

# INVESTOR PRESENTATION

NASDAQ: PDSB | October 2022



## PDS Biotechnology

Precision Designed Science For Immunotherapy

# Forward-Looking Statements

Certain information in this presentation may include forward-looking statements (including within the meaning of Section 21E of the United States Securities Exchange Act of 1934, as amended, and Section 27A of the United States Securities Act of 1933, as amended) concerning PDS Biotechnology Corporation (the “Company”) and other matters. These statements may discuss goals, intentions and expectations as to future plans, trends, events, results of operations or financial condition, or otherwise, based on current beliefs of the Company’s management, as well as assumptions made by, and information currently available to, management. Forward-looking statements generally include statements that are predictive in nature and depend upon or refer to future events or conditions, and include words such as “may,” “will,” “should,” “would,” “expect,” “anticipate,” “plan,” “likely,” “believe,” “estimate,” “project,” “intend,” “forecast,” “guidance”, “outlook” and other similar expressions. Forward-looking statements are based on current beliefs and assumptions that are subject to risks and uncertainties and are not guarantees of future performance. Actual results could differ materially from those contained in any forward-looking statement as a result of various factors, including, without limitation: the Company’s ability to protect its intellectual property rights; the Company’s anticipated capital requirements, including the Company’s anticipated cash runway and the Company’s current expectations regarding its plans for future equity financings; the Company’s dependence on additional financing to fund its operations and complete the development and commercialization of its product candidates, and the risks that raising such additional capital may restrict the Company’s operations or require the Company to relinquish rights to the Company’s technologies or product candidates; the Company’s limited operating history in the Company’s current line of business, which makes it difficult to evaluate the Company’s prospects, the Company’s business plan or the likelihood of the Company’s successful implementation of such business plan; the timing for the Company or its partners to initiate the planned clinical trials for PDS0101, PDS0203 and other Versamune® and Infectimune™ based product candidates; the future success of such trials; the successful implementation of the Company’s research and development programs and collaborations, including any collaboration studies concerning PDS0101, PDS0203 and other Versamune® and Infectimune™ based product candidates and the Company’s interpretation of the results and findings of such programs and collaborations and whether such results are sufficient to support the future success of the Company’s product candidates; the success, timing and cost of the Company’s ongoing clinical trials and anticipated clinical trials for the Company’s current product candidates, including statements regarding the timing of initiation, pace of enrollment and completion of the trials (including the Company’s ability to fully fund its disclosed clinical trials, which assumes no material changes to our currently projected expenses), futility analyses, presentations at conferences and data reported in an abstract, and receipt of interim or preliminary results (including, without limitation, any preclinical results or data), which are not necessarily indicative of the final results of the Company’s ongoing clinical trials; the timing of and the Company’s ability to obtain and maintain U.S. Food and Drug Administration or other regulatory authority approval of, or other action with respect to, PDS0101, PDS0203 and other Versamune® and Infectimune™ based product candidates; any Company statements about its understanding of product candidates mechanisms of action and interpretation of preclinical and early clinical results from its clinical development programs and any collaboration studies; and other factors, including legislative, regulatory, political and economic developments not within the Company’s control, including unforeseen circumstances or other disruptions to normal business operations arising from or related to COVID-19. The foregoing review of important factors that could cause actual events to differ from expectations should not be construed as exhaustive and should be read in conjunction with statements that are included herein and elsewhere, including the risk factors included in the Company’s annual and periodic reports filed with the SEC. The forward-looking statements are made only as of the date of this press release and, except as required by applicable law, the Company undertakes no obligation to revise or update any forward-looking statement, or to make any other forward-looking statements, whether as a result of new information, future events or otherwise.

Versamune® is a registered trademark, and Infectimune™ is a trademark of PDS Biotechnology Corporation.

KEYTRUDA® is a registered trademark of Merck Sharp and Dohme LLC, a subsidiary of Merck & Co., Inc., Rahway, NJ, USA.

## Company Overview

- 1 Clinical-stage Company developing targeted immunotherapies to treat cancer and infectious disease
- 2 Versamune® and Infectimune™ platforms leverage the body's own defense systems to induce disease-specific killer T cells and antibodies to combat cancer and infectious disease
- 3 Technology developed by Prof. Leaf Huang PH.D., a world-renowned pioneer in nanoparticle drug delivery
- 4 Clinical partnerships with Merck, MD Anderson Cancer Center, National Cancer Institute and Mayo Clinic
- 5 4 on-going Phase 2 clinical trials
- 6 PDS0101 granted Fast Track designation from the FDA - End-of-Phase 2 meeting October 2022 allowing for registrational trial
- 7 Cash as of June 30, 2022 - **\$53.0M** (unaudited) – August 2022 added approximately **\$25.0M** in debt financing



A 3D molecular model of a protein-ligand complex. The protein is a large, light blue, multi-domain structure with a complex surface. The ligand is a smaller, dark blue, multi-ring structure. They are shown in a close, interacting conformation. The background is a dark teal gradient with faint, larger-scale molecular structures visible.

