VBI VACCINES

VBI-2901: Pan-Coronavirus Vaccine Candidate Overview

NASDAQ: VBIV

MAY 2020

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 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 5, 2020, and filed with the Canadian security authorities at sedar.com on March 5, 2020, 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.

Overview of VBI Vaccines

- Leveraging significant immunology expertise to address unmet medical needs in both **INFECTIOUS DISEASE** and **IMMUNO-ONCOLOGY**

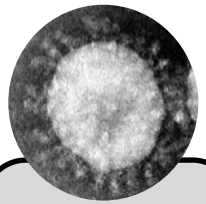
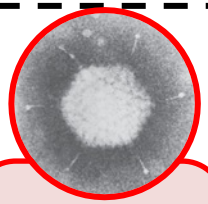
- Advancing prevention and treatment of **HEPATITIS B:**
    - *Sci-B-Vac®* : Only tri-antigenic Hepatitis B vaccine; recently completed a Phase III program in the U.S., Europe, and Canada; approved and marketed in Israel
    - *VBI-2601* : Immuno-therapeutic in development in a collaboration with Brii Biosciences for a functional cure for chronic Hepatitis B

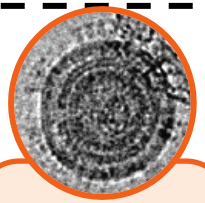
- Leveraging a proprietary enveloped virus-like particle (eVLP) platform technology to develop next-generation vaccines:
    - *VBI-1901* : **GLIOBLASTOMA** (GBM) vaccine immunotherapeutic candidate (currently in Phase I/IIa study)
    - *VBI-2901* : **PAN-CORONAVIRUS** (COVID-19, SARS, MERS) vaccine candidate in development in a collaboration with the National Research Council of Canada
    - *VBI-1501* : Prophylactic **CMV** vaccine candidate (positive topline Phase I data announced in May 2018)

VBI Vaccines Pipeline

		PRE-CLINICAL	PHASE I	PHASE II	PHASE III	APPROVED	STATUS
INFECTIOUS DISEASE							
Hepatitis B – Prophylaxis	**Sci-B-Vac®** *VLP*						• Approved for use and commercially-available in Israel
							• Regulatory submissions in U.S., Europe, and Canada expected to begin Q4 2020
Hepatitis B – Therapeutic	**VBI-2601** *VLP*						• License & collaboration agreement with Brii Biosciences • Initial Phase Ib/IIa data expected H2 2020
Cytomegalovirus (CMV)	**VBI-1501** *eVLP*						• Positive Phase I data announced May 2018
Pan-Coronavirus (COVID-19, SARS, MERS)	**VBI-2901** *eVLP*						• Development collaboration with NRC announced March 2020
Zika	**VBI-2501** *eVLP*						• Candidate selected from NRC collaboration
IMMUNO-ONCOLOGY							
Glioblastoma (GBM)	**VBI-1901** *eVLP*						• Ongoing Phase I/IIa • Expanded immunologic data expected mid-year 2020 and Q4 2020
Other CMV+ Tumors	**VBI-1901** *eVLP*						• Preclinical work ongoing

