



CORPORATE PRESENTATION

JULY 2020



PDS Biotechnology

*A new generation of multi-functional
cancer immunotherapies*

Frank Bedu-Addo Ph.D. President & CEO



Forward-Looking Statements

This presentation contains forward-looking statements about PDS Biotechnology Corporation (“PDSB”), and its businesses, business prospects, strategies and plans, including but not limited to statements regarding anticipated pre-clinical and clinical drug development activities and timelines and market opportunities. All statements other than statements of historical facts included in this presentation are forward-looking statements. The words “anticipates,” “may,” “can,” “plans,” “believes,” “estimates,” “expects,” “projects,” “intends,” “likely,” “will,” “should,” “to be,” and any similar expressions or other words of similar meaning are intended to identify those assertions as forward-looking statements. These forward-looking statements involve substantial risks and uncertainties that could cause actual results to differ materially from those anticipated.

Factors that may cause actual results to differ materially from such forward-looking statements include those identified under the caption “Risk Factors” in the documents filed with the Securities and Exchange Commission from time to time, including its Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K. You are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date of this presentation. Except to the extent required by applicable law or regulation, PDSB undertakes no obligation to update the forward-looking statements included in this presentation to reflect subsequent events or circumstances.

PDS Biotechnology leadership team has demonstrated success in the development and commercialization of leading pharmaceutical products

■ Frank Bedu-Addo, PhD Chief Executive Officer

- Senior executive experience with management of strategy and execution at both large pharma and biotech
- Notable drug development:
Abelcet[®] (Liposome Company/ Elan)
PEG-Intron[®] (Schering-Plough/ Merck)



■ Lauren V. Wood, MD Chief Medical Officer

- >30 years of translational clinical research experience
- Former Director of Clinical Research at the National Cancer Institute Center for Cancer Research (Cancer Vaccine Branch)



■ Gregory Conn, PhD Chief Scientific Officer

- Co-founder
- >35 years of drug development experience
- In-depth experience with biotech drug discovery, product development and manufacturing



■ Michael King Chief Financial Officer (Interim)

- Senior executive experience with over 20 years of experience in pharma and drug development
- In-depth experience with M&A transactions, capital markets, and investor relations



PDS Biotech is well-poised to transform vaccines and cancer treatment by fulfilling the promise of immunotherapy

1

Powerful immunotherapy platform that activates therapeutic and preventive immunological pathways

2

Demonstrated potential for strong clinical efficacy and durability of response with minimal toxicity

3

Diversified pipeline focused on oncology and infectious disease

4

Clinical studies in areas of high unmet medical need supported by leaders in the field

PDS Biotech is a clinical stage biotechnology company developing a pipeline of immunotherapies based on the proprietary Versamune[®] platform

CORPORATE OVERVIEW

- Publicly listed on NASDAQ: PDSB
- ~15 employees with headquarters in Florham Park and Princeton, NJ
- 15.4M shares outstanding* with approximately \$21.0M in cash**

VERSAMUNE[®] PLATFORM

- Versatile and potent T-cell-activating platform
- Clinically validated induction of active antigen-specific killer helper T-cells as well as antibodies *in vivo*
- Promising clinical efficacy in early trials of PDS0101 monotherapy with good safety and no dose limiting toxicities

PIPELINE

Oncology

- **PDS0101 (Phase 2):** HPV-associated cancers
- **PDS0102:** Prostate, breast cancers
- **PDS0103:** Ovarian, breast, colorectal and lung cancers
- **PDS0104:** Melanoma

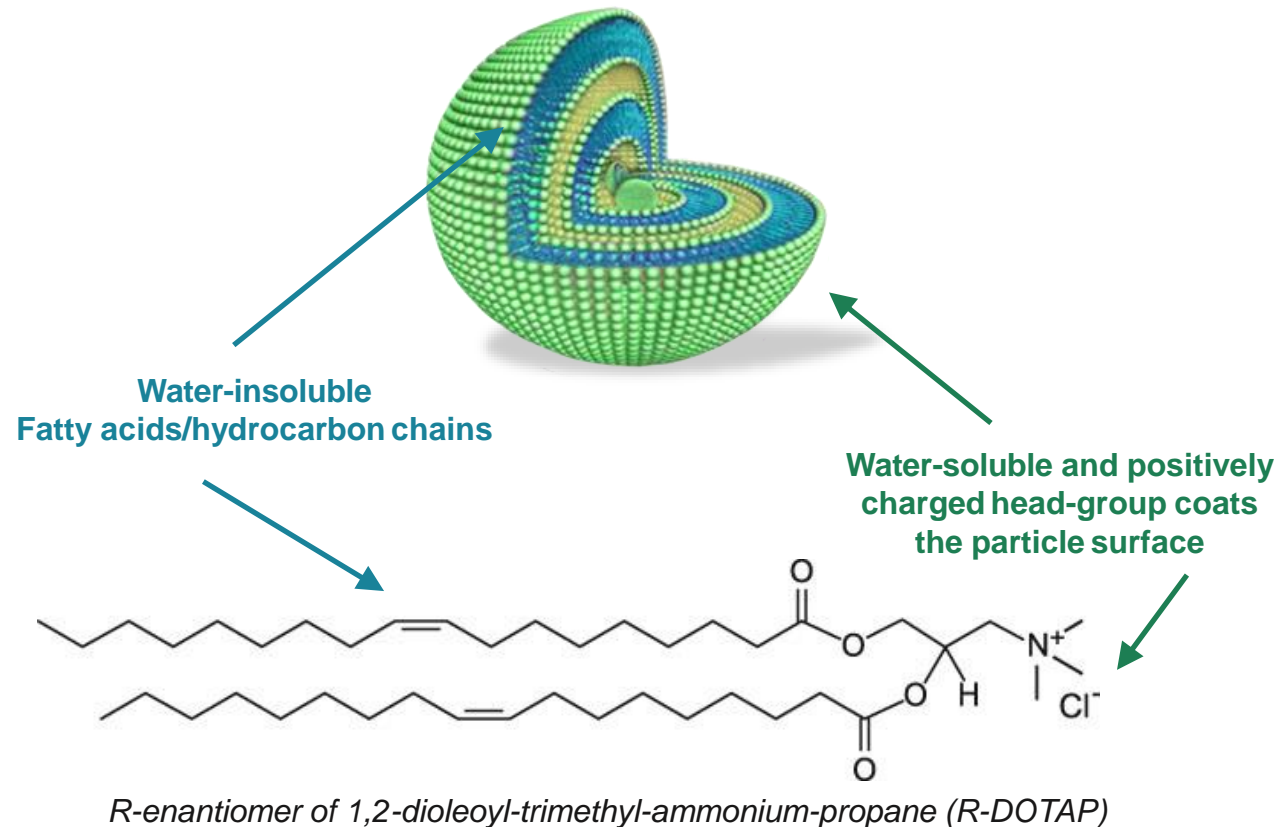
Infectious Disease

- **PDS0201:** Tuberculosis vaccine
- **PDS0202:** Universal influenza vaccine
- **PDS0203:** COVID-19 vaccine
- **PDS0204:** COVID-19 vaccine

A 3D scientific illustration of a spherical virus particle. The particle has a textured, greyish surface with numerous protruding spikes. Several green, Y-shaped antibody molecules are shown bound to the surface of the virus. The background is a dark blue gradient with some faint, out-of-focus green structures.