# Versamune<sup>®</sup>

## Oncology Platform

# Promising top line PDS0101 phase 2 clinical data

Interim efficacy data from 3 oncology trials and 56 patients suggest potential long-term efficacy

Versamune® Technology Platform: <i>In-vivo</i> tumor-specific killer (CD8+) T-cell induction		
<b>HPV-positive metastatic head and neck cancer:</b> PDS0101 + Keytruda (SOC) in patients whose cancer has returned or spread after treatment	<b>41%</b> Objective response rate <sup>1</sup>	<b>89%</b> survival at 9 months
<b>Locally advanced cervical cancer:</b> PDS0101 + Chemoradiotherapy (SOC) in patients with <u>large localized tumors &gt;5cm</u> in the cervix and lymph nodes	<b>Data to be presented at SITC</b>	
Versamune® + NHS-IL12 Technology Platform: Overcomes cancer-induced immune suppression		
<b>Checkpoint inhibitor refractory HPV-Associated cancers:</b> PDS0101 + NHS-IL12 + Checkpoint inhibitor in patients who have <u>failed all treatment options</u> including checkpoint inhibitors	<b>63%</b> Objective response in optimal dose group <sup>2</sup>	<b>66%</b> survival at 16 months (all dose groups) <sup>2</sup>
<b>Advanced HPV-associated cancers:</b> PDS0101 + NHS-IL12 + Checkpoint inhibitor in patients whose cancer has returned or spread after treatment and have not been exposed to checkpoint inhibitors	<b>88%</b> Objective response <sup>3</sup> <b>38%</b> complete response	<b>75%</b> survival at 25 months <sup>3</sup>

<sup>1</sup>19% response rate with Keytruda monotherapy reported in KEYNOTE-048 study (CPS >1)

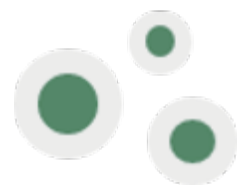
<sup>2</sup> Objective response rates in CPI refractory cancer reported to be <10%, and historical median survival is 3-4 months

<sup>3</sup>Objective response rates in HPV-positive cancer with pembrolizumab and nivolumab is <25% and overall survival of <12 months

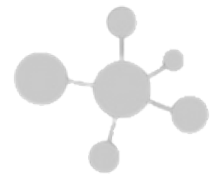
# The PDS Biotech Differentiation

Versamune® is designed to promote the 3 R's T cell activation

Versamune® based therapies also show potential to<sup>1</sup>:



Generate the **right** type, **right** potency and **right** quantity of effective CD8+ killer T cells



Generate memory T cells, to enhance long-lasting response



Generate potency without serious systemic side effects

# 12-30%

Success in checkpoint inhibitor treatments due to low CD8+ T cell response<sup>2</sup>

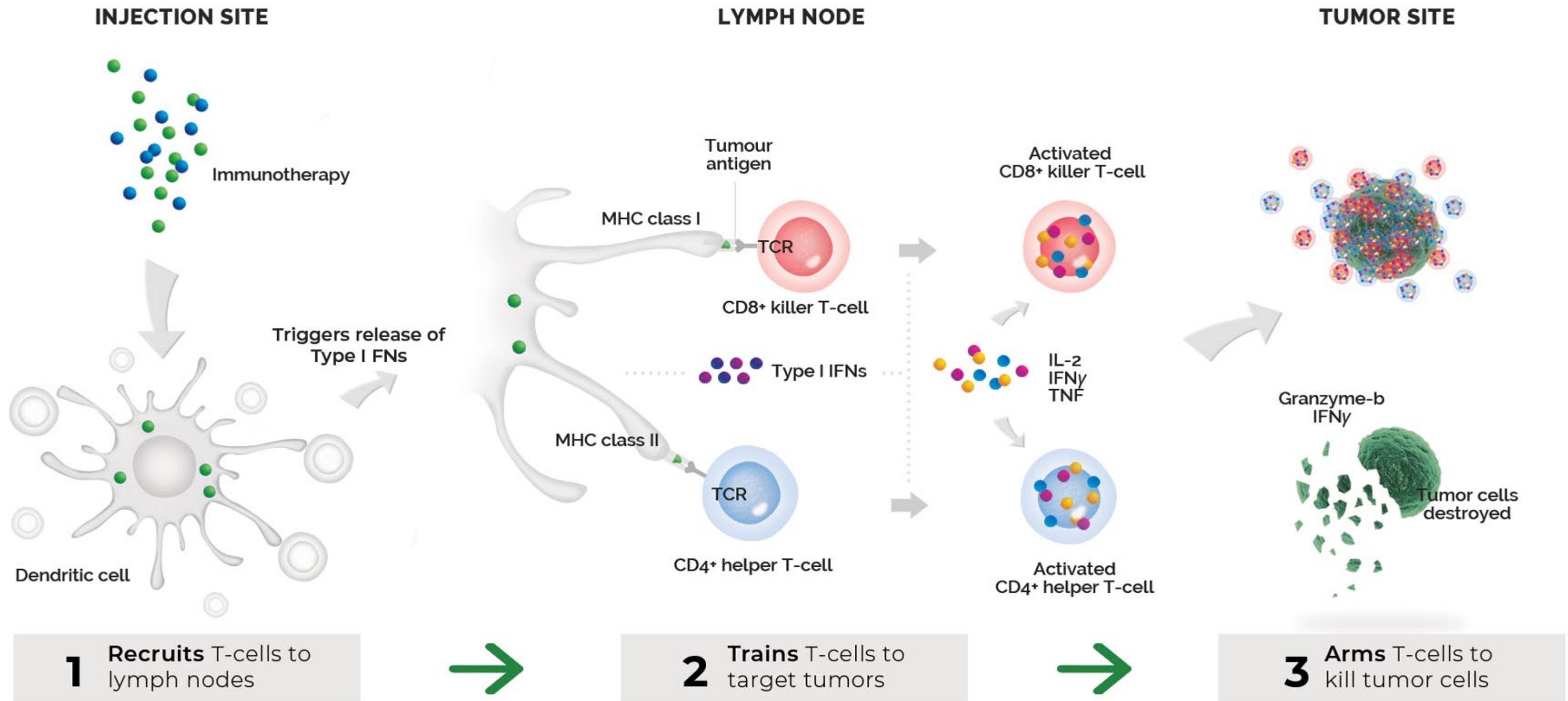
<sup>1</sup>Immunomodulation to enhance the efficacy of an HPV therapeutic vaccine, Journal for ImmunoTherapy of Cancer, June 2020

