

# INVESTOR PRESENTATION

NASDAQ: PDSB | June 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 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 molecularly 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 The initial concept for Versamune® and Infectimune™ was developed by Prof. Leaf Huang PH.D., a world-renowned pioneer in nanoparticle drug delivery
- 4 Lead candidate – PDS0101 granted Fast Track designation from the FDA
- 5 Clinical partnerships with Merck, MD Anderson Cancer Center, National Cancer Institute and Mayo Clinic
- 6 Versamune® has demonstrated potential to overcome immune suppression in refractory cancer with prolonged patient survival
- 7 Debt free with approximately **\$58.9M** in cash (unaudited) as of March 31, 2022 – projected to fund operations into 2024

A 3D molecular model of a protein complex, likely a receptor or enzyme, rendered in a light blue/teal color. The structure is highly detailed, showing various loops, helices, and beta-sheets. It is set against a dark teal background with several smaller, similar protein structures scattered around, suggesting a dynamic or multi-state system.

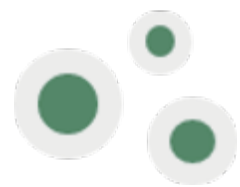
# Versamune® Oncology Platform



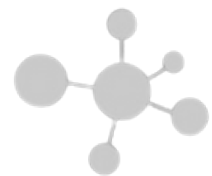
# The PDS Biotech Differentiation

Versamune® is designed to promote CD8+ killer T-cell responses *in vivo*

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



Generate the right type and quantity of effective CD8+ killer T-cells



Generate memory T-cells, to enhance durability of response



Generate potency without serious systemic side effects

# 12-30%

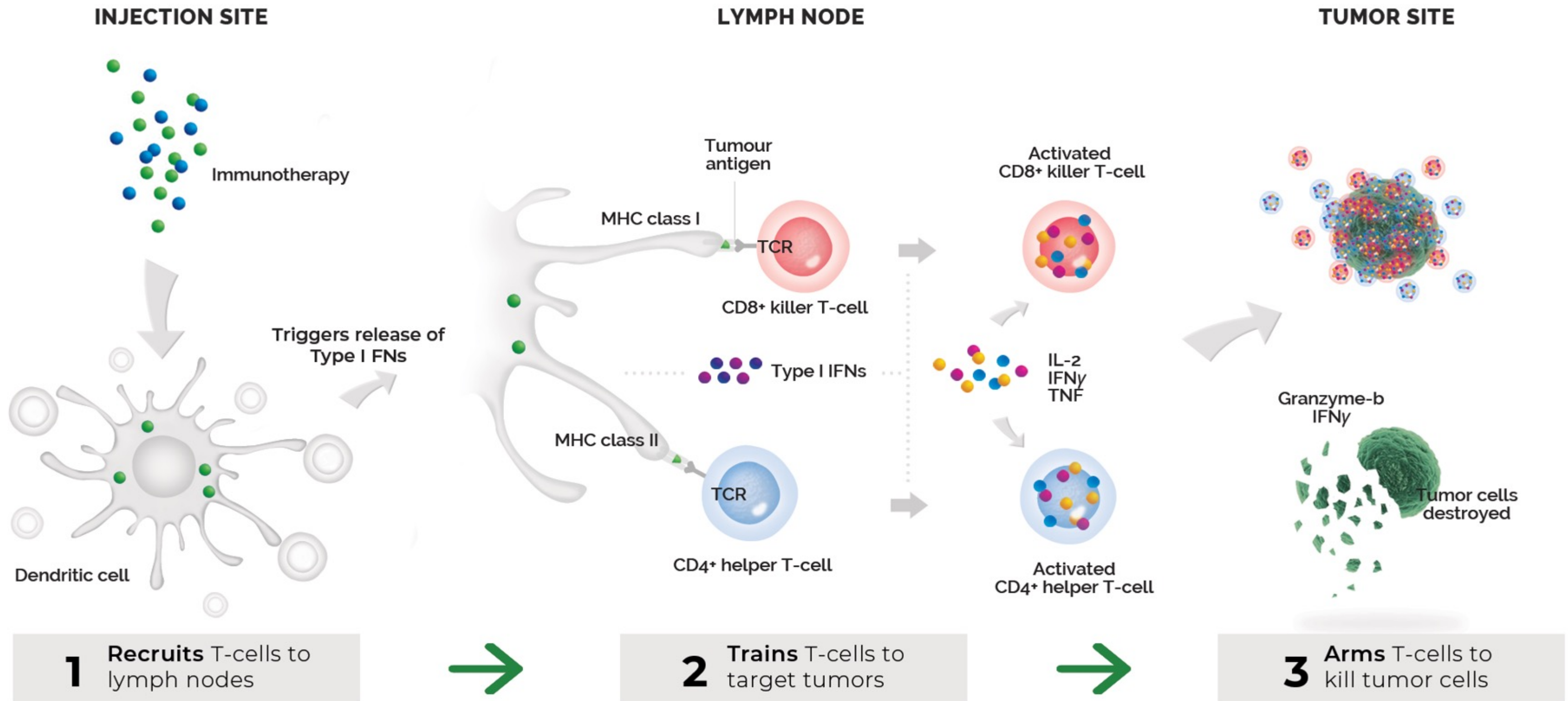
Success in checkpoint inhibitor treatments due to low CD8+ T-cell response <sup>2</sup>