Versamune® Platform

Versamune[®] is a proprietary T-cell activating platform engineered to induce a robust, targeted anti-tumor response *in vivo*



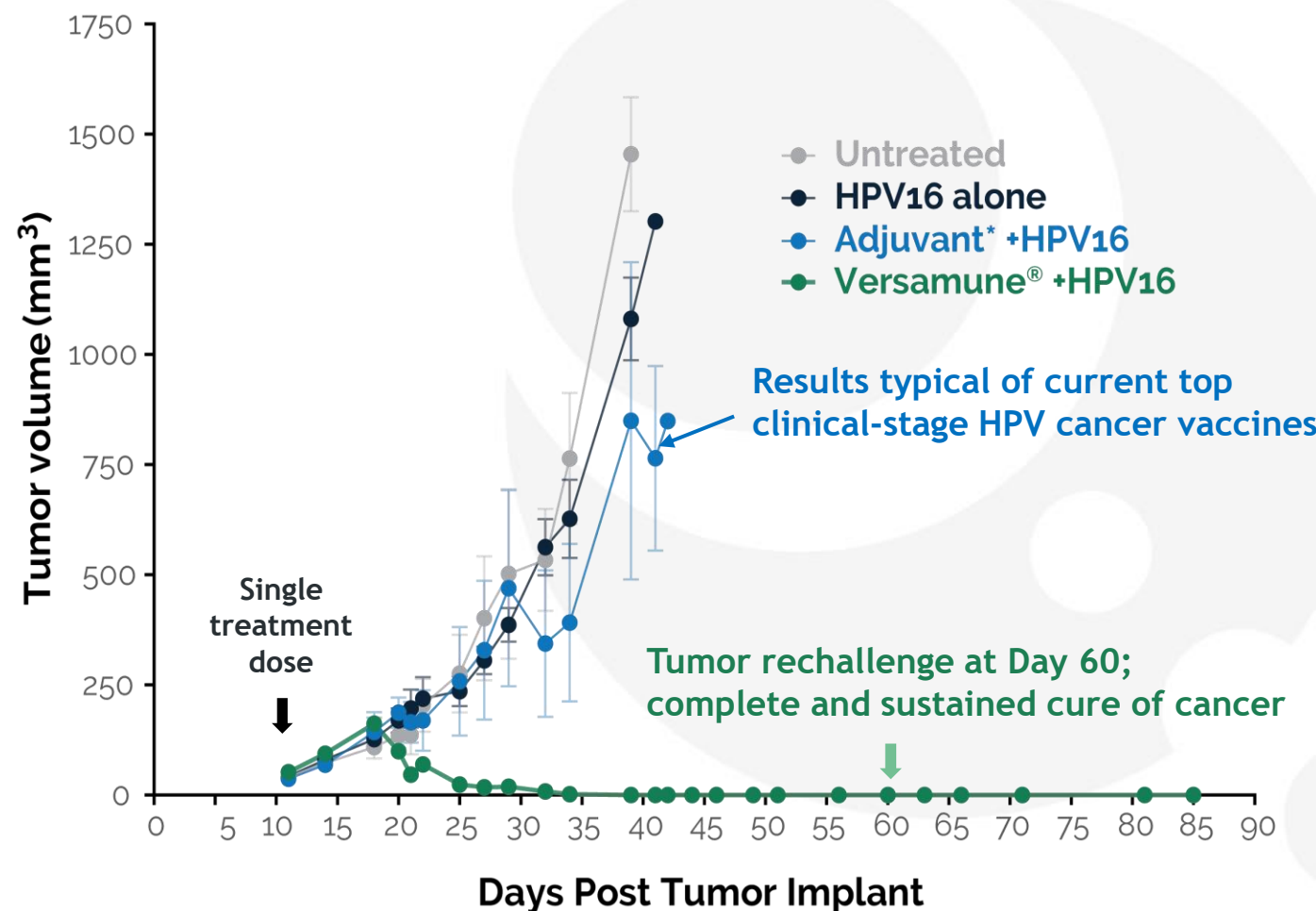
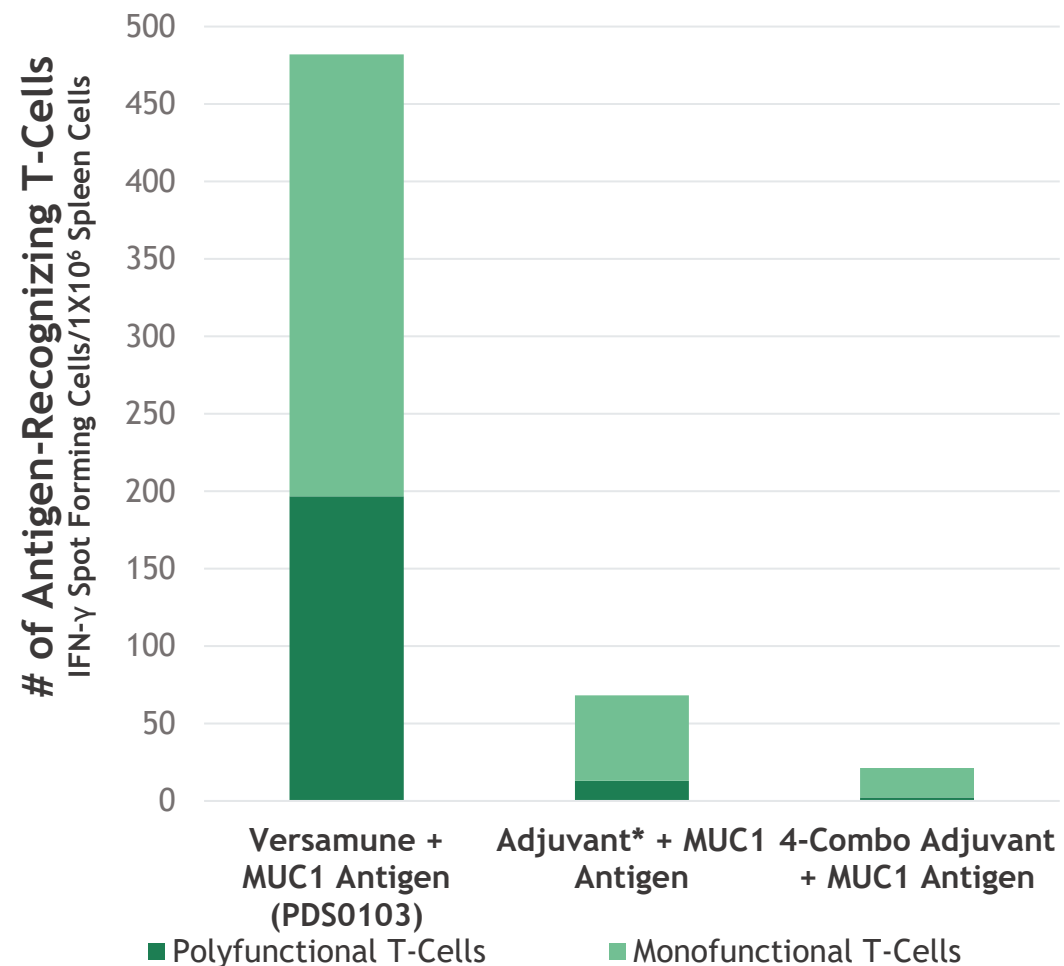
- Versamune[®] is based on proprietary, positively charged and immune activating lipids that form spherical nanoparticles in aqueous media
- The nanoparticles are sized to mimic viruses, which promotes excellent uptake by dendritic cells of the immune system
- Activates the important Type I interferon immunological signaling pathway
- Versamune[®] promotes the activation and maturation of dendritic cells, which then migrate to the lymph nodes

Versamune® has demonstrated the potential to overcome the challenges of immunotherapy in oncology and infectious disease

Challenges of Immunotherapy	How Versamune® May Overcome the Challenge
Inability to perform the necessary steps to induce a strong therapeutic killer T-cell response <i>in-vivo</i>	Versamune® design and novel immunological mechanisms of action promote a powerful disease-specific killer T-cell response
Mechanistic limitations have resulted in lack of therapeutic benefit in human studies	Mechanism of action associated with regression of disease in human studies (PDS0101 monotherapy)
Potential for systemic toxicities	Mechanism of action results in a lack of clinically relevant toxicities, even at the highest dose, in human studies

Greater quantity and quality of Versamune[®]-induced killer T-cells may result in unique ability to eradicate HPV-positive tumors after a single dose