<sup>2</sup> Bintrafusp alfa, a bifunctional functional fusion protein targeting TGF-  $\beta$  and PD-L1, in patients with human papillomavirus-associated malignancies Journal for ImmunoTherapy of Cancer, December 2020









# Versamune® Platform

Designed to Recruit, Train and Arm T cells in the Body



Versamune® Platform

Versamune® based oncology pipeline is being developed in partnership with the leaders in immuno oncology

Candidate	Indication	Combination	PC	P1	P2	P3	R	Partner(s)
PDS0101 (HPV16) <i>VERSATILE-002</i> Fast Track Designation	Recurrent/metastatic HPV16-positive head and neck cancer <u>Arm 1</u> : CPI naïve 1st line treatment <u>Arm 2</u> : CPI refractory 2nd or 3rd line treatment	KEYTRUDA (standard of care)						
PDS0101 (HPV16) <i>NCI-led Triple Combination</i>	HPV-positive anal, cervical, head and neck, penile, vaginal, vulvar cancers <u>Arm 1</u> : CPI naïve 2nd line treatment <u>Arm 2</u> : CPI refractory 3rd line treatment	Bintrafusp and M9241						
PDS0101 (HPV16) <i>IMMUNOCERV</i>	1st line treatment of locally advanced (IB3-IVA) cervical cancer	Chemo-radiation (standard of care)						
PDS0101 (HPV16) <i>Mayo Clinic</i>	Pre-metastatic HPV-associated oropharyngeal cancer (OPSCC) <u>Arm 1</u> : PDS0101 monotherapy <u>Arm 2</u> : PDS0101 + KEYTRUDA	KEYTRUDA (standard of care)						
PDS0102 (TARP)	TARP-associated AML, prostate and breast cancers	TBD						
PDS0103 (MUC1)	MUC-1 associated breast, colon, lung, ovarian and other cancers	TBD						
PDS0104 (TRP2)	Melanoma	TBD						



# PDS010 1: Lead Asset

Designed to treat human papillomavirus (HPV16)-associated cancers

\$6B Market Opportunity<sup>1</sup>

More than 46,000<sup>2</sup> patients were estimated to have been diagnosed last year with HPV-associated cancers in the US<sup>1,2</sup>

HPV vaccination is not expected to impact the rate of HPV-related cancer incidence for decades<sup>3</sup>

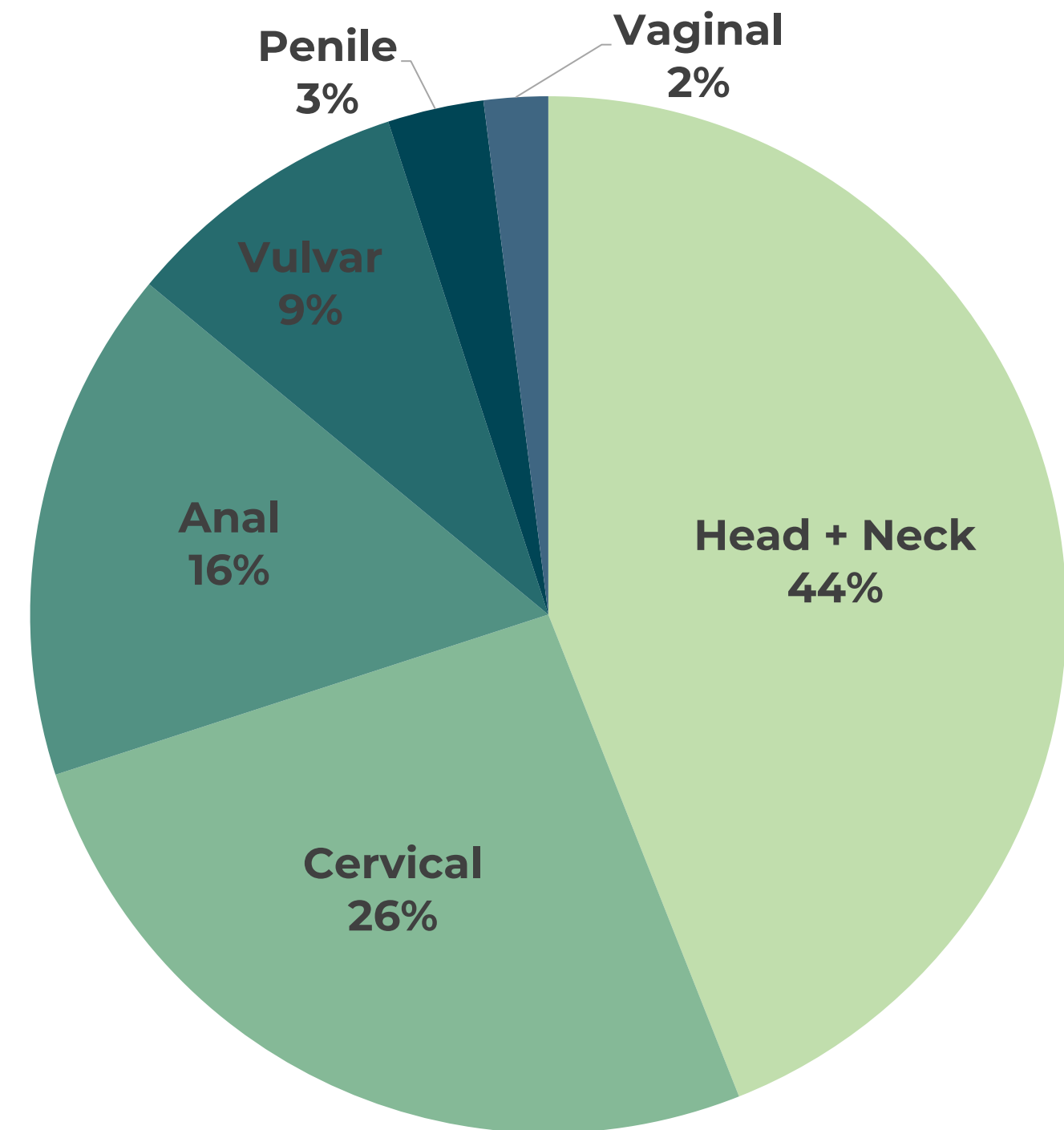
Existing immunotherapies cost \$150,000+ annually per patient<sup>1</sup>