Vaccine Platforms Targeting COVID-19



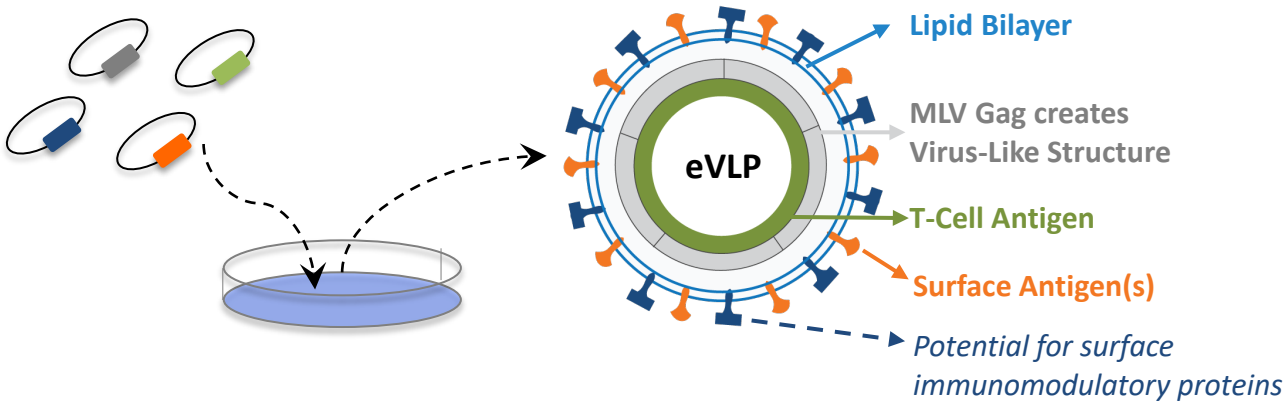
	COVID-19	Live Virus or Vector	Recombinant Protein	Virus Like Particle	DNA	mRNA
Name						
Class	RNA Virus	Live or Live Attenuated	Subunit - simple	Subunit - complex	Nucleic Acid	Nucleic Acid
Key Structural Features	"Enveloped" with "Spike" Protein	Replicating virus, with COVID swapped in	Focuses on Spike protein	Virus-mimic including Spike protein	None, code injected & proteins produced internally	None, code injected & proteins produced internally
Pros	Similar to SARS & MERS	Looks like a virus to immune system	Cheap, scalable, safe	Safe, Looks like a virus to immune system, Spike adopts native shape	Cheap, fast to clinic, good T-cell responses	Cheap, fast to clinic
Cons	Highly infectious, virulent, mutating?	Those in use not structurally similar to COVID19	Less immunogenic, proteins adopt different shape	Timelines similar to Virus or Recombinant	Limited antibodies, No approved products since 1987	Limited data available, product is produced inside body (or not)

The Enemy

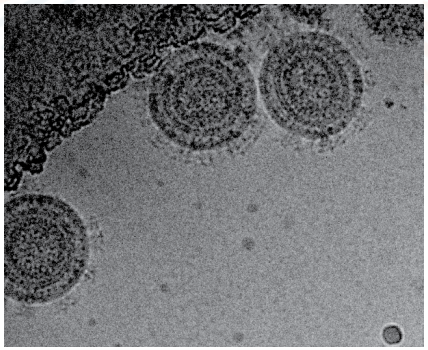
Approved Products

No Approved Products

Advantages of the Enveloped Virus-Like Particle (eVLP) Technology Platform

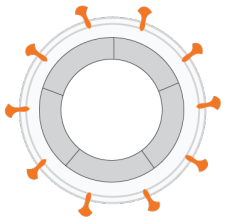
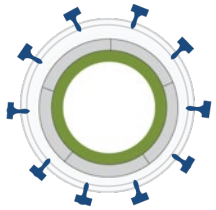
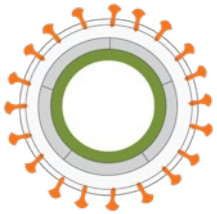
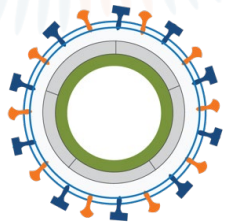


Electron Microscopy image of VBI's CMV eVLPs captured at Scripps Institute



- ✓ **Highly Immunogenic:** Because of their structural similarity to viruses found in nature, vaccination with a target protein expressed in an eVLP is capable of imparting greater immunity than vaccination with the same recombinant target protein alone
- ✓ **Customizable:** eVLPs are highly-customizable, which allows VBI to rationally design preventative or therapeutic vaccine candidates by controlling the expression of both surface and internal target proteins of interest
- ✓ **Safe:** eVLPs do not contain any infectious genetic machinery and have proven to be safe and well tolerated in clinical studies, with no vaccine-related safety signals observed
- ✓ **Commercially Viable:** eVLPs are manufactured and purified using highly-scalable methods