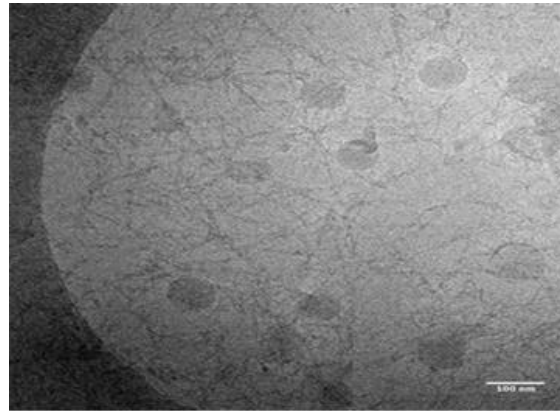
Produces > 10-fold number of highly potent (polyfunctional) killer T-cells vs. other T-cell technologies



The combination of Versamune® and a proprietary antigen is engineered for simplicity and ease of administration



Vials of HPV16 mix (L)
and Versamune® (R)



Versamune® formulation
is mixed before injection*








Delivered via
subcutaneous injection

A 3D scientific illustration of a cancer cell, depicted as a large, irregular, greyish-brown mass with a highly textured, bumpy surface. The cell is set against a dark blue background. Several green, Y-shaped molecules, representing antibodies, are shown binding to the cell's surface. One antibody is prominently bound near the center, while others are scattered around the cell, some appearing to be in the process of binding. The word "Oncology" is written in a large, white, sans-serif font across the middle of the image, partially overlapping the cell.

Oncology

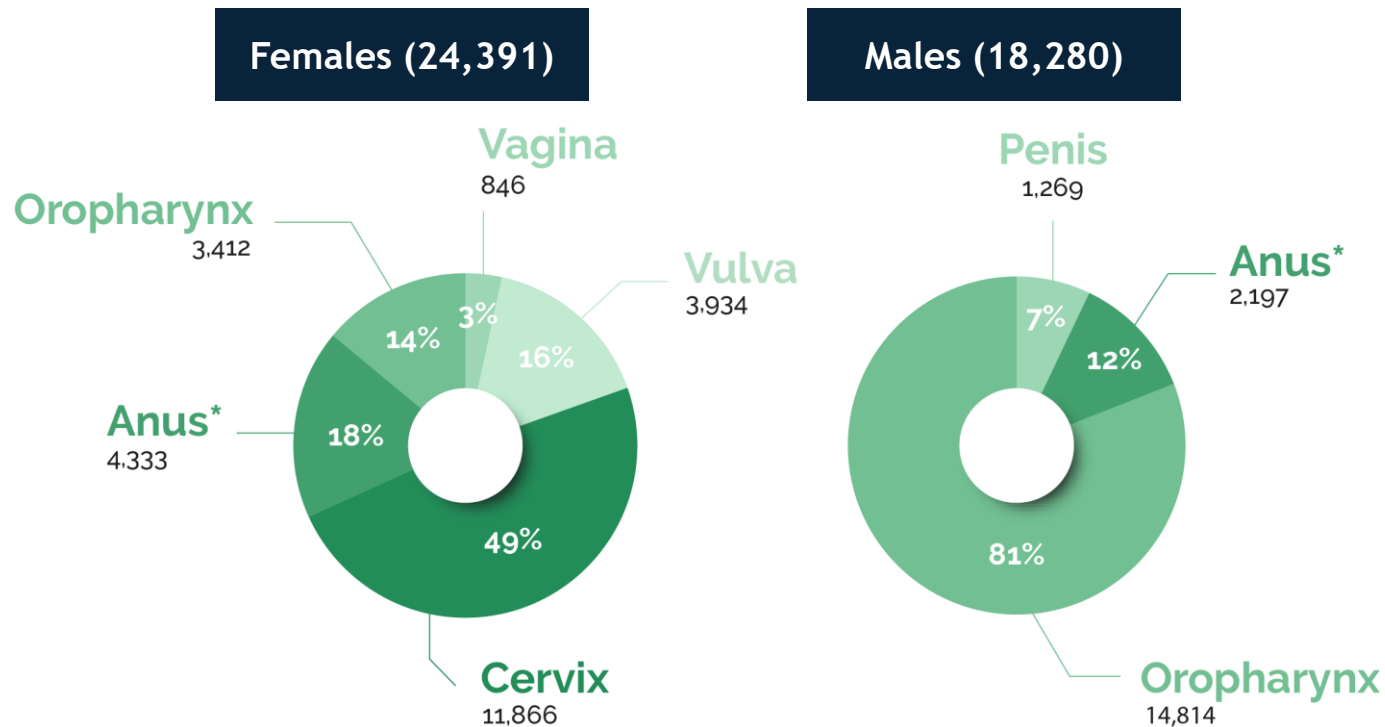
PDS Biotech's immuno-oncology pipeline combines the Versamune® platform with proprietary tumor antigens across several cancer types

PRODUCT	INDICATION	COMBINATION	PC	P1	P2	P3	R	PARTNER(S)
Oncology								
<u>PDS0101</u> <u>(HPV16)</u>	First line treatment of recurrent / metastatic head and neck cancer	KEYTRUDA®						
<u>PDS0101</u> <u>(HPV16)</u>	Advanced HPV-associated malignancies	M7824 NHS-IL12						
<u>PDS0101</u> <u>(HPV16)</u>	Stage IIb-IVa cervical cancer	Chemo-radiation						
<u>PDS0102</u> <u>(TARP)</u>	Prostate and breast cancer	Immunotherapy						
<u>PDS0103</u> <u>(MUC-1)</u>	Breast, colorectal, ovarian and NSCLC cancer	Immunotherapy						
<u>PDS0104</u> <u>(TRP2)</u>	Melanoma	Immunotherapy						

PDS Biotech Funded  Partner Co-Funded 

PDS0101 is designed to treat cancers caused by human papillomavirus (HPV)

Approximately 43,000 patients are diagnosed with HPV-associated cancers each year, a number unlikely to be impacted by increased use of HPV preventive vaccines in the next decade

