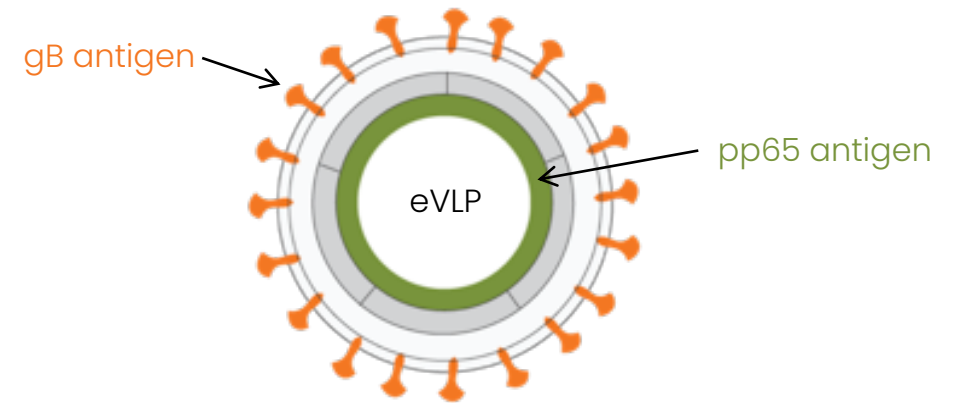
CMV as a Foreign Viral Antigen

- 90% of some solid tumors, including glioblastoma (GBM), breast cancers, and medulloblastomas are CMV+ tumors
- CMV is not causative, but can influence disease progression of CMV+ tumors
- Because CMV is so broadly (and differentially) expressed on tumor cells, but not on healthy cells, a potent CMV vaccine has the potential to make “cold tumors, hot”
- GBM is one of the most aggressive cancers with few treatment options and no standard of care in the recurrent setting



VBI's eVLP Immunotherapeutic Candidate

VBI-1901: Bivalent eVLP expressing two of the most immunogenic CMV antigens



Key Features:

- Internal antigen expression elicits T cell immunity
- Stimulated innate immunity

Ongoing Phase 1/2a Study Design & Objectives

Two-part, open-label, dose escalation study designed to assess the safety, tolerability, and optimal therapeutic dose level of VBI-1901 in recurrent GBM patients

Phase 1 (Part A) : Dose-Escalation Phase – Recurrent GBM (any # of recurrences)

Study Arm 1 : **Low Dose** (n=6)
0.4µg + GM-CSF

VS.

Study Arm 2 : **Int. Dose** (n=6)
2.0µg + GM-CSF

VS.

Study Arm 3 : **High Dose** (n=6)
10.0µg + GM-CSF

- Enrollment completed December 2018 (n=18)
- 12-month overall survival (OS) rate of 83% in Vaccine Responders (n=6) vs. 33% in Non-Responders (n=9)
- Vaccine Responders saw a 6.25-month improvement in median OS (14.0 mos) vs. Non-Responders (7.75 mos)
- Tumor responses observed in 3 patients in the high-dose cohort, with evidence of stable disease based on two or more consecutive MRI scans

Phase 2a (Part B) : Extension Phase – Recurrent GBM (1st recurrence only)

Study Arm 1 : **High Dose** (n=10)
10.0µg + GM-CSF

VS.

Study Arm 2 : **High Dose** (n=10)
10.0µg + GSK's AS01_B Adjuvant

VBI-1901 + GM-CSF:

- Enrollment completed April 2020 (n=10)
- Tumor Responses : 2 partial responses + 2 stable disease observed

VBI-1901 + GSK's AS01 adjuvant:

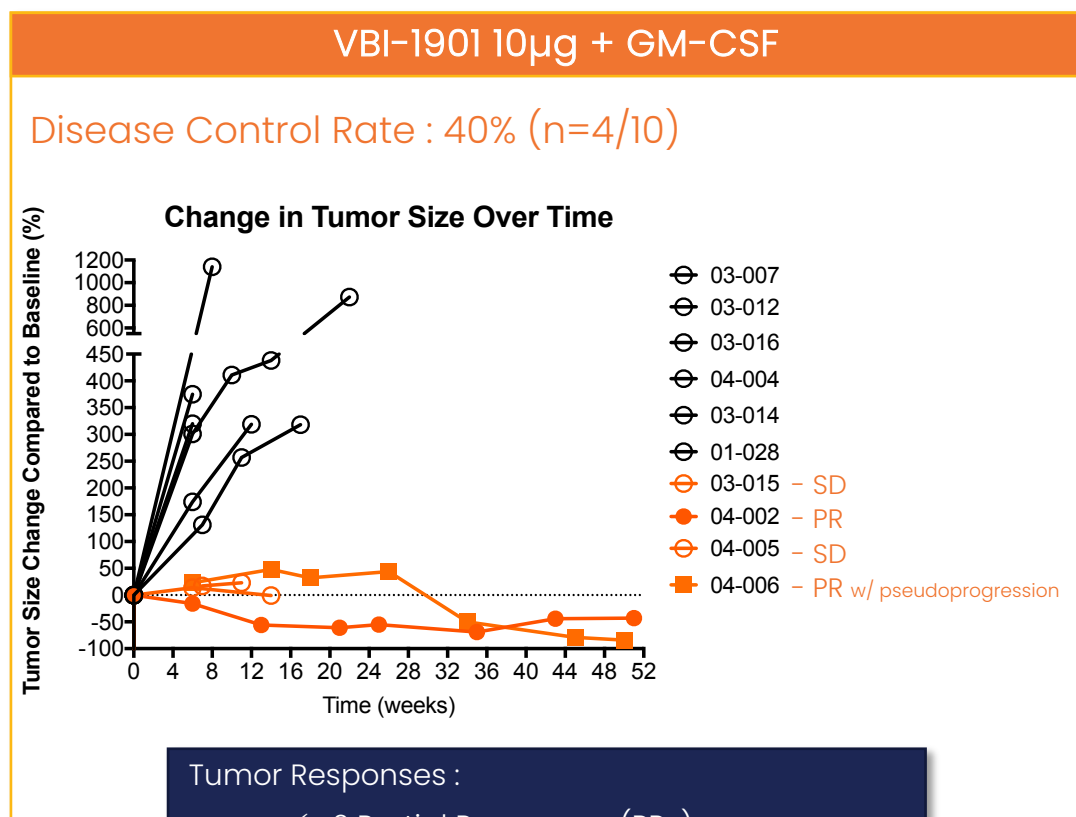
- Enrollment completed October 2020 (n=10)
- Tumor Responses : 5 stable disease observed



Tumor Responses Seen in Phase 2a (Part B)