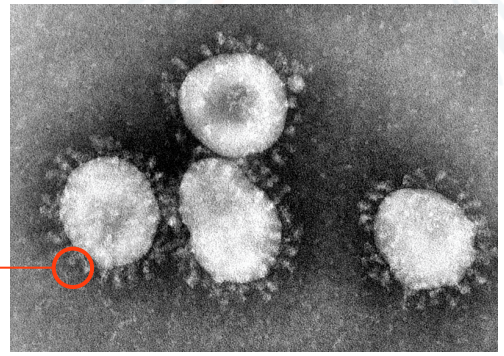
Multiple eVLP Candidates have Clinical & Preclinical Proof-of-Concept

	Infectious Disease		*Immuno-Oncology*	
	Prophylactic CMV (VBI-1501)	**Prophylactic Zika (VBI-2501)**	**Therapeutic CMV+ Tumors (VBI-1901)**	**Immuno-Oncology (VBI-2701)**
Schematic				
Construct Design	*Monovalent:* Modified gB-G	*Bivalent:* Modified-E / NS1	*Bivalent:* gB / pp65 (major CD4, CD8 & Ab epitopes)	*Bivalent* with Immuno-modulatory protein
Adjuvant	Alum	Alum	GM-CSF	Self Adjuvanted
Most Advanced Development Stage	Ph I complete	Preclinical	Ph I/II ongoing	Preclinical
Key Features	• Modified gB elicits fibroblast & epithelial cell neutralization • Qualitatively enhanced neutralizing response	• Modified-E enhances neutralizing responses • NS1 T cell response enhances antibody response & protection	• Internal antigen expression elicits T cell immunity • Stimulates innate immunity	• Immunomodulatory proteins can enhance antigen-specific Th1 immunity

eVLP Approach to a Pan-Coronavirus Vaccine Candidate

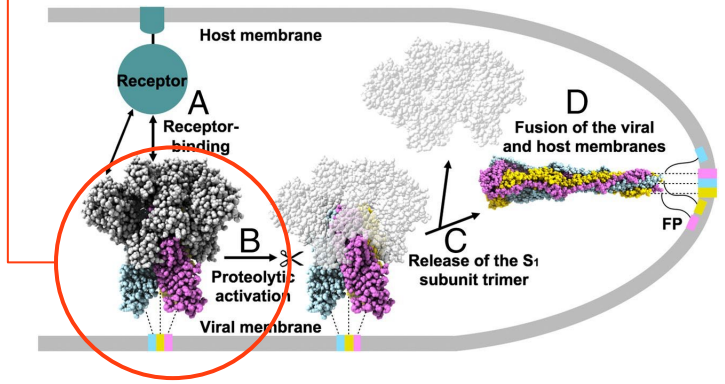
Coronaviruses are members of the “enveloped” class of viruses