<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> <i>Fast Track Designation</i>	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						

# PDS0101: 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>

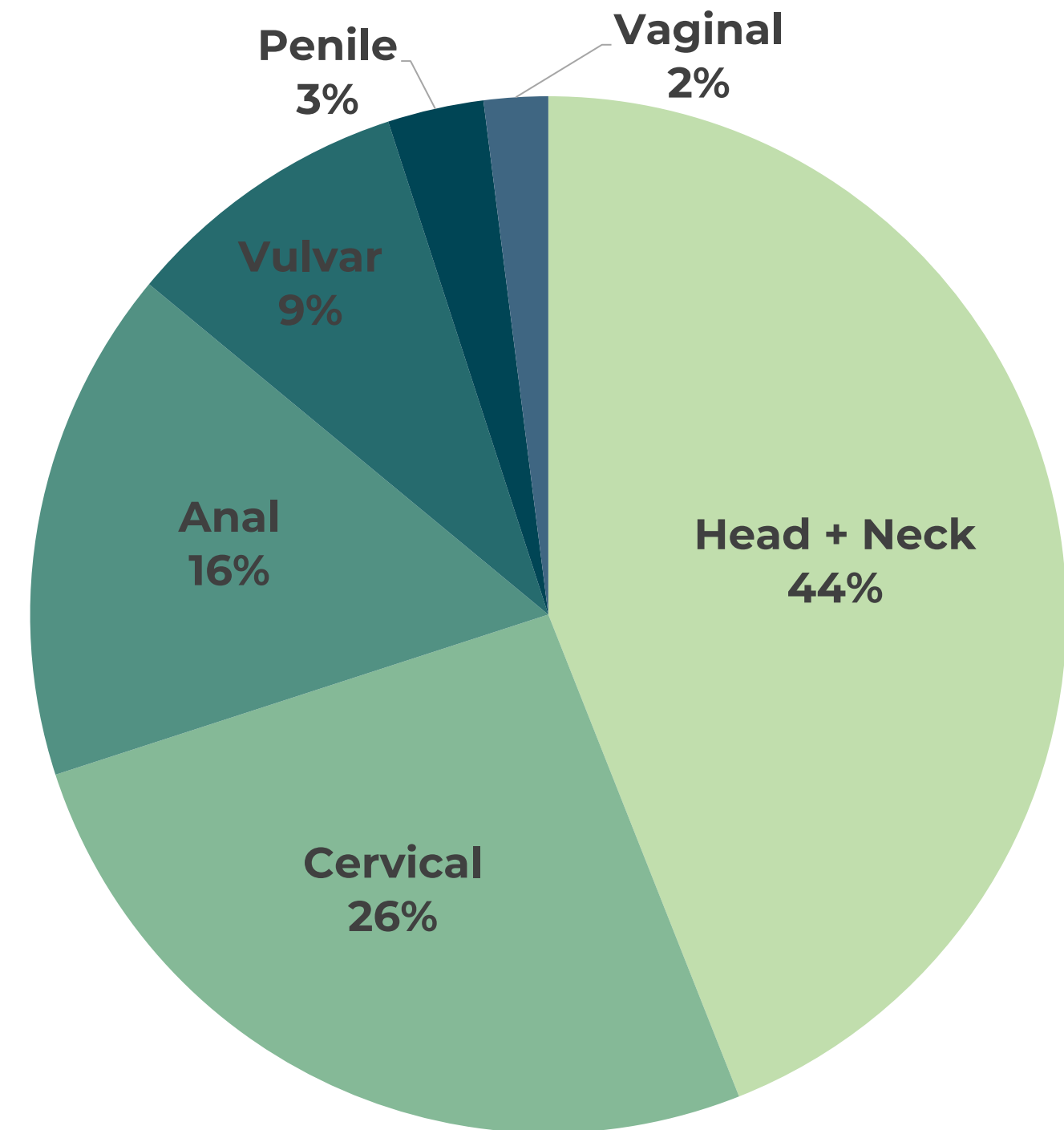
Existing immunotherapies cost **\$150,000+** annually per patient<sup>1</sup>