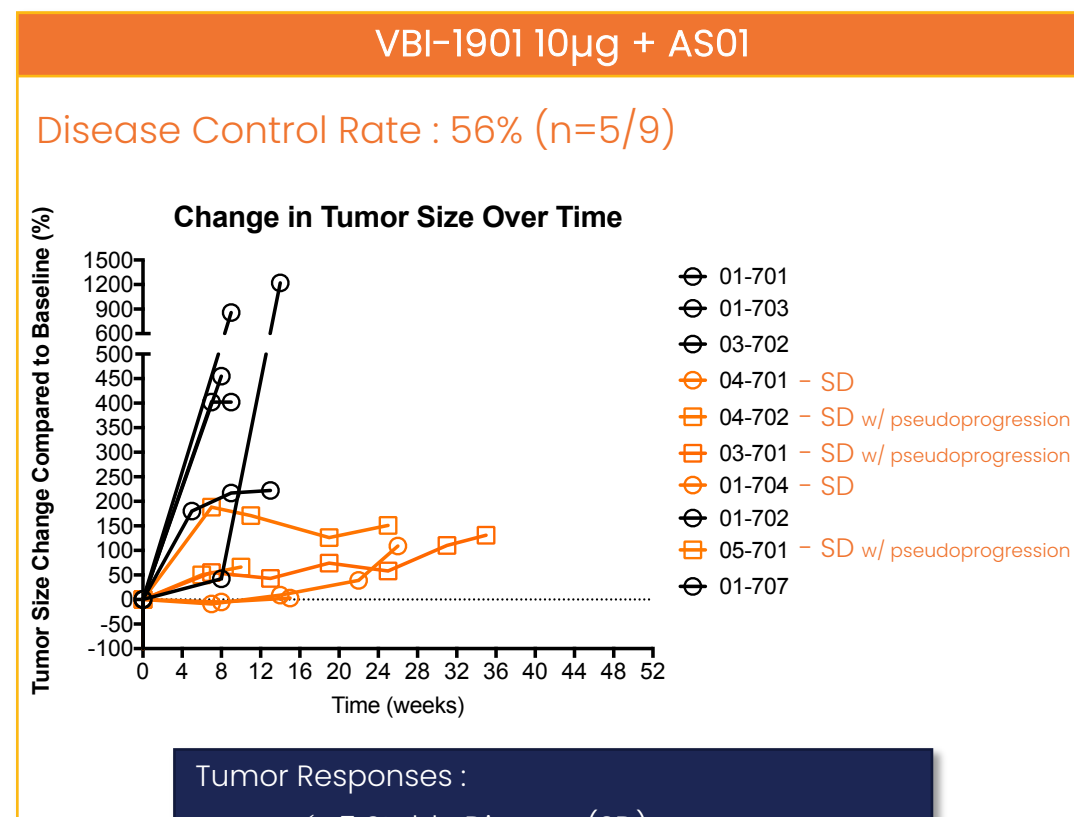
Data from ASCO 2021 Poster Presentation (June 4-8, 2021)

⊖ – No tumor response



Tumor Responses :

- ✓ 2 Partial Responses (PRs)
- ✓ 2 Stable Disease (SD)



Tumor Responses :