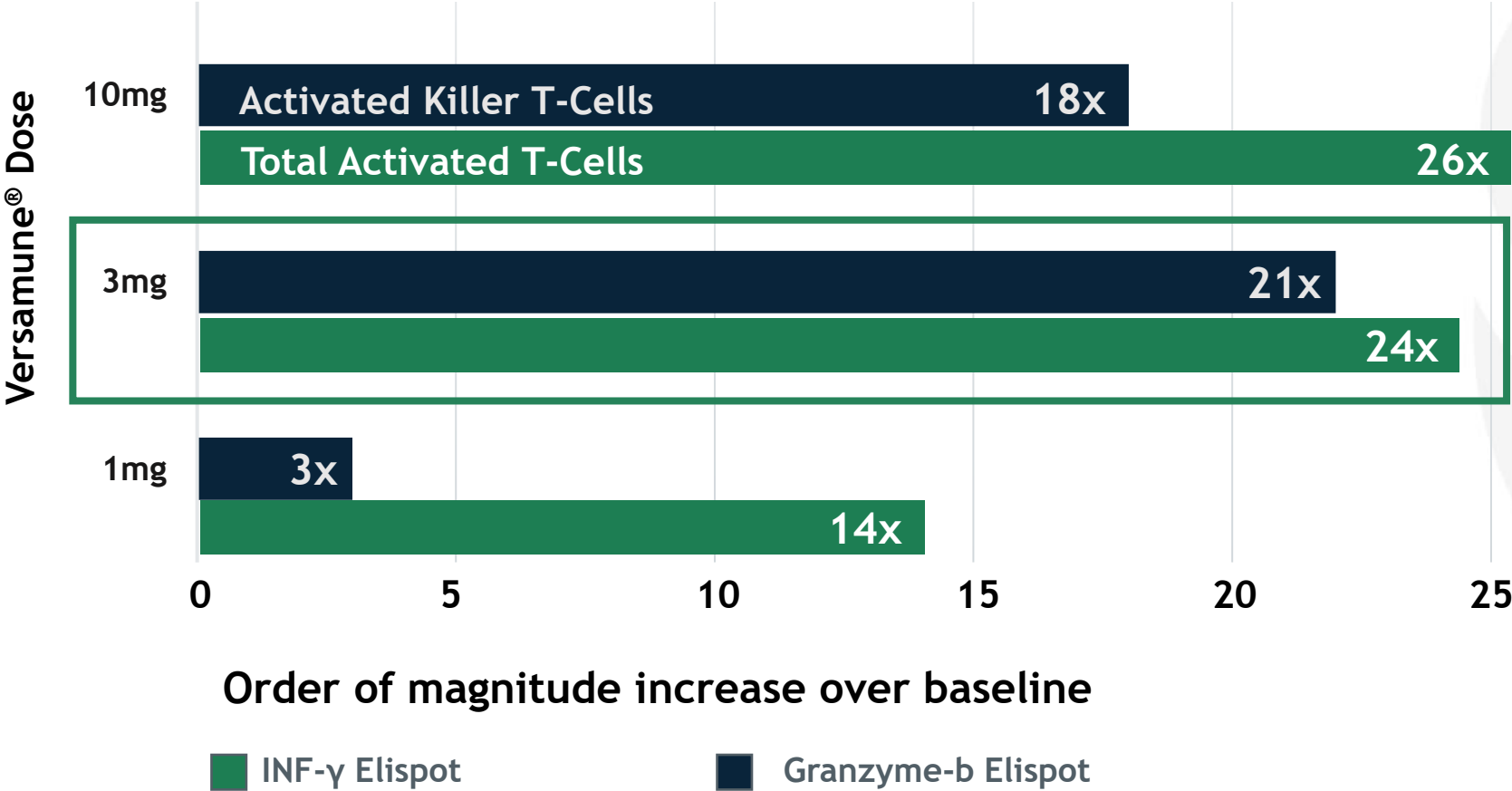


- **Oropharyngeal (head & neck) cancers**
 - >18,000 cases annually
 - Most common HPV-cancer in men, **90% of cases are HPV16-specific**
 - **Incidence increasing**
- **Cervical cancer**
 - ~12,000 cases annually
 - Most common HPV-cancer in women, 50-60% of cases are HPV16-specific
 - Incidence steady
- **Initial market research suggests market penetration of ~20% is reasonable for PDS0101**

PDS0101 combines the utility of the Versamune® platform with a proprietary mix of HPV16 antigens, the most virulent high-risk HPV type and by far the most prevalent in patients with HPV-associated cancer

PDS0101 Phase 1 clinical trial: Unique *in vivo* demonstration of high levels of HPV-specific killer T-cells in circulating blood

Clinical study results successfully demonstrate translation of Versamune®’s multi-functional mechanism of action between pre-clinical models and humans



Clinical Study Results in Patients with CIN

- Immunogenicity at Day 14
- Defined dose for Phase 2 studies (3mg)
- No dose-limiting toxicities

Follow-up of patients in PDS0101 Phase 1 study demonstrated promising clinical responses at all three tested doses



- A post-hoc, retrospective analysis, demonstrated complete lesion regression in at least 60% of evaluable patients (6/10) as early as 1-3 months after treatment
 - No lesion recurrence occurred within the 2-year evaluation period
- Spontaneous regression of CIN1 occurs in about 44% of patients over a 2-year duration*
- These results were remarkably positive as most patients were infected with multiple high-risk HPV types
- Two patients who had regression by cytology were not considered clinical responders:
 - The first regressed to atypical cells of undetermined significance at the first post-treatment evaluation (3 months) but HPV detected
 - The second had complete regression by cytology at the first post-treatment evaluation (3 months) but had residual CIN by colposcopy

PDS Biotech clinical strategy in advanced cancer is to focus on efficiency and risk mitigation to proof of concept

Versamune®-based immunotherapies are being developed as combination therapies to exploit the demonstrated synergies between Versamune® and other anti-cancer agents

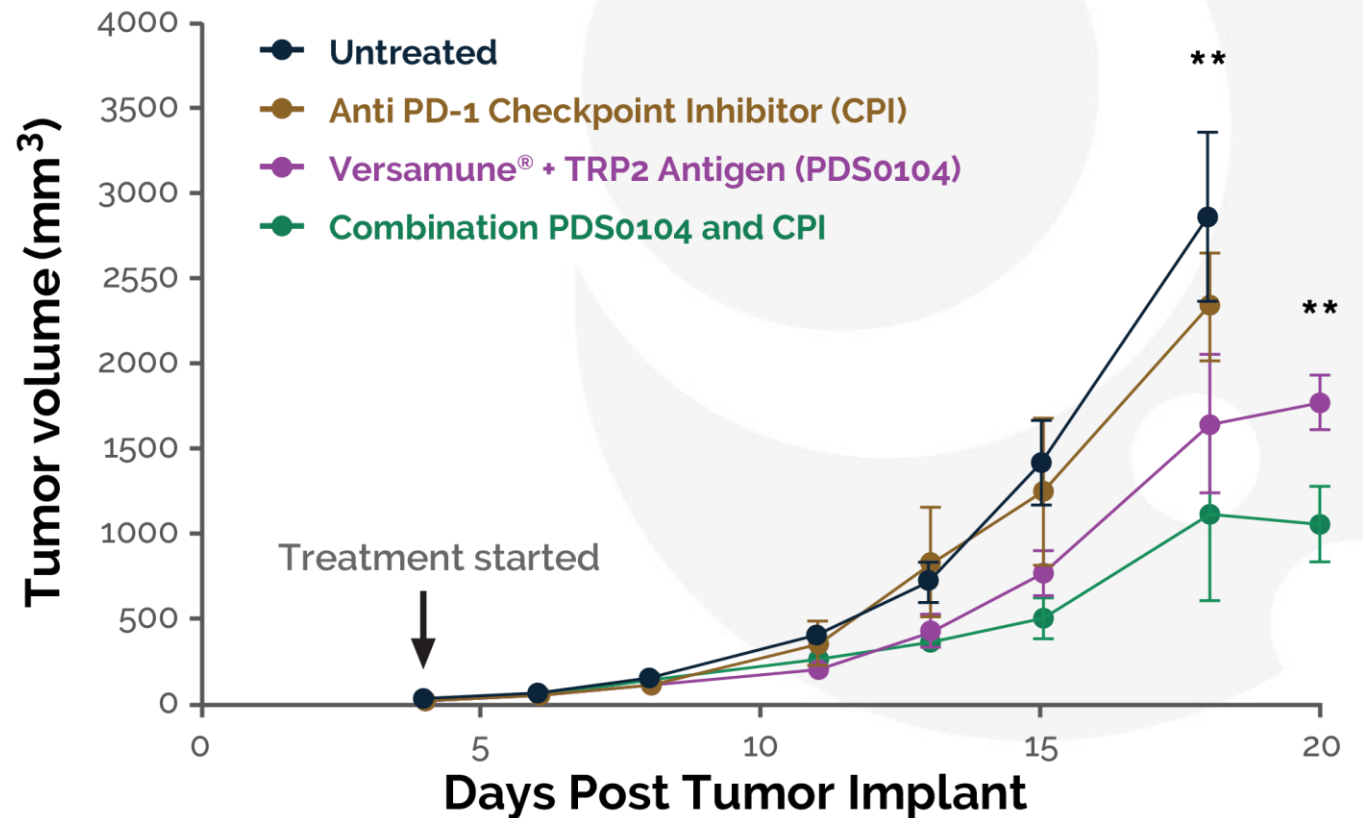
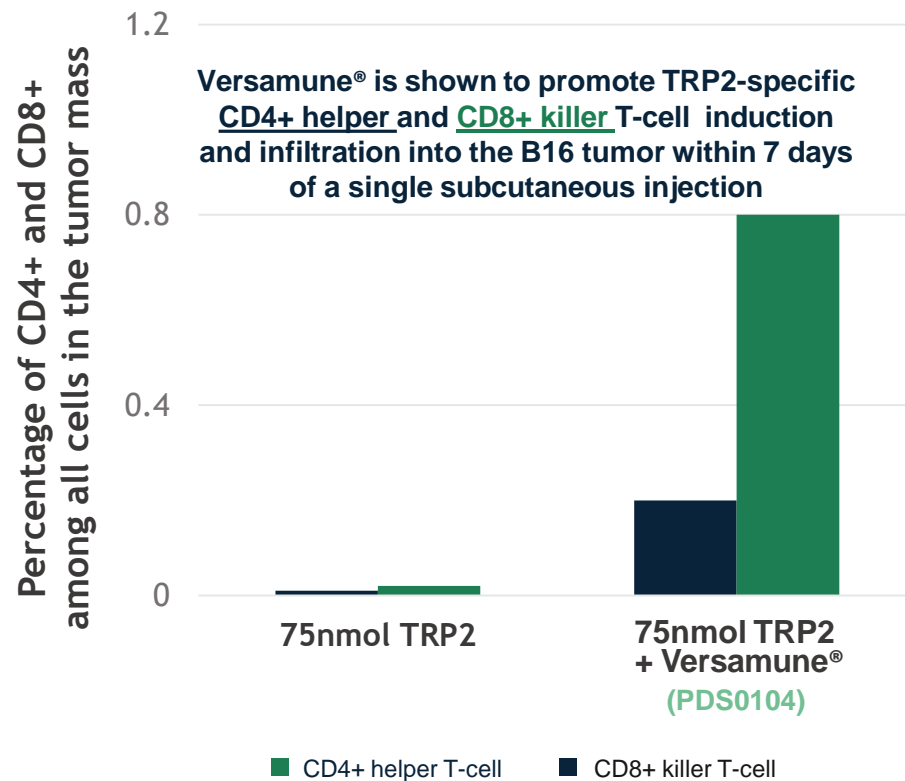
- Checkpoint inhibitors have shown confirmed clinical efficacy and have demonstrated clinical benefit in late stage cancer
 - Checkpoint inhibitors block a key immunological defense mechanism for cancer cells, and are reported to work primarily in patients whose immune systems are already generating tumor-attacking CD8+ killer T-cells pre-treatment
- Using various tumor-specific proteins (antigens), Versamune® has demonstrated the unique ability to generate large and superior numbers of CD8+ killer T-cells that effectively recognize and kill antigen-expressing cancer cells in pre-clinical and human clinical studies