COVID-19



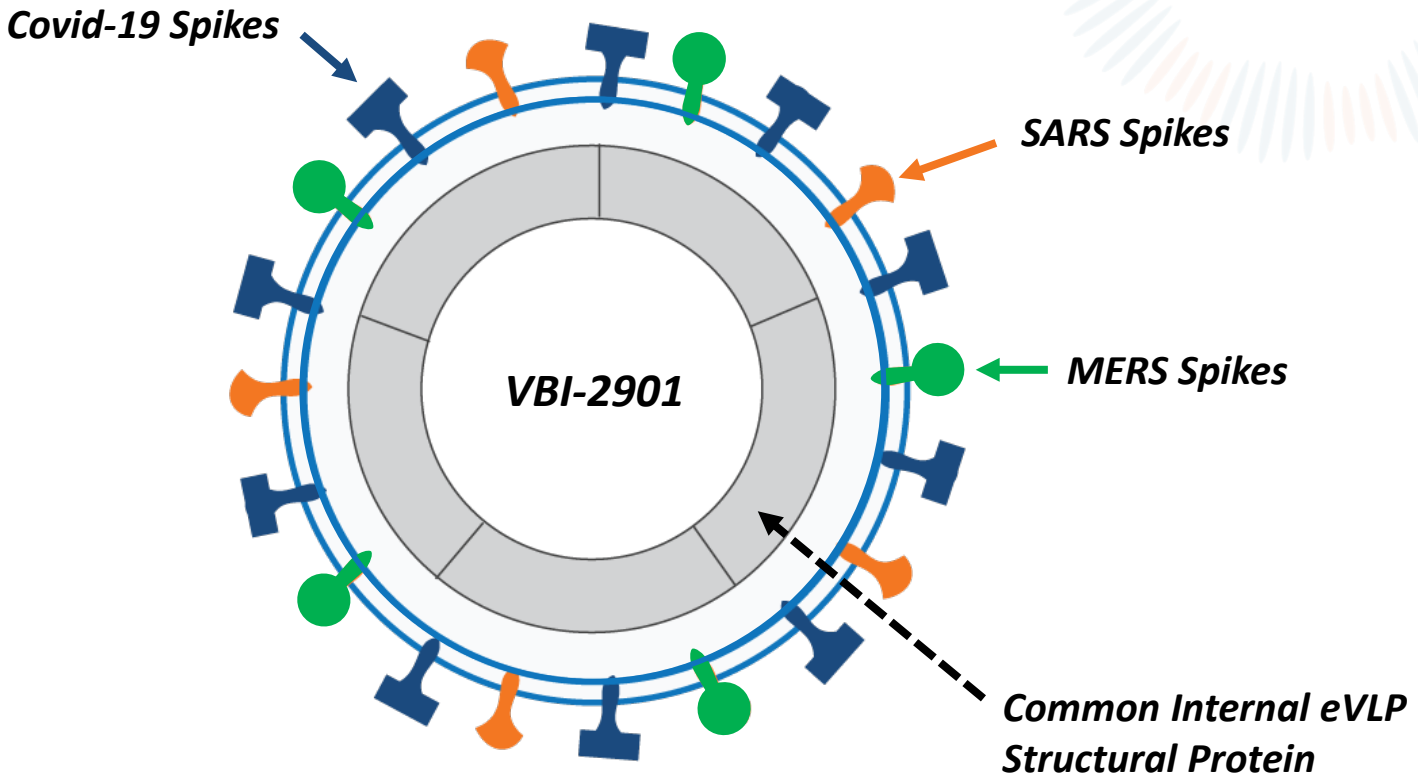
- *Morphology:*
  - Enveloped RNA virus with a predominant S1/S2 spike
  - RNA viruses are prone to genetic drift/shift (though coronaviruses seem to be more stable than most)

- *Key Target Antigen:*
  - Based on knowledge of SARS and MERS, it is anticipated that the spike protein (S1/S2) is likely a neutralizing determinant and an ideal target for inclusion in a vaccine
  - The spike protein is trimeric – eVLPs encourage trimerization and expression of native conformation of proteins