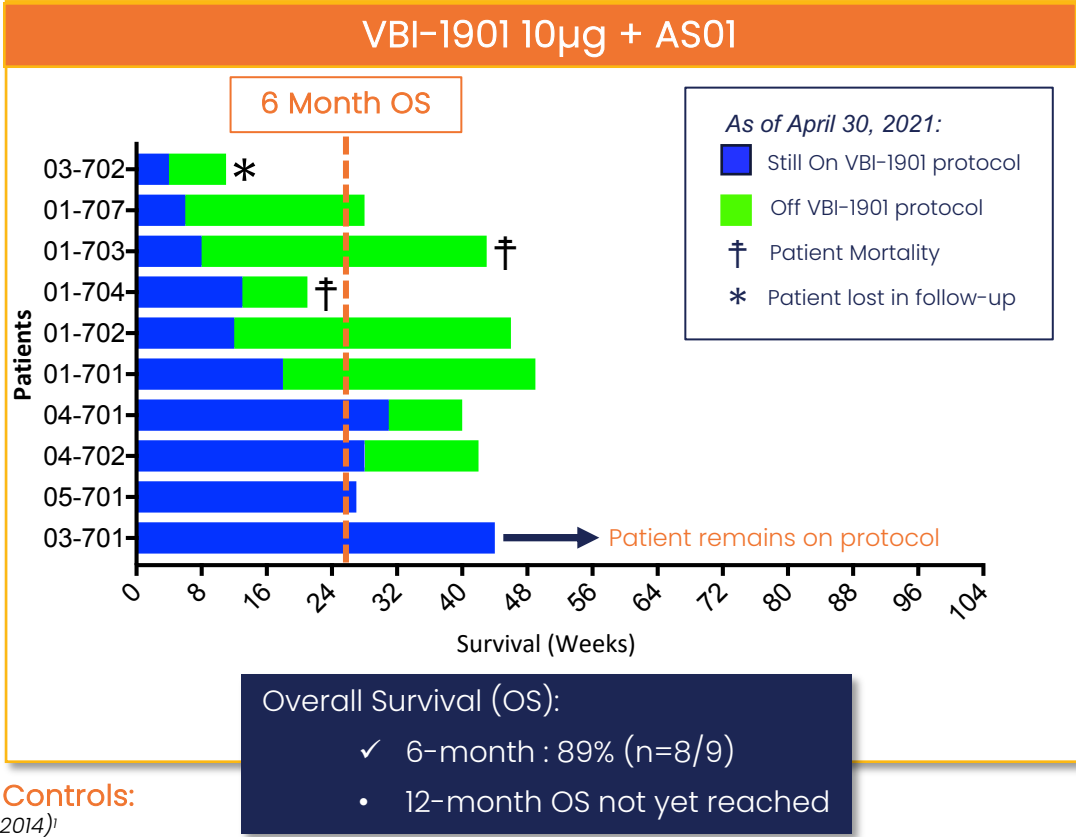
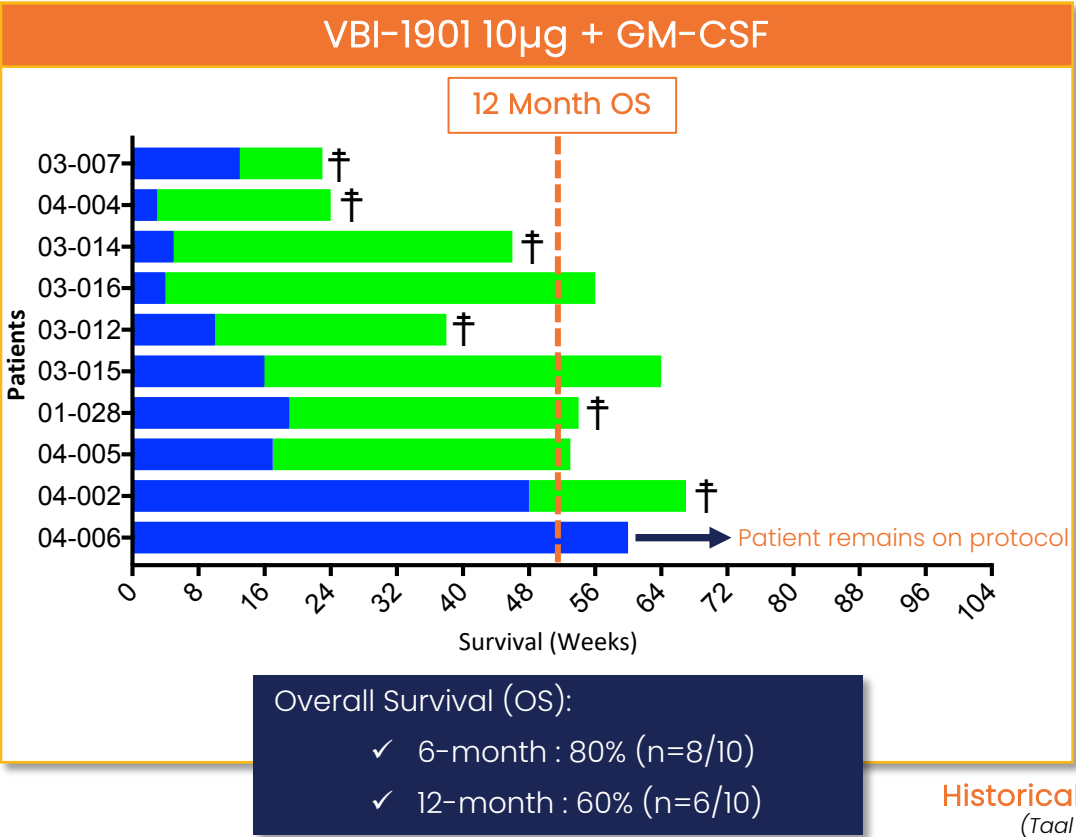
- ✓ 5 Stable Disease (SD)



Disease Control Rate = Stable Disease (SD) + Partial Response (PR) + Complete Response (CR)

Clinical Responses Seen in Phase 2a (Part B)