PDS Biotech is developing a new generation of advanced cancer treatments combining Versamune®-based immunotherapies with checkpoint inhibitors and other standard of care therapies

The robust T-cell response induced by Versamune® results in the potential for enhancement of efficacy of checkpoint inhibitors in immune suppressive B16 melanoma

Early clinical studies showed the checkpoint inhibitor to be ineffective in treating B16 melanoma, a notoriously difficult model to treat.

Versamune® + TRP2 melanoma antigen (sub-optimal levels) promotes infiltration of active killer T-cells into tumors, strong synergy with the checkpoint inhibitor, and significantly enhanced anti-tumor efficacy



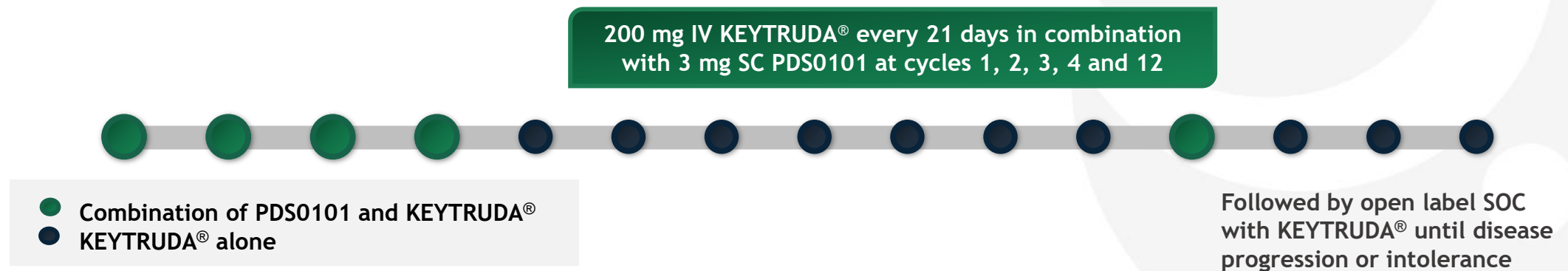
PDS0101 is the only compound selected by Merck for evaluation in combination with KEYTRUDA® as first line cancer therapy

- PDS0101 + KEYTRUDA®
 - Keytruda® first immunotherapy approved as standard of care for first line treatment of cancer (recurrent or metastatic head and neck cancer)
 - PDS0101 first T-cell activating immunotherapy to demonstrate both high levels of circulating CD8+ killer T-cells and therapeutic benefit as monotherapy
 - Unique immuno-oncology combination addressing first-line treatment of cancer
 - Validation of both efficacy and safety of PDS0101
 - ***Anticipated advantages of combining PDS0101 with standard of care:***
 - Mitigated risk
 - Potential enhanced rates of recruitment
 - Potential for rapid market penetration and market leadership

TBD pending level of COVID-19-related restrictions on health system operations



A Phase 2 study of PDS0101 in combination with KEYTRUDA® in first-line treatment of recurrent/metastatic head and neck cancer is planned

- PDS Biotechnology-sponsored study with KEYTRUDA® supplied by Merck
- Primary endpoints: Efficacy, safety and tolerability
- Study design: Phase 2 open-label study
- Inclusion criteria: Recurrent/metastatic head and neck cancer and HPV16 infection
- Clinical Trial Identifier: NCT04260126



- Expected initiation: TBD pending level of COVID-19-related restrictions on health system operations



Investigator-Led Phase 2 studies of PDS0101 in combination therapy will evaluate efficacy and safety in treatment of advanced HPV cancers

Funded By	Phase 2 Open Label Study (Safety and Efficacy)	Important Considerations	Initiation
	<ul style="list-style-type: none"> Advanced HPV-associated malignancies – all types Triple combination with EMD Serono's M7824 and NHS-IL12 34 subjects Clinical Trial Identifier: NCT04287868 	<ul style="list-style-type: none"> NCI selection and confirmation of synergies with PDS0101 All three agents have demonstrated efficacy as monotherapies in early trials 	Initiated in June 2020
	<ul style="list-style-type: none"> Advanced, localized cervical cancer (Stage IIb-IVa) Combination with chemo-radiotherapy (CRT-standard of care) 35 subjects 	<ul style="list-style-type: none"> T-cell induction has strong potential to enhance CRT anti-cancer efficacy Mitigated risk Potential for rapid market penetration and market leadership 	TBD pending level of COVID-19-related restrictions on health system operations



Infectious Disease

PDS Biotech’s infectious disease pipeline combines the Versamune[®] platform with proprietary antigens across several diseases