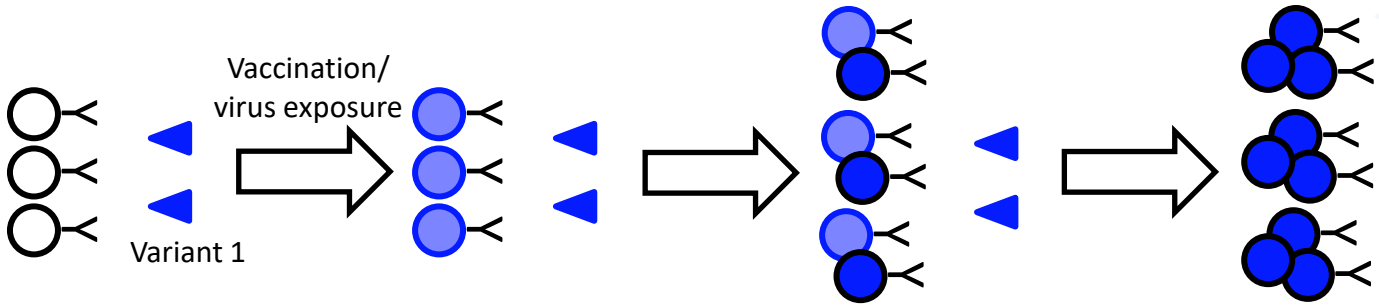


- Based on past experience with the eVLP platform, VBI expects that a multivalent eVLP vaccine candidate, co-expressing SARS-CoV-2, SARS-CoV, and MERS-CoV spike proteins on the same particle, will be possible

eVLP Pan-Coronavirus Trivalent Construct



How trivalent eVLP vaccination may enrich for highly potent cross-reactive immunity



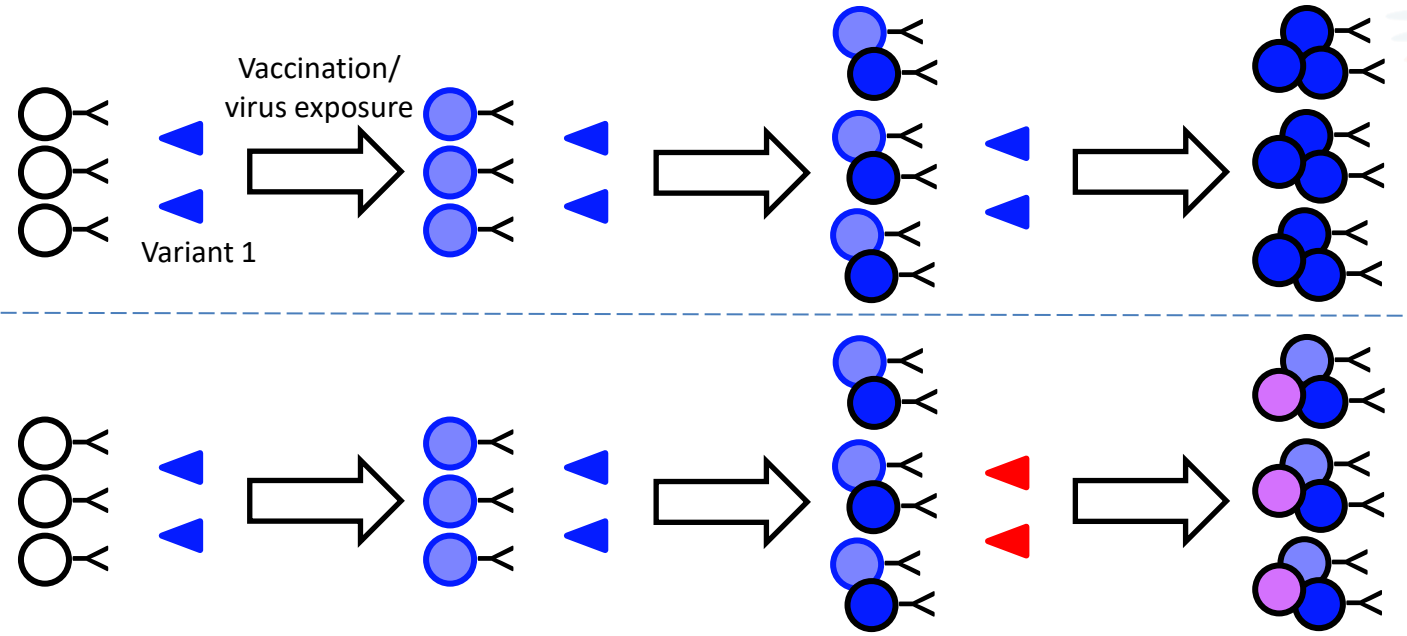
Repeat exposure to the same viral variant gradually increases the 1) frequency, 2) specificity, and 3) affinity/potency over time.