<sup>1</sup>Company estimates based on CDC data. Assessments have not been adjusted to reflect HPV16-expression

<sup>2</sup>CDC website


<sup>3</sup> *Projected Association of Human Papillomavirus Vaccination with Oropharynx Cancer in the US 2020-2045*, JAMA Oncology, September 2021

US HPV-associated cancer incidence<sup>2</sup>



# Phase 2: PDS0101 in Combination with KEYTRUDA®

Company-sponsored trial for the potential treatment of HPV16-positive metastatic/recurrent head and neck cancer (VERSATILE-002)

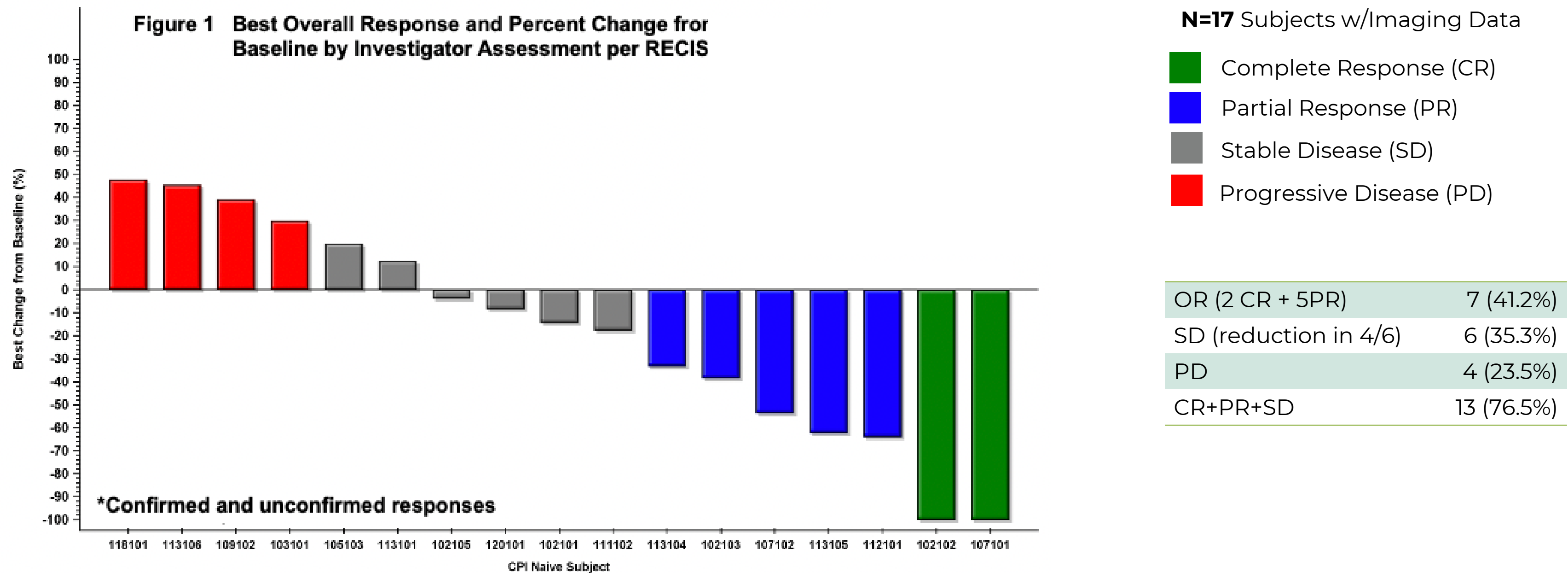
Indication	Treatment of patients with HPV16-positive head and neck cancer whose cancer has spread or returned
Clinical Agents	<u>KEYTRUDA®</u> (Standard of Care): Anti-PD1 checkpoint inhibitor (ORR ~20%) <u>PDS0101</u> : Versamune® based immunotherapy generating HPV-specific CD8+ and CD4+ T cells
Study Goals	<u>Group 1</u> : Objective response rate (ORR) as 1 <sup>st</sup> line treatment in checkpoint inhibitor (CPI) naïve patients <u>Group 2</u> : ORR in patients who have failed checkpoint inhibitor therapy (CPI refractory)
Status	Fast Track designation Q2 2022 – End-of-Phase 2 meeting with FDA –allows for registrational trial Efficacy and safety data presented on first 19 patients at ASCO Q2 2022 Data safety monitoring committee reviewed 43 patients; recommends trial continuation August 2022
Trial Partner	