<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®

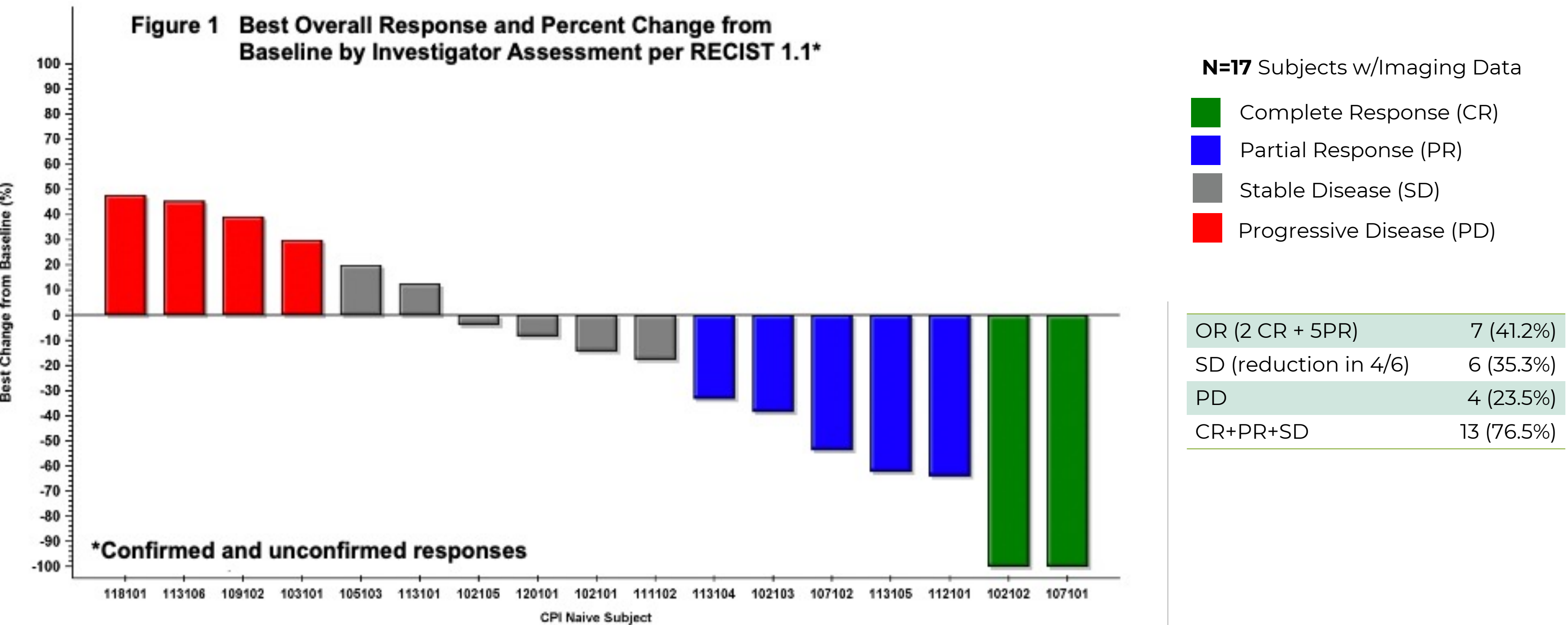
Company-sponsored trial for the treatment of HPV16-positive metastatic/recurrent head and neck cancer (VERSATILE-002)