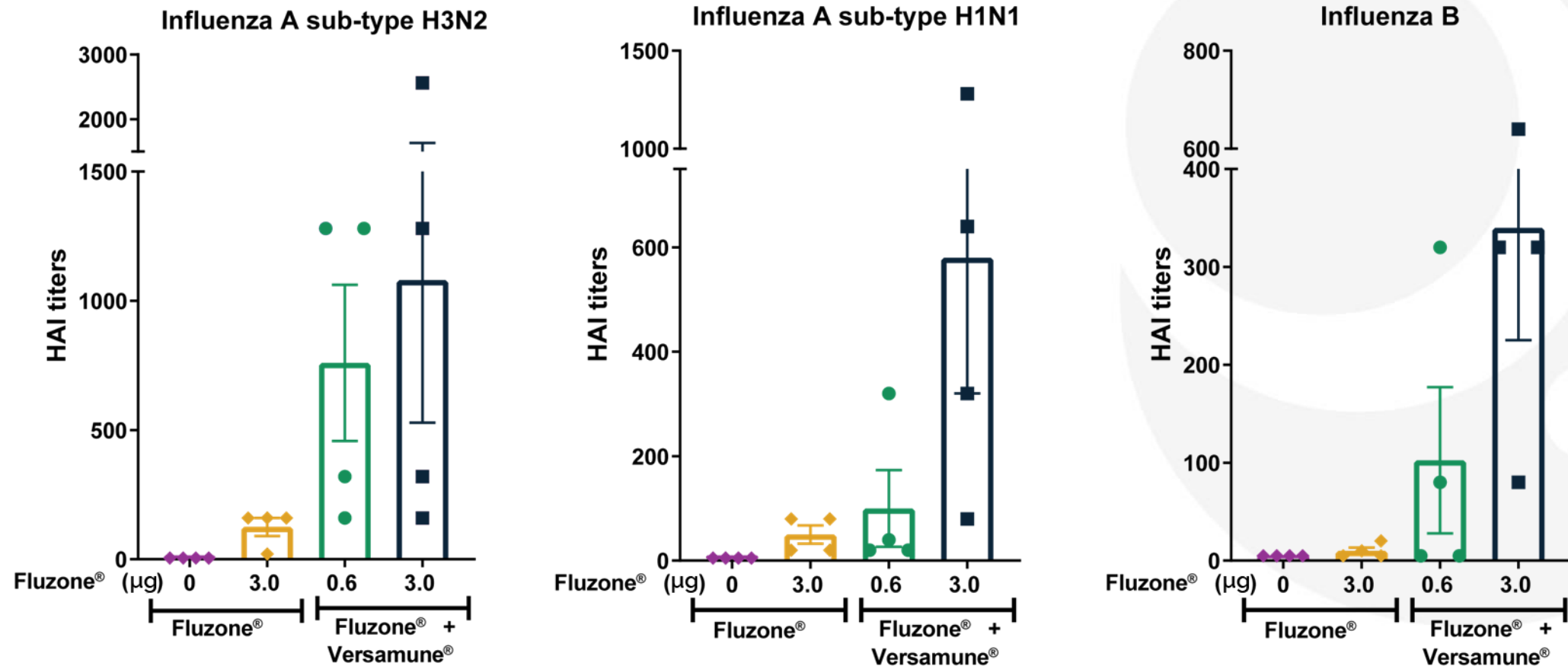
PRODUCT	INDICATION	COMBINATION	PC	P1	P2	P3	R	PARTNER(S)
Infectious Disease								
<u>PDS0201</u> <u>(M-tuberculosis)</u>	Prevention of tuberculosis		<div></div>					
<u>PDS0202</u> <u>(influenza)</u>	Universal prevention of influenza		<div></div>					
<u>PDS0203</u> <u>(SARS-CoV-2)</u>	Prevention of COVID-19		<div></div>					
<u>PDS0204</u> <u>(SARS-CoV-2FC)</u>	Prevention of COVID-19		<div></div>					

PDS Biotech Funded

Partner Co-Funded

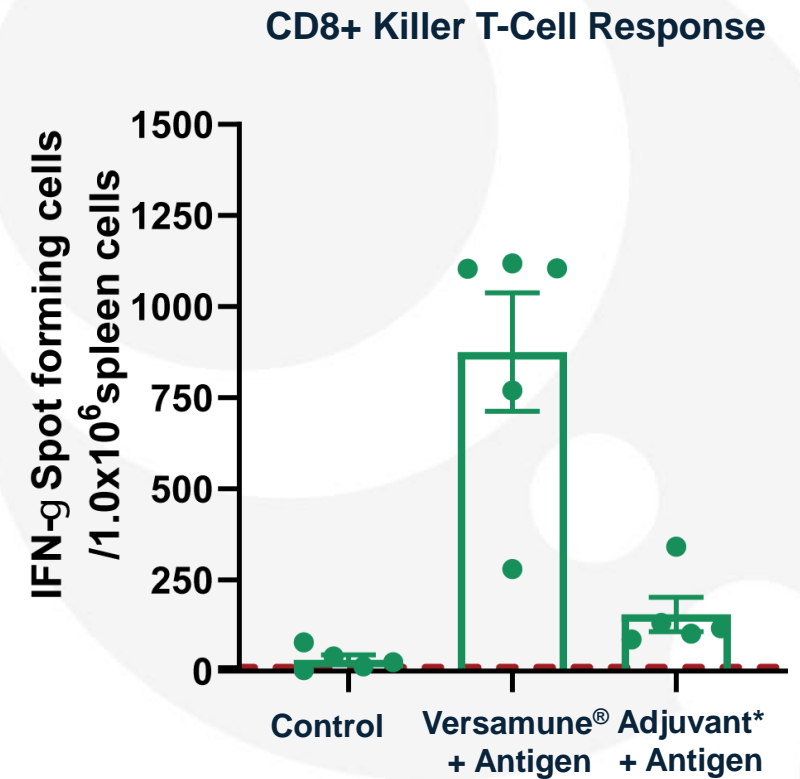
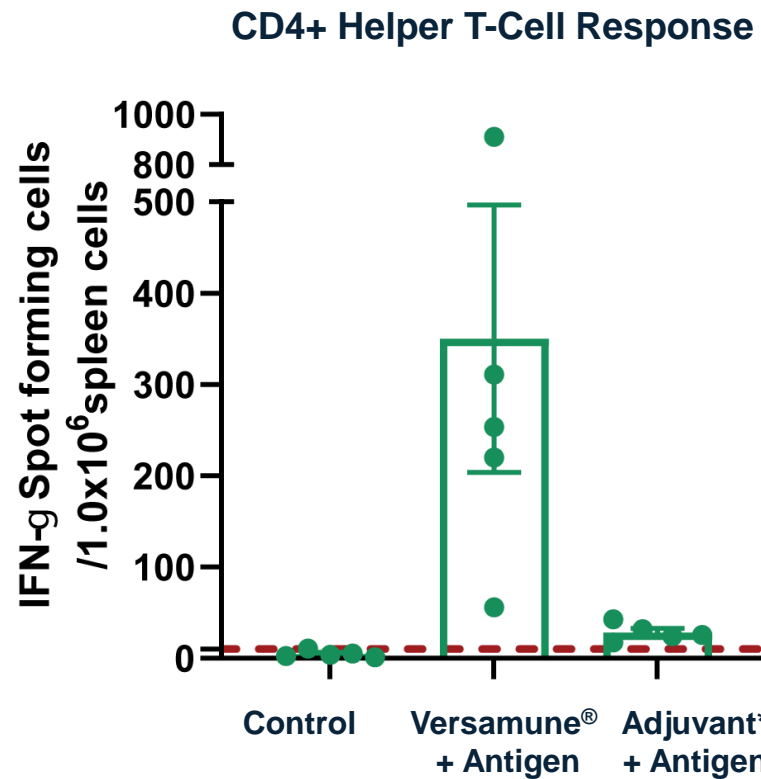
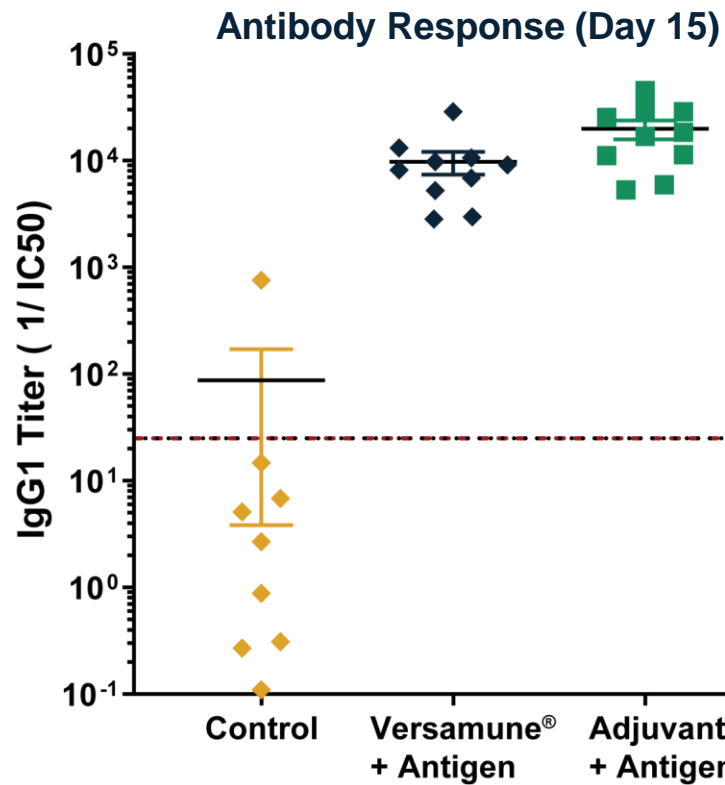
Versamune[®] dramatically enhances induction of neutralizing antibodies against various influenza strains and enables significant dose sparing