Confirmation that PDS0101 enhances the therapeutic benefit of checkpoint inhibitors could expand evaluation of Versamune®-based therapies in multiple cancer indications

# Phase 2: PDS0101 + KEYTRUDA®

Company-sponsored trial for the potential treatment of HPV16-positive metastatic/recurrent head and neck cancer (VERSATILE-002)


As of last DMC meeting – to date 43 patients treated had zero grade 3 or higher treatment related adverse events





# Phase 2: PDS0101 + Bintrafusp alfa + M9241 (Triple Combination)

NCI-led trial for the potential treatment of HPV16-positive anal, cervical, head and neck, penile, vaginal, vulvar cancers

Indication	Treatment of patients with advanced refractory HPV16-associated cancers
Clinical Agents	<u>Bintrafusp alfa</u> : Bifunctional checkpoint inhibitor (PD-L1/ TGF-β) <u>M9241 (NHS-IL12)</u> : Tumor-targeting IL-12 (immunocytokine) <u>PDS0101</u> : Versamune® based immunotherapy generating HPV-specific CD8+ and CD4+ T cells
Study Goals	<u>Group 1</u> : Objective response rate (ORR) as 2 <sup>nd</sup> line treatment in checkpoint inhibitor (CPI) naïve patients <u>Group 2</u> : ORR in patients who have failed CPI therapy (CPI refractory)
Status	Expanded efficacy data released October 2022 Updated efficacy and safety data released at ASCO Q2 2022 Preliminary efficacy and safety data released at ASCO Q2 2021
Trial Partner	

Confirmation that PDS0101 enhances the therapeutic benefit of checkpoint inhibitors could expand evaluation of Versamune®-based therapies in multiple cancer indications

# Phase 2: Extended Interim Data – Efficacy and Safety

Extended interim data continue to appear to show clinical signs of efficacy, durability and safety

**Data updated as of October 2022**

% of Patients CPI refractory alive at median 16 months	66% (19/29)
% of Patients experienced Grade 3 treatment related adverse events	48% (24/50)
% of Patients experienced Grade 5 treatment related adverse events	0% (0/50)

HPV 16-positive checkpoint inhibitor naïve patients:

- 75% (6/8) were alive at a median of 25 months of follow up.
- 38% (3/8) of responders had a complete response.