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 Efficacy and safety data presented on first 19 patients at ASCO Q2 2022 Safety data presented at Head and Neck Symposium Q1 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 treatment of HPV16-positive metastatic/recurrent head and neck cancer (VERSATILE-002)





# Phase 2: PDS0101 + KEYTRUDA®


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

Treatment Emergent Adverse Events (TEAEs) Safety Population (N=19)	CPI Naïve Subjects (N=19) N (%) : Events
<b>Subjects with any TEAEs</b>	18 (94.7%) : 371
Grade 1	3 (15.8%) : 303
Grade 2	8 (42.1%) : 51
Grade 3	5 (26.3%) : 11
Grade 4	0 (0.0%) : 4
Grade 5	2 (10.5%) : 2
<b>≥ Grade 3 TEAEs Attributed to Study Treatment by Investigator</b>	0
No subjects met this criteria	
<b>Grade 3 &amp; 4 Treatment Related TEAEs</b>	
No subjects met this criteria	0

At 9 Months of Follow Up (Median PFS not yet Achieved)	
<b>% of Patients Alive at Median 9 Months</b>	89%
<b>Progression Free Survival Rate (PSF)</b>	55.2%
<b>Overall Survival Rate (OS)</b>	87.2%

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

NCI-led trial for the 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	Updated efficacy and safety data released at ASCO Q2 2022 Preliminary efficacy and safety data released at ASCO Q2 2021
Trial Partner	