The addition of Versamune[®] to Fluzone[®], a seasonal influenza vaccine, resulted in a 40-fold increase in protective HAI titers – achieving superior levels of HAI titers with 5-fold lower doses of Fluzone[®]



Versamune®-based vaccines uniquely induce strong antibody, helper and killer T-cell responses against an antigen to provide superior protection

Versamune® uniquely induces both potent antibody mediated responses and high levels of helper and killer T-cells vs. CFA when both are administered with the same recombinant protein antigen



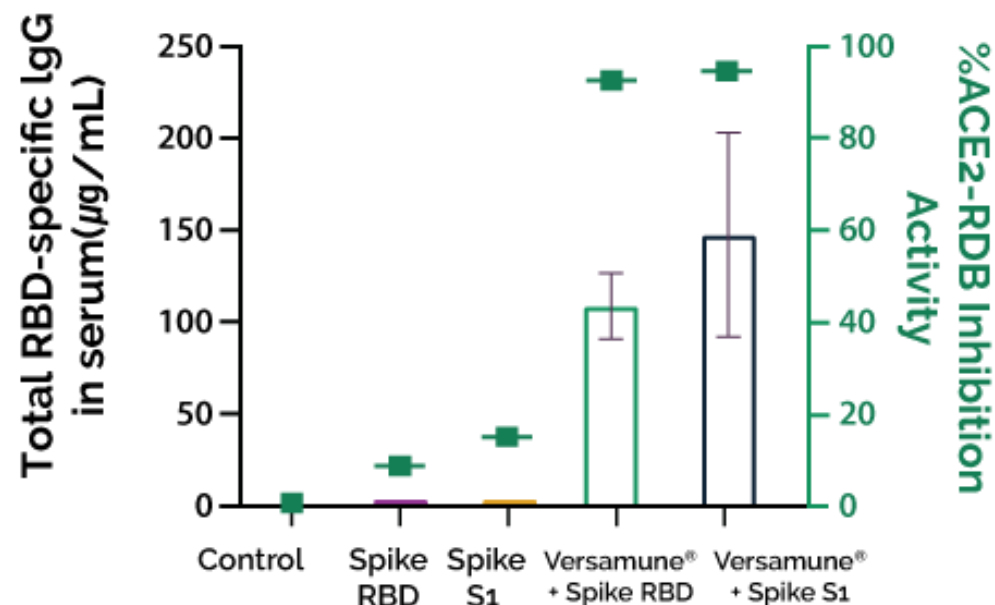
Preclinical testing of PDS Biotech's Versamune[®]-based COVID-19 vaccine candidates is ongoing with a clear target profile

- 1 Induction of highly-potent, SARS-CoV-2-specific killer T-cells
- 2 Demonstrate high levels of both SARS-CoV-2-specific T-cell and antibody response after a single dose
- 3 No safety signals
- 4 Poised for rapid commercial scale up

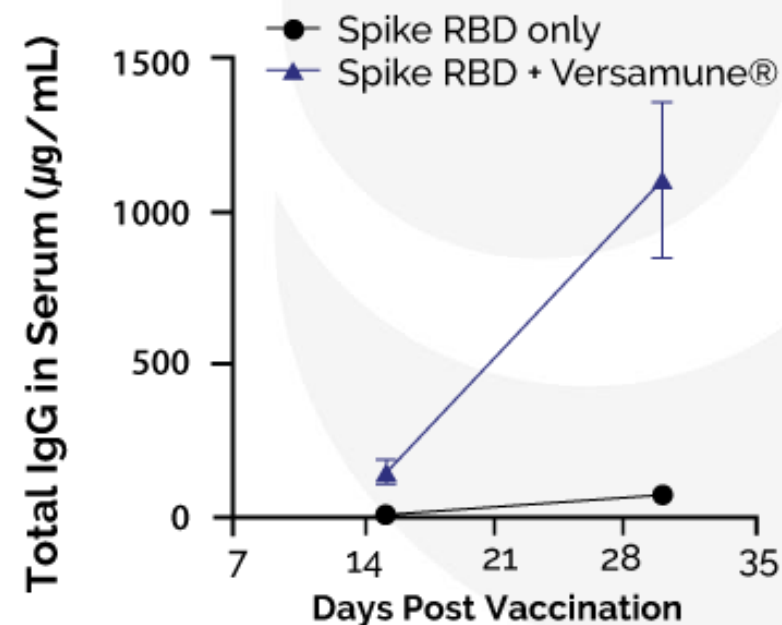
Versamune[®]-based COVID-19 vaccine induces rapid and potent antibody responses to SARS-CoV-2 in two weeks

Initial preclinical data suggest Versamune[®] induces antibodies at a level equivalent to those observed in the sickest COVID-19 patients within 2 weeks of vaccination

Day 14: Neutralizing Antibody Response

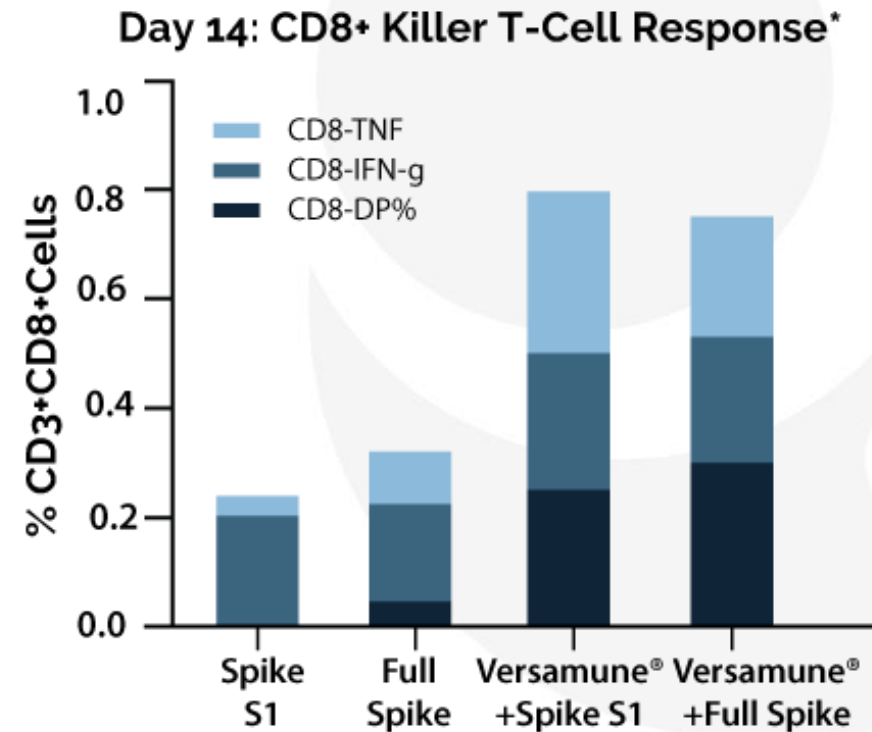
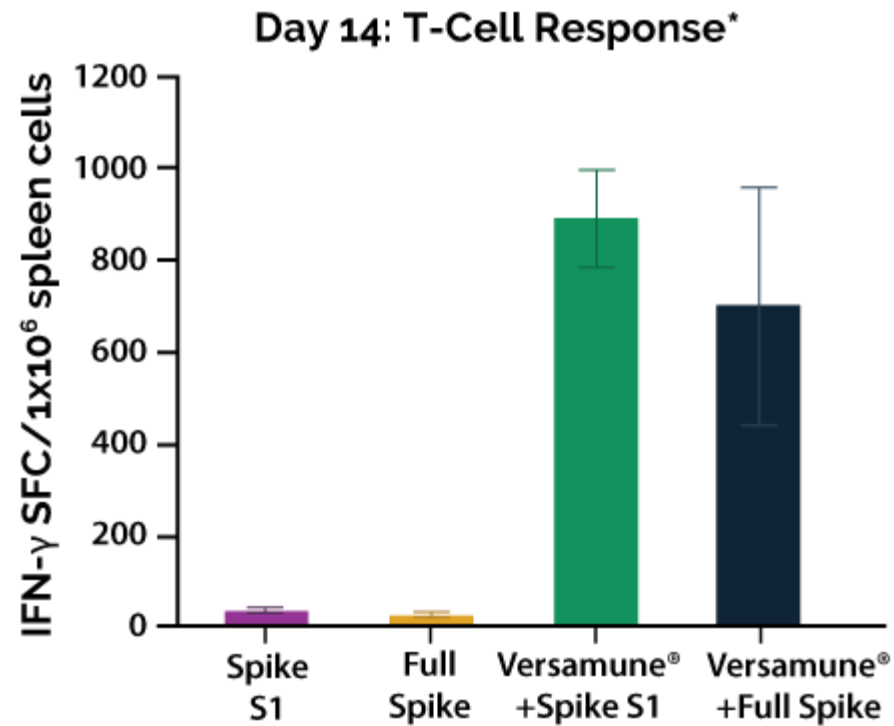