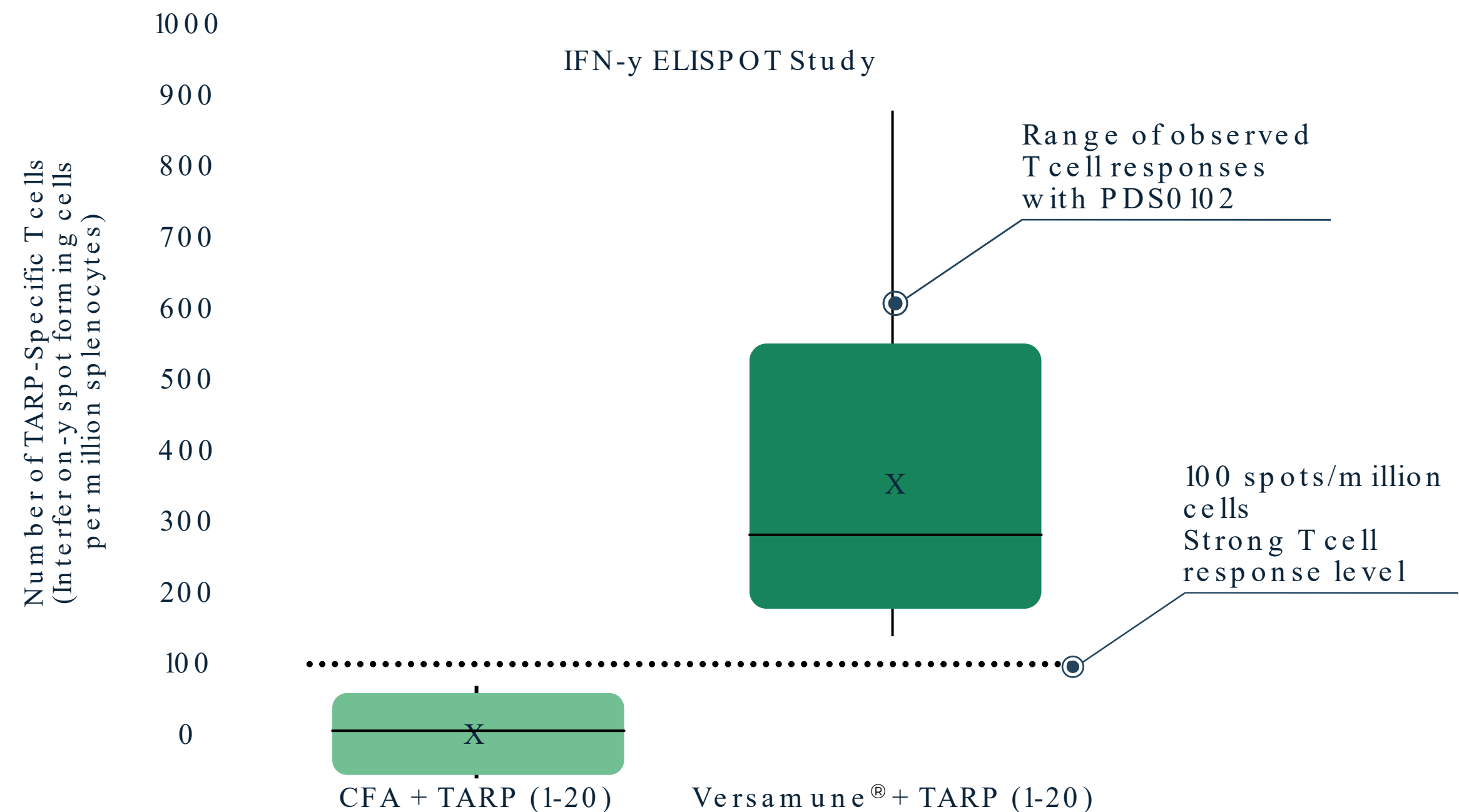
# PDS0102: TARP Antigen

Versamune® induced CD8+ killer T cells may result in the ability to treat TARP positive AML and prostate cancers

**\$40B** TARP Total Market Opportunity\*

Announced license with NCI TARP antigens

## Pre-Clinical Optimization Studies<sup>1</sup>: TARP-Specific T cell Induction after 2 injections of PDS0102



<sup>1</sup> Reference: Wood LV et al, Oncoimmunology, 2016, Vol. 5 (8)  
CFA –Complete Freund's Adjuvant a highly potent immune activator not used in humans due to potentially lethal toxicity

\*Reference: Surveillance Research Program, National Cancer Institute SEER  
Assumes \$150K for annual course of therapy; in line with current immunotherapy treatment. Assessments have not been adjusted to reflect TARP expression, which is currently unknown by tumor type



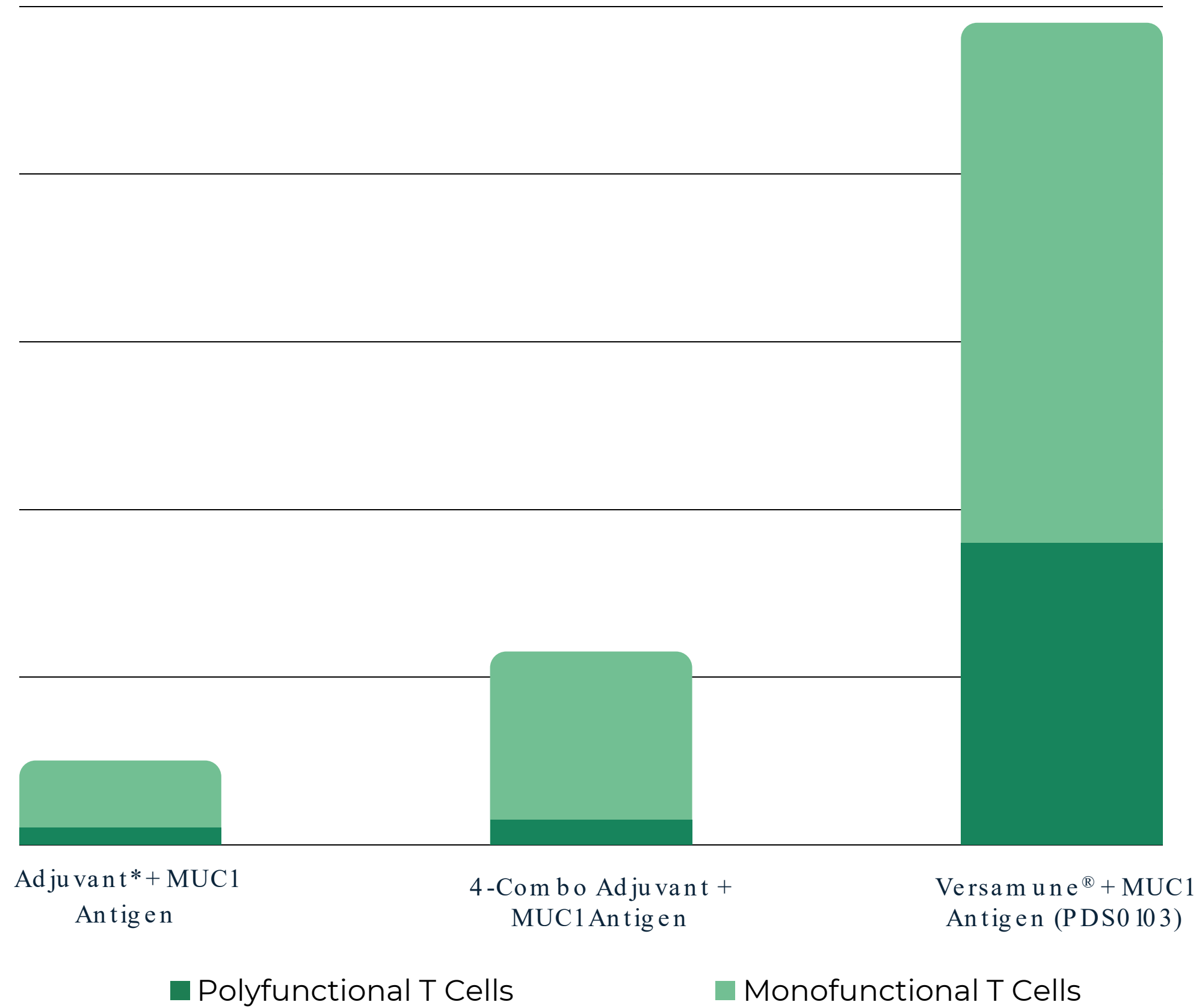
# PDS0103: MUC1 Antigen

Greater quantity and quality of Versamune<sup>®</sup> induced CD8+ killer T cells may result in the ability to treat breast, ovarian, lung, and colon cancers