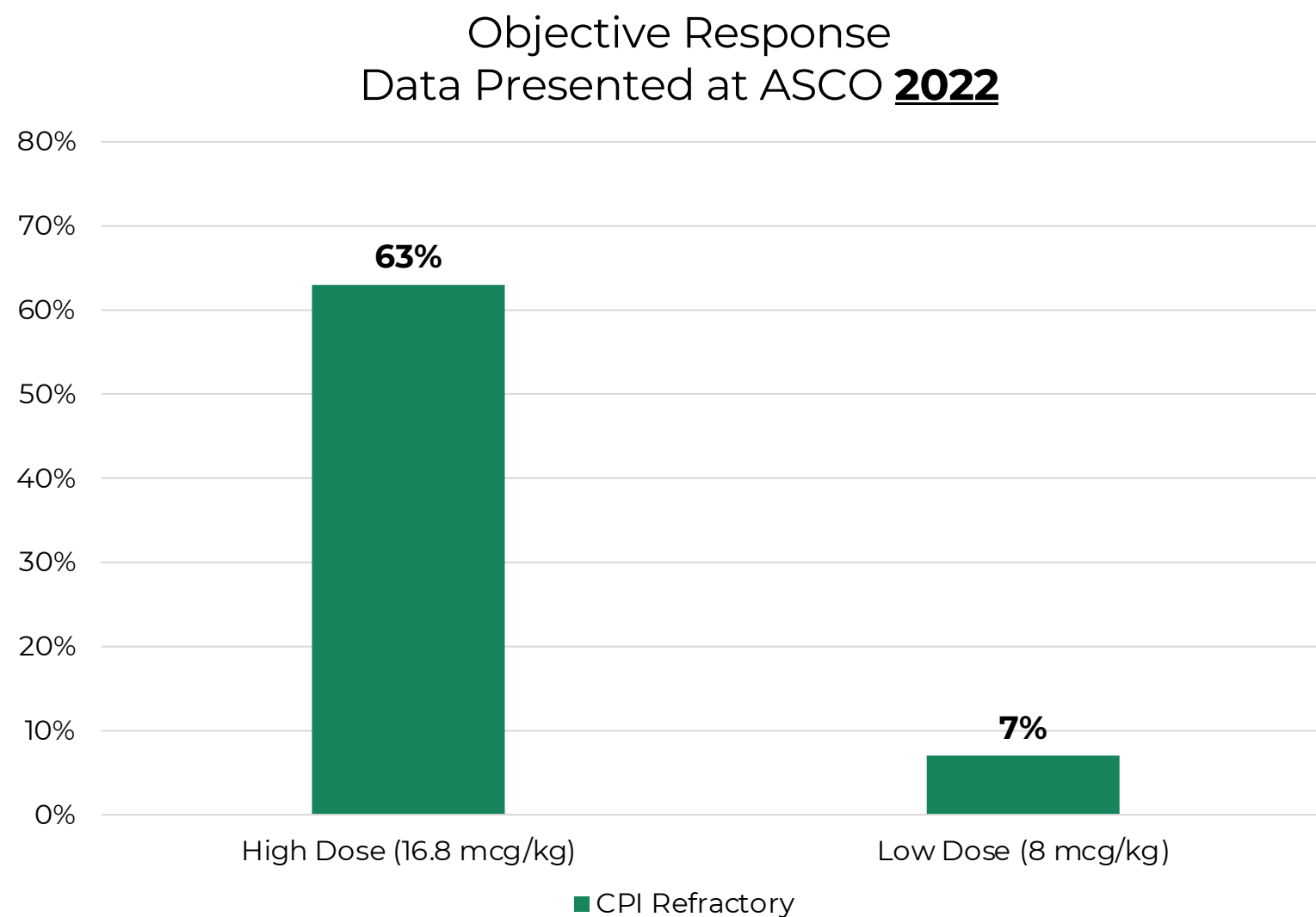
Confirmation that PDS0101 enhances the therapeutic benefit of checkpoint inhibitors could expand evaluation of Versamune®-based therapies in multiple cancer indications