Days 14-30: Antibody Response Strengthens*



In addition, Versamune[®]-based COVID vaccine uniquely induces strong T-cell responses against SARS-CoV-2 in two weeks

Initial preclinical data suggest Versamune[®] induces T-cells – including polyfunctional CD8+ killer T-cells - against SARS-CoV-2 when combined with either the Spike S1 protein or the full S-protein





Intellectual Property and Financials

Multiple layers of technology and product protection for Versamune®-related products through mid-2030s are secured

- Versamune® and associated patents are owned and licensed by PDS Biotech
- Patents cover methods and compositions stimulating/promoting an immune response with Versamune® technology in various forms and mechanisms through 2034
 - Use of specific cationic lipids to induce an immune response
 - Compositions and use of any cationic lipid to activate MAP kinase
 - Compositions and use of R-DOTAP to induce immune response
 - Micellar antigen + cationic lipids compositions (US still ongoing)
 - Compositions of R-DOTAP with GM-CSF to reduce immune suppressive myeloid derived suppressor cells in the tumor
- Five issued international patent families (including Europe and Japan)

Strong financial position to support near-term milestones

Timing of the 2020 milestones will be impacted by the COVID-19 pandemic

Nasdaq	PDSB
Shares Outstanding*	15.4M
Cash**	\$21.0M
Share Price*	\$2.60
Market Cap*	\$36.9M
Debt*	---

- PDS0201 (M. tuberculosis): Complete development and feasibility testing
- PDS0202 (influenza): Complete development and feasibility testing
- PDS0203 and PDS0204 (SARS-CoV-2): Complete development and feasibility testing
- PDS0101 (HPV): Initiation of PDS Biotech-NCI Phase 2 combination study in advanced HPV-associated cancers
- PDS0101 (HPV): Initiation of Partnered Phase 2 combination study in advanced cervical-cancer

PDS Biotech is well-poised to transform vaccines and cancer treatment by fulfilling the promise of immunotherapy

1

Powerful immunotherapy platform that activates therapeutic and preventive immunological pathways

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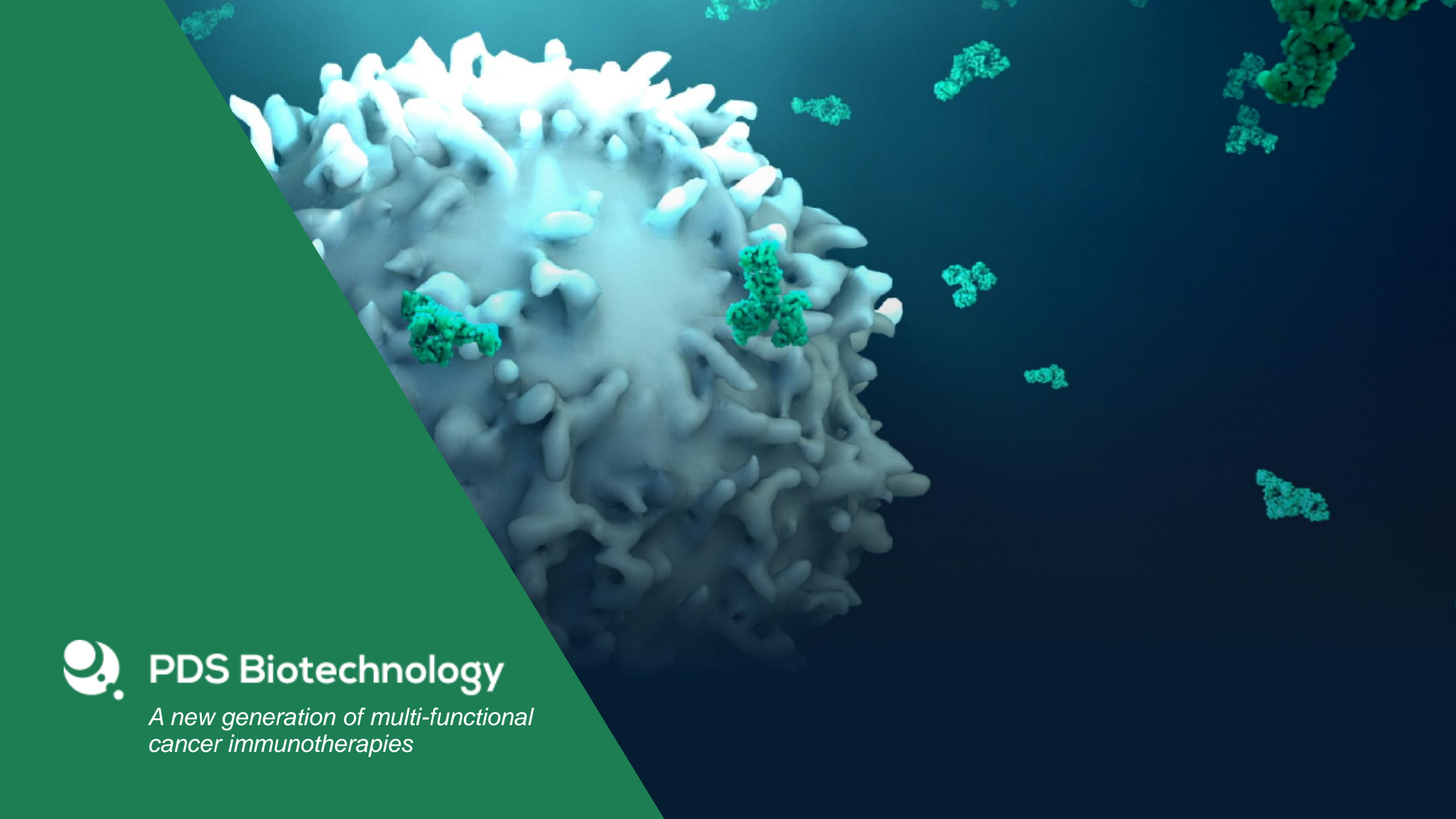
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