\$100B MUC1 Total Market Opportunity\*

Induced a >10-fold number of polyfunctional (highly potent) MUC1 specific CD8+ T cells

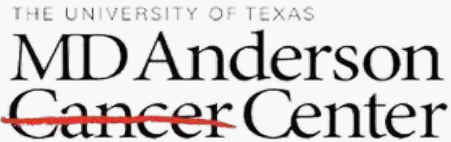
# of Antigen-Recognizing CD8+ T Cells  
IFN-γSpot Forming Cells/IX106 Spleen Cells



\*References: Surveillance Research Program, National Cancer Institute SEER, Cancer Institute SEER, Assumes \$150K for annual course of therapy; in line with current immunotherapy treatment, Assessments have not been adjusted to reflect MUC1-expression, which is currently unknown by tumor type  
Adjuvant = cytokine GMCSF  
J. Immunology, 2019 (202),1215; Studies in TC-1 tumor model with other immunotherapies reported in: Vaccine 2009, January 14, 27 (3): 431; Science Translational Medicine 2016, 13 April, Vol 8 Issue 334; Vaccine 2009, September 25, 27 (42):5906.

# Phase 2: PDS0101 + Chemoradiotherapy


Investigator-led trial evaluating the combination in patients with locally advanced cervical cancer (IMMUNOCERV)

Indication	Treatment of patients with locally advanced cervical cancer–Stages IB3-IVA
Clinical Agents	<u>Chemoradiotherapy (CRT –Standard of Care)</u> : Cisplatin and radiation therapy <u>PDS0101</u> : Versamune® based immunotherapy generating HPV-specific CD8+ and CD4+ T cells
Study Goals	Safety, rate of regression and local control in patients with primary tumor ≥5cm (n=35 patients)
Timing	Abstract accepted for presentation at the 37 <sup>th</sup> Annual Meeting for the Society for Immunotherapy of Cancer (SITC 2022) November 8- 12 <sup>th</sup>
Trial Partner	

If successful, this study could support further investigation of Versamune® based immunotherapies in combination with chemotherapy or CRT to treat multiple cancers

# Phase 2: PDS0101 Monotherapy and in Comb. with KEYTRUDA®

Investigator-led trial evaluating potential treatments in patients with HPV-associated oropharyngeal cancer with high risk of recurrence

Indication	Treatment of patients with oropharyngeal cancer prior to transoral robotic surgery
Clinical Agents	<u>KEYTRUDA®</u> : Cisplatin and radiation therapy <u>PDS0101</u> : Versamune® based immunotherapy generating HPV-specific CD8+ and CD4+ T cells
Study Goals	Safety, rate of regression and local control in patients transoral robotic surgery
Timing	Enrollment ongoing
Trial Partner	 MAYO CLINIC

If successful, this study could support the expansion of PDS0101 to earlier stage disease



# Projected Milestones Through 1Q 2023\*

	1Q22	2Q22	3Q22	4Q22	1Q23	2Q23	3Q23
PDS0101	✓						
	✓						
		✓					
		✓					
			✓				
PDS0103							

\*Based on current enrollment and forecast modeling as of June 2022. Subject to change.


A 3D molecular model of a protein-ligand complex. The protein is a large, light blue, multi-domain structure with a complex surface. The ligand is a smaller, dark blue, multi-ring structure. The background is a dark teal color with a subtle pattern of smaller, lighter blue molecular structures.

# Infectimune™

Infectious Disease Platform

# PDS Biotech's Infectious Pipeline

Developed in partnership with leaders in infectious disease

Candidate	Indication	PC	P1	P2	P3	R	Partner(s)
PDS0202 (influenza)	Universal prevention of influenza	<div></div>					 National Institute of Allergy and Infectious Diseases
PDS0203 (SARS-CoV-2)	Prevention of COVID-19	<div></div>					
PDS0201 (M-tuberculosis)	Prevention of tuberculosis	<div></div>					