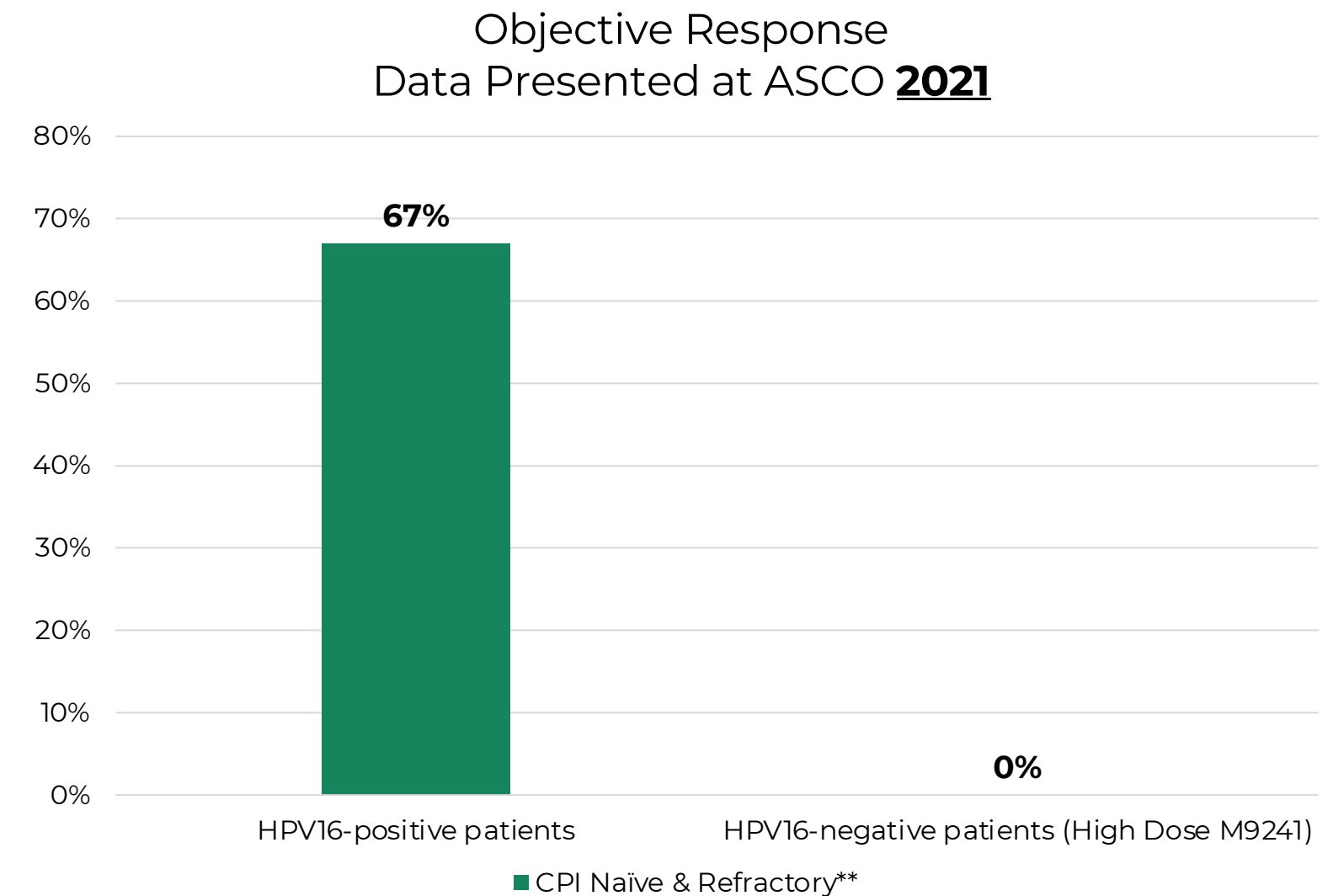
# PDS0101 Designed to Promote Efficacy in HPV16 Cancers

Studies show key contributions of PDS0101, M9241 & Bintrafusp alfa\* to clinical response to date