Low affinity

Intermediate affinity

High affinity/potency

How trivalent eVLP vaccination may enrich for highly potent cross-reactive immunity



Repeat exposure to the same viral variant gradually increases the 1) frequency, 2) specificity, and 3) affinity/potency over time.

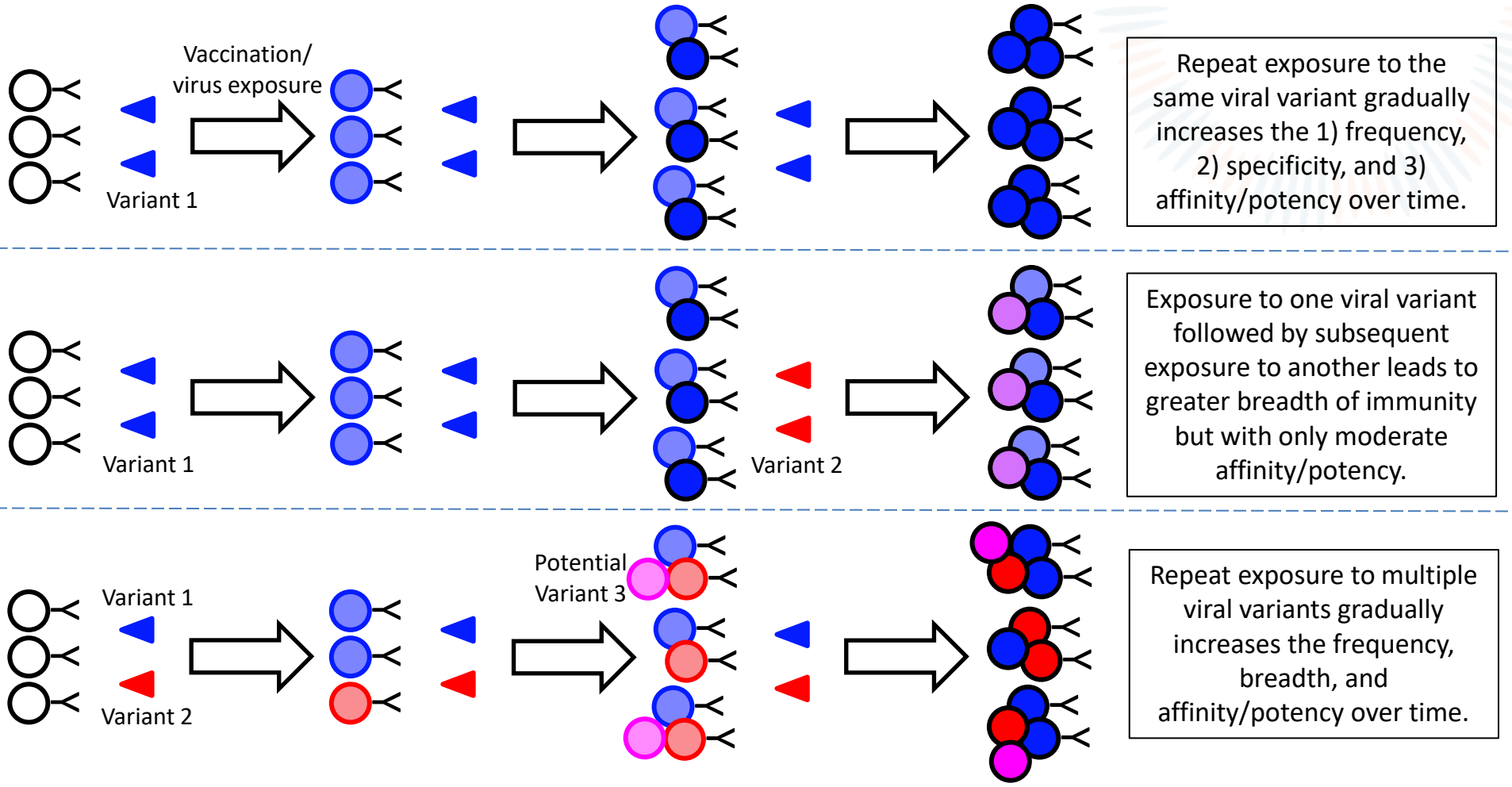
Exposure to one viral variant followed by subsequent exposure to another leads to greater breadth of immunity but with only moderate affinity/potency.