PDS Biotech Funded



Partner Co-Funded





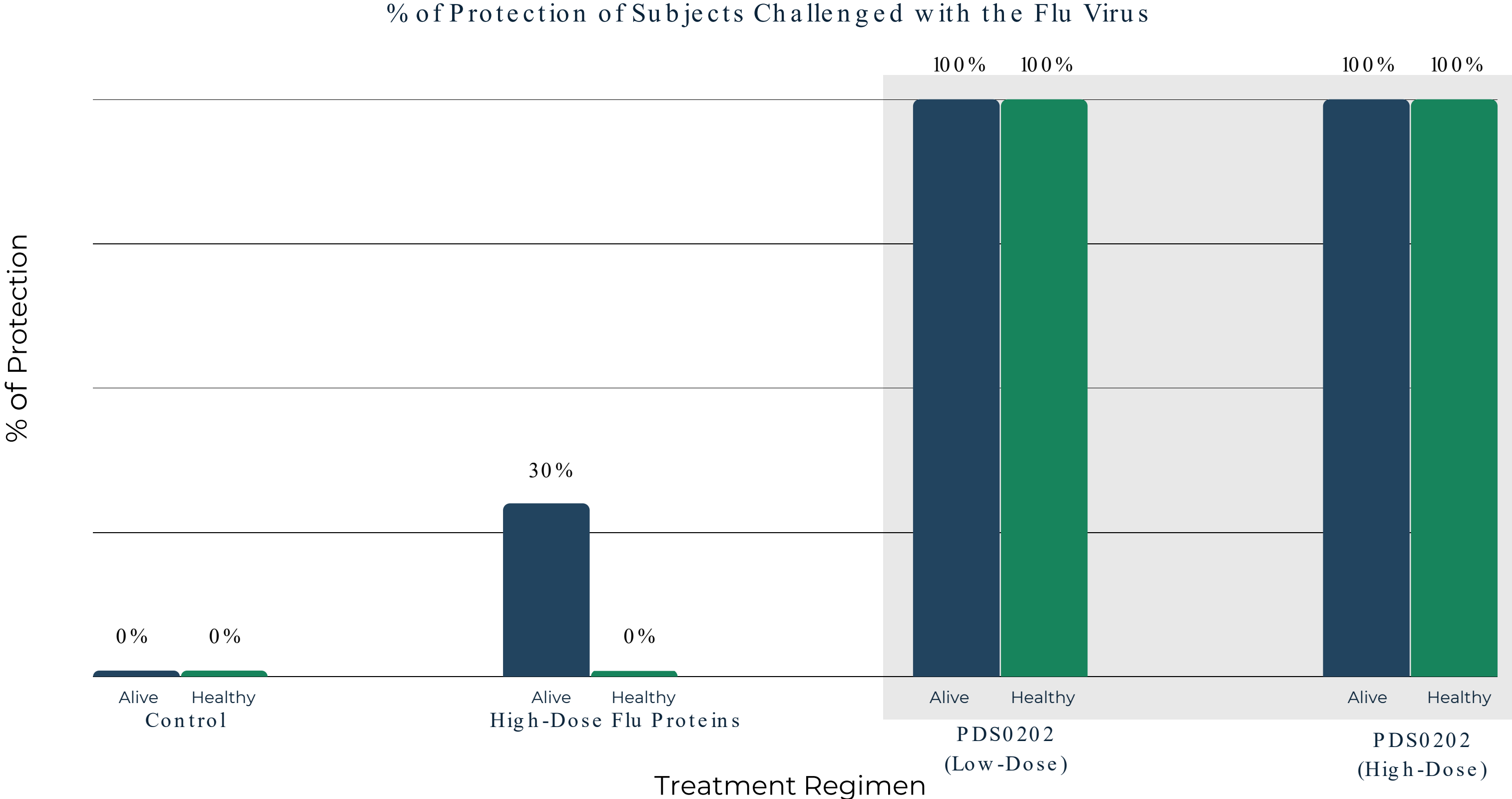
# Infectiune Pipeline Highlights

## Universal Influenza Vaccines

- License agreement with University of Georgia for proprietary influenza antigens
- Top-line preclinical data announced; effective delivery of flu proteins activate the critical immune signals necessary to generate neutralizing antibody responses to all flu strains tested in animals
- Preclinical data presented at the 41<sup>st</sup> Annual meeting of the American Society Virology Meeting

# PDS0202: Universal Prevention of Influenza

Appeared to Provide Protection in Preclinical Study in Keeping Animals Alive and Healthy Against Challenge with Flu Virus



# PDS Biotech Management

Historical success in the development and commercialization of leading pharmaceutical products

Frank Bedu-Addo, PHD Chief Executive Officer	<ul style="list-style-type: none"><li>• Senior executive experience with management of strategy and execution at both large pharma and biotechs</li><li>• Notable drug development: Abelcet® (Liposome Company/ Elan) PEG-Intron® (Schering-Plough/ Merck)</li></ul>	<div>CardinalHealth</div> <div>Schering-Plough</div> <div>KBI BIOPHARMA</div> <div>élan</div>
Matthew Hill Chief Financial Officer	<ul style="list-style-type: none"><li>• 20 years of financial and operational leadership roles for life sciences companies</li><li>• Former Chief Financial Officer of several publicly traded companies</li></ul>	<div>Velcera</div> <div>STRATA SKIN SCIENCES</div> <div>EPMedSystems The Leading Edge in Cardiac Rhythm Management</div>
Lauren V. Wood, MD Chief Medical Officer	<ul style="list-style-type: none"><li>• 30 years of translational clinical research experience</li><li>• Former Director of Clinical Research at National Cancer</li><li>• Institute Center for Cancer Research (Cancer Vaccine Branch)</li></ul>	<div>NIH&gt;&gt; NATIONAL CANCER INSTITUTE</div> <div>NIH&gt;&gt; National Institute of Allergy and Infectious Diseases</div>
Gregory Conn, PHD Chief Scientific Officer	<ul style="list-style-type: none"><li>• Co-founder</li><li>• 35 years of drug development experience</li><li>• In-depth experience with biotech drug discovery, product development and manufacturing</li></ul>	<div>MERCK</div> <div>FUJIFILM Diosynth biotechnologies</div> <div>REGENERON</div>

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