## High dose M9241 provides superior ORR vs. low dose $P < 0.01$



## Tumor reduction only seen in HPV16-positive patients $P < 0.001$



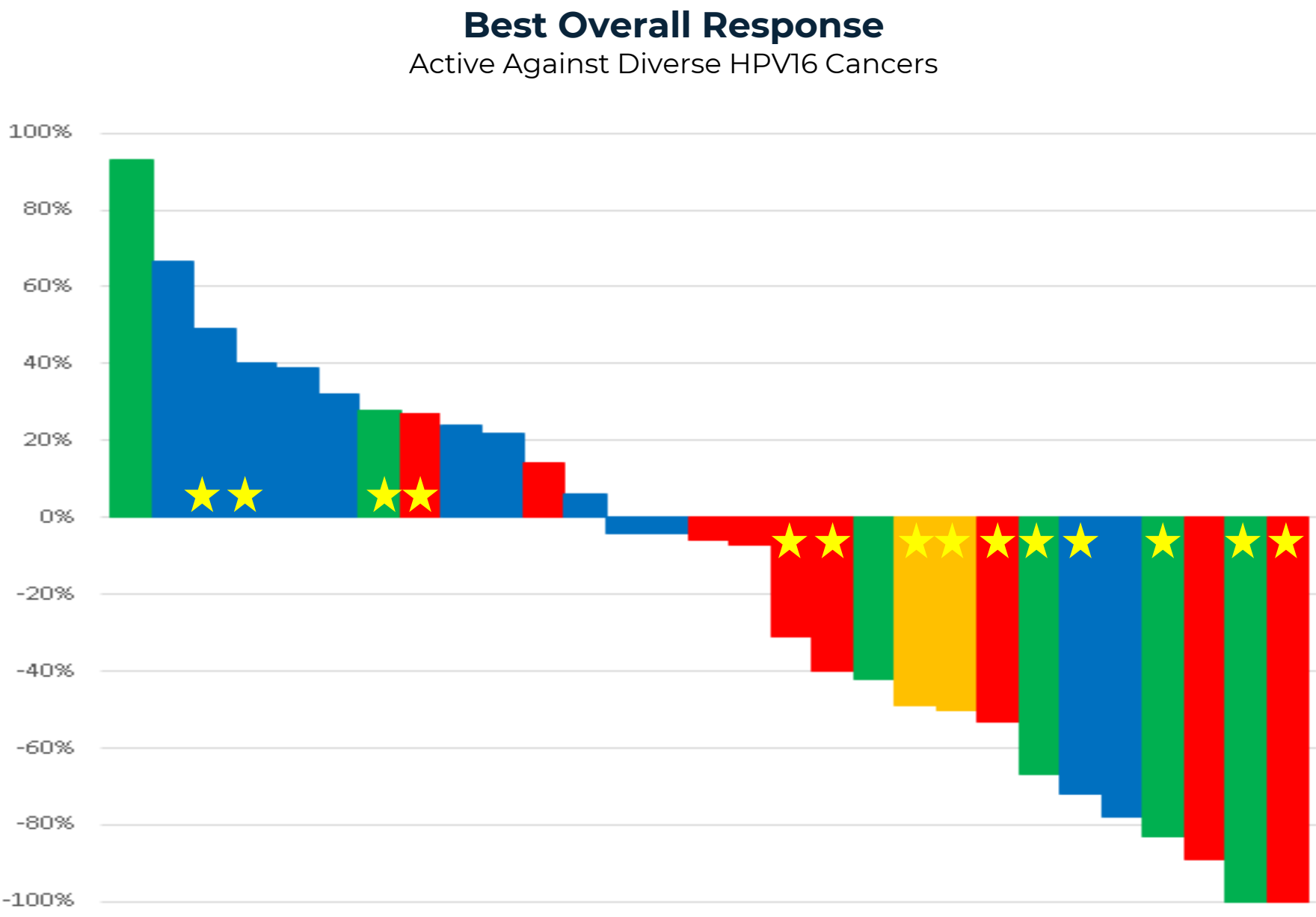
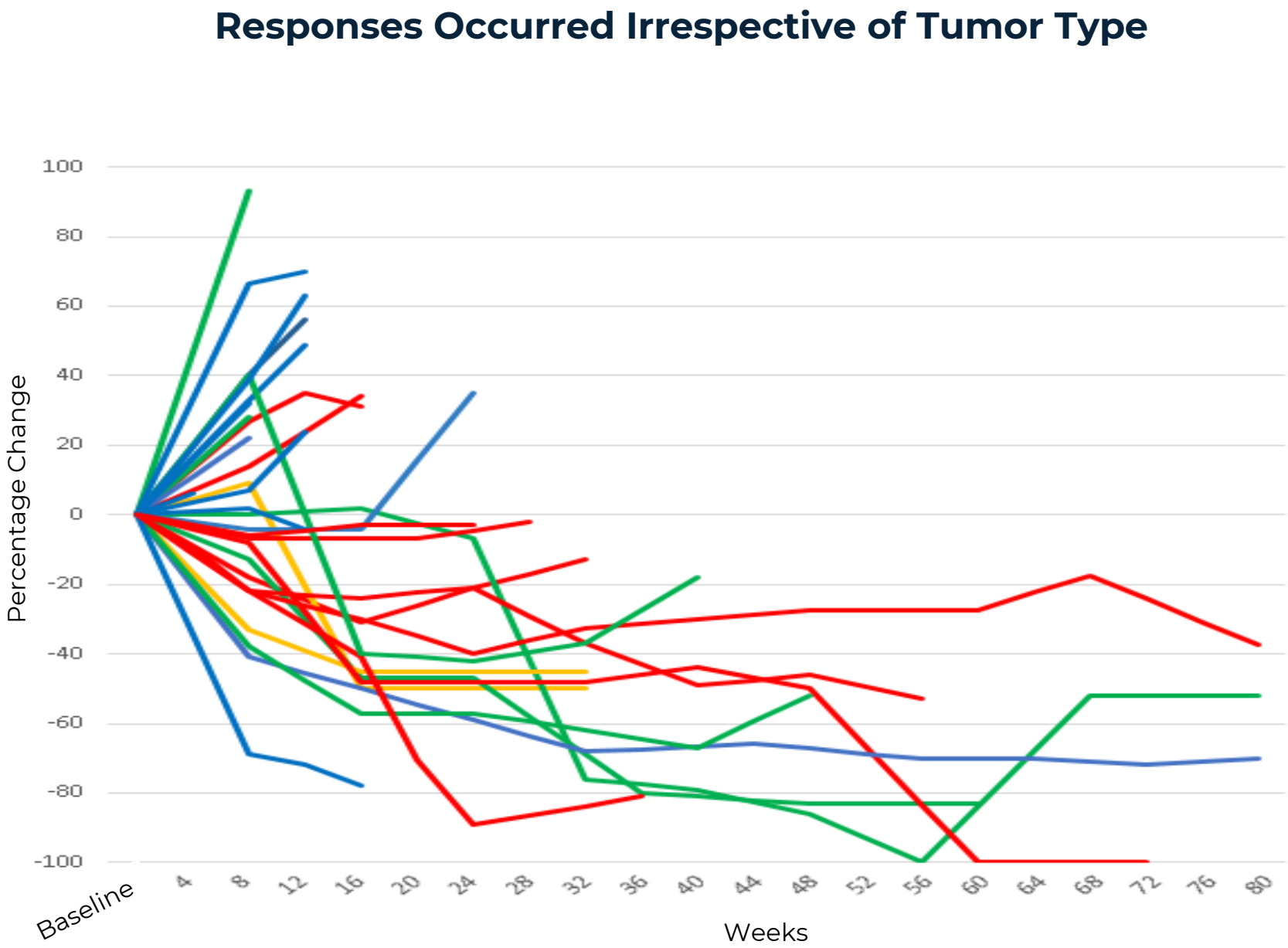
\*Bintrafusp alfa monotherapy showed 30% ORR in CPI naïve and 10% ORR in CPI refractory HPV-positive cancers (Strauss et al, 2020, Dec 8(2))