Low affinity

Intermediate affinity

High affinity/potency

How trivalent eVLP vaccination may enrich for highly potent cross-reactive immunity



VBI-2901 (Pan-Coronavirus) : Program Milestones

- **March 2020** : Announcement of collaboration with the National Research Council of Canada (NRC) to develop a pan-coronavirus vaccine candidate targeting COVID-19, severe acute respiratory syndrome (SARS), and Middle East respiratory syndrome (MERS)
    - Collaboration will combine VBI's viral vaccine expertise, eVLP technology platform, and coronavirus antigens with the NRC's uniquely-designed COVID-19 antigens and assay development capabilities
    - IND-enabling pre-clinical studies will be conducted at both the NRC core facilities and at VBI's research facility in Ottawa, Canada
- **Q4 2020** : Clinical study materials expected to be available for human clinical studies

Summary

Summary

ANTICIPATED CATALYSTS THROUGH 2020 YEAR-END:

1. ***Sci-B-Vac®*: *Hepatitis B Prophylactic Vaccine***
   - *Q2 2020 –* Pre-BLA discussions expected with FDA
   - *Beginning Q4 2020 –* Submissions of applications for regulatory approvals in the U.S., Europe, and Canada expected to begin

2. ***VBI-1901*: *GBM Vaccine Immunotherapeutic (Immuno-Oncology)***
   - *Mid-year 2020 –* Expanded immunologic and tumor response data as well as potentially-predictive biomarker data expected from VBI-1901 + GM-CSF Phase IIa (Part B) study arm
   - *Q4 2020 –* Initial immunologic data expected from VBI-1901 + $AS01_B$ Phase IIa (Part B) study arm

3. ***VBI-2601*: *Hepatitis B Immunotherapeutic***
   - *H2 2020 –* Initial human proof-of-concept Phase Ib/IIa data readout expected

4. ***VBI-2901*: *Pan-Coronavirus Prophylactic Vaccine***
   - *Q4 2020 –* Clinical study materials expected to be available

VBI Vaccines Leadership

MANAGEMENT

Jeff Baxter
President & CEO

GlaxoSmithKline · THE COLUMN GROUP

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

HARVARD MEDICAL SCHOOL

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

Lakehead University Laurentian Medicine · AMRIC Advanced Medical Research Institute of Canada

Chris McNulty
Chief Financial Officer

Massachusetts Institute of Technology · genzyme · HARVARD BUSINESS SCHOOL

Nell Beattie
Chief Business Officer

ARTISAN Healthcare Consulting · Tuck School of Business at Dartmouth

Avi Mazaltov
Global Head of Manufacturing
SciVac General Manager

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VBI Vaccines Global Footprint

HEADQUARTERS – CAMBRIDGE, MA

- 7 FTEs (Incl. CEO, CSO, CFO, CBO)
- Central location in biotechnology hub

RESEARCH OPERATIONS – OTTAWA, CANADA

- ~35 FTEs (Incl. CMO)
- R&D team and facility

MANUFACTURING FACILITY – REHOVOT, ISRAEL

- ~80 FTEs
- GMP manufacturing facility for the production of Sci-B-Vac®

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