Data showed improvements in 6-month and 12-month Overall Survival (OS) compared to historical controls, as presented at ASCO 2021



Historical OS Controls:
(Taal et al, 2014)¹

- 6-month OS : ~60%
- 12-month OS : ~30%

Based upon Phase 1/2a study data, U.S. FDA granted Fast Track Designation for VBI-1901 + GM-CSF for the treatment of recurrent GBM patients with first tumor recurrence



Sources: ¹Taal W, Oosterkamp HM, Walenkamp AME, et al. Single-agent bevacizumab or lomustine versus a combination of bevacizumab plus lomustine in patients with recurrent glioblastoma (BELOB trial): a randomized controlled phase 2 trial. Lancet Oncol. 2014; 15: 943–953

VBI-1901 Upcoming Milestones & Potential to Address an Unmet Medical Need

Recurrent GBM Represents a Significant Unmet Medical Need:

- Annual U.S. incidence rate of GBM in adults is ~2-3/100,000, and with no treatment, the average median survival is 6 months
- There is no standard of care in the recurrent setting – the most effective therapies improve median overall survival (OS) by an average of only 3 months
- Any therapeutic option that could demonstrate clinical benefit would be meaningful in this difficult-to-treat patient population, with tumor response regarded as one of the most objective measures of efficacy
- Tumor responses seen to-date across both arms of VBI's Phase 1/2a study, including the 2 partial responses and 7 stable disease, are encouraging, especially as an outcome of monotherapy, and justify further clinical evaluation
- **FDA Fast Track Designation for VBI-1901 + GM-CSF announced June 2021** : Fast Track Designation facilitates the development and expedites the review of new therapies to treat serious conditions and fill an unmet medical need

Upcoming Milestones:

- **Q4 2021** : VBI expects to initiate a randomized, controlled clinical study of VBI-1901 in GBM, with potential to yield registrational data





Summary

VBI's Team

Management



Jeff Baxter
President & CEO



David E. Anderson, Ph.D.
Chief Scientific Officer



**Francisco Diaz-Mitoma,
M.D., Ph.D.**
Chief Medical Officer



Christopher McNulty
Chief Financial Officer



Nell Beattie
Chief Business Officer



Avi Mazaltov
Global Head of Manufacturing
& SciVac General Manager

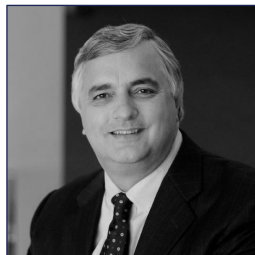
Board of Directors



Steve Gillis, Ph.D.
Chair



Linda Bain
Director



Damian Braga
Director



Joanne Cordeiro
Director



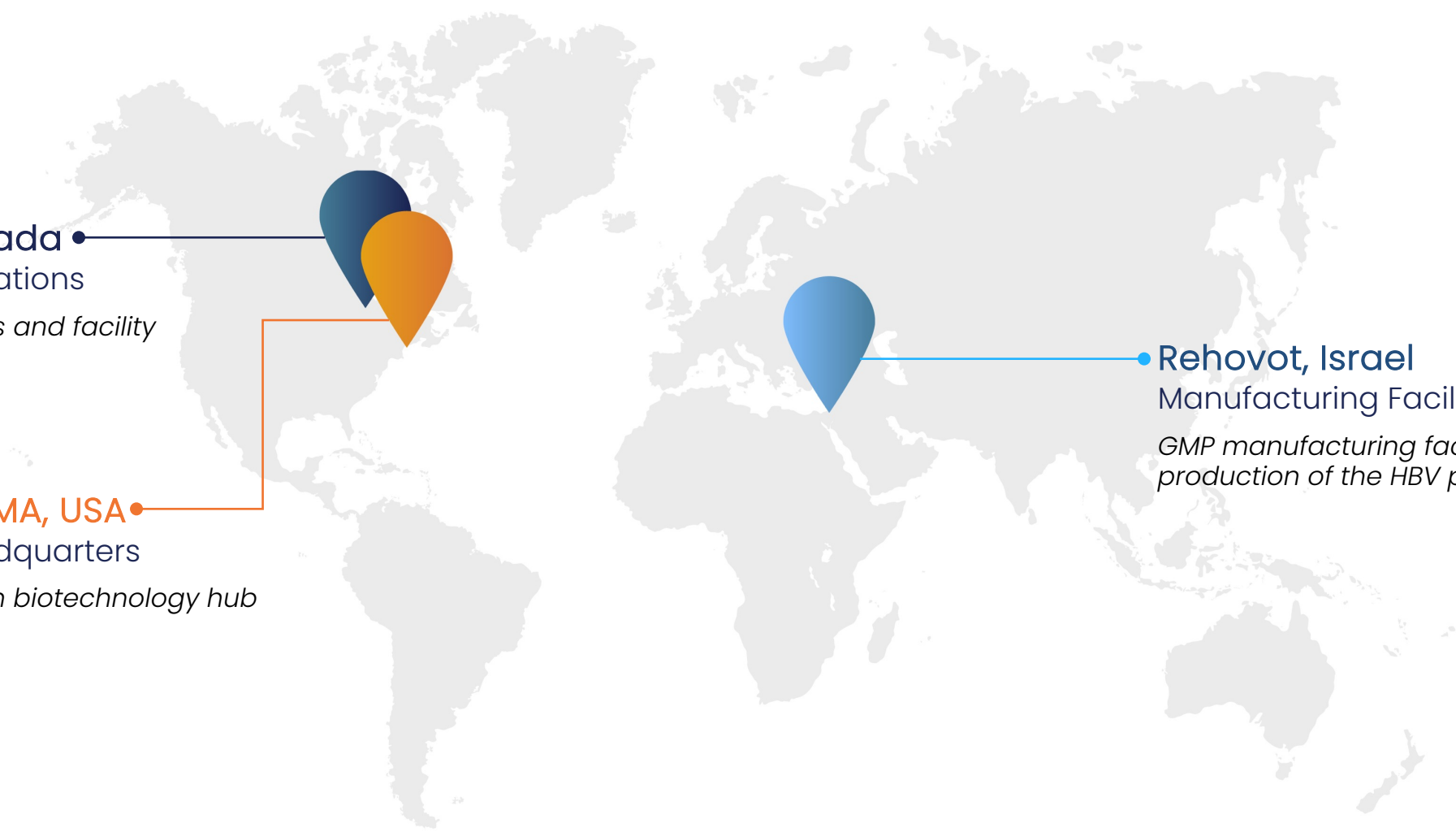
Michel De Wilde, Ph.D.
Director



Blaine H. McKee, Ph.D.
Director



VBI Vaccines Global Footprint



Ottawa, Canada •
Research Operations
R&D headquarters and facility

Cambridge, MA, USA •
Corporate Headquarters
Central location in biotechnology hub

• **Rehovot, Israel**
Manufacturing Facility
GMP manufacturing facility for the production of the HBV program candidates



2020 & 2021 Set to Transform VBI

Anticipated Upcoming Milestones

Path to Approval for 3-Antigen Hepatitis B Vaccine Candidate in the U.S., Europe, and Canada

- November 30, 2021 : U.S. PDUFA target action date
- 2021 : EMA (Europe) review process ongoing
- 2021 : Submission to UK MHRA and Health Canada are in process and expected to complete in 2021

Advancement and Expansion of VBI's Development Pipeline

- Q4 2021 : Expected initiation of **VBI-1901 (GBM)** randomized, controlled study, with potential to yield registrational data
- Early Q1 2022 : Data expected from Phase 1b study of **VBI-2905 (monovalent Beta variant)**, subject to speed of enrollment
- H1 2022 : First clinical study of **VBI-2901 (trivalent pan-coronavirus)** expected to begin
- H2 2022 : Interim clinical data from Phase 2 combination study of **VBI-2601 (BR11-179)** and BR11-835 (VIR-2218) expected





VBI Vaccines Inc. | www.vbivaccines.com