\*\*All HPV16 negative and 80% of HPV16 positive patients had high dose M9241

Reference: Strauss J. et al. Phase II evaluation of the triple combination of PDS0101, M9241, and Bintrafusp alfa in patients with HPV 16 positive malignancies. Presented at: American Society of Clinical Oncology 2022 Annual Meeting; June 3-7, 2022; Virtual. Abstract: 2518.

# PDS0101: Triple Combination Active Against HPV16 Cancer

Responses to date across tumor types and higher NHS-IL12 dose show the potential to result in greater clinical efficacy



\*HNSCC – head and neck squamous cell carcinomas

- Cervical
- Anal
- Vaginal/Vulvar
- HNSCC\*
- ★ Higher M9241 Dose

# Phase 2: Triple Combination May Extend Patient Survival

High dose M9241 may provide improved synergy with PDS0101

	CPI Naïve Subjects	CPI Refractory Subjects
Objective Response Rate (ORR) > 30% tumor shrinkage	High Dose M9241 - 83% Low Dose M9241 (2/2) - 100% Overall - 88%	High Dose M9241 - 63% Low Dose M9241 - 7% Overall - 27%
Tumor shrinkage	88%	High Dose M9241 - 63% Low Dose M9241 - 36% Overall - 45%
Patient survival at median 12 months	NA	High Dose - 77% Low Dose - 77%
Patient survival at median 17 months	75%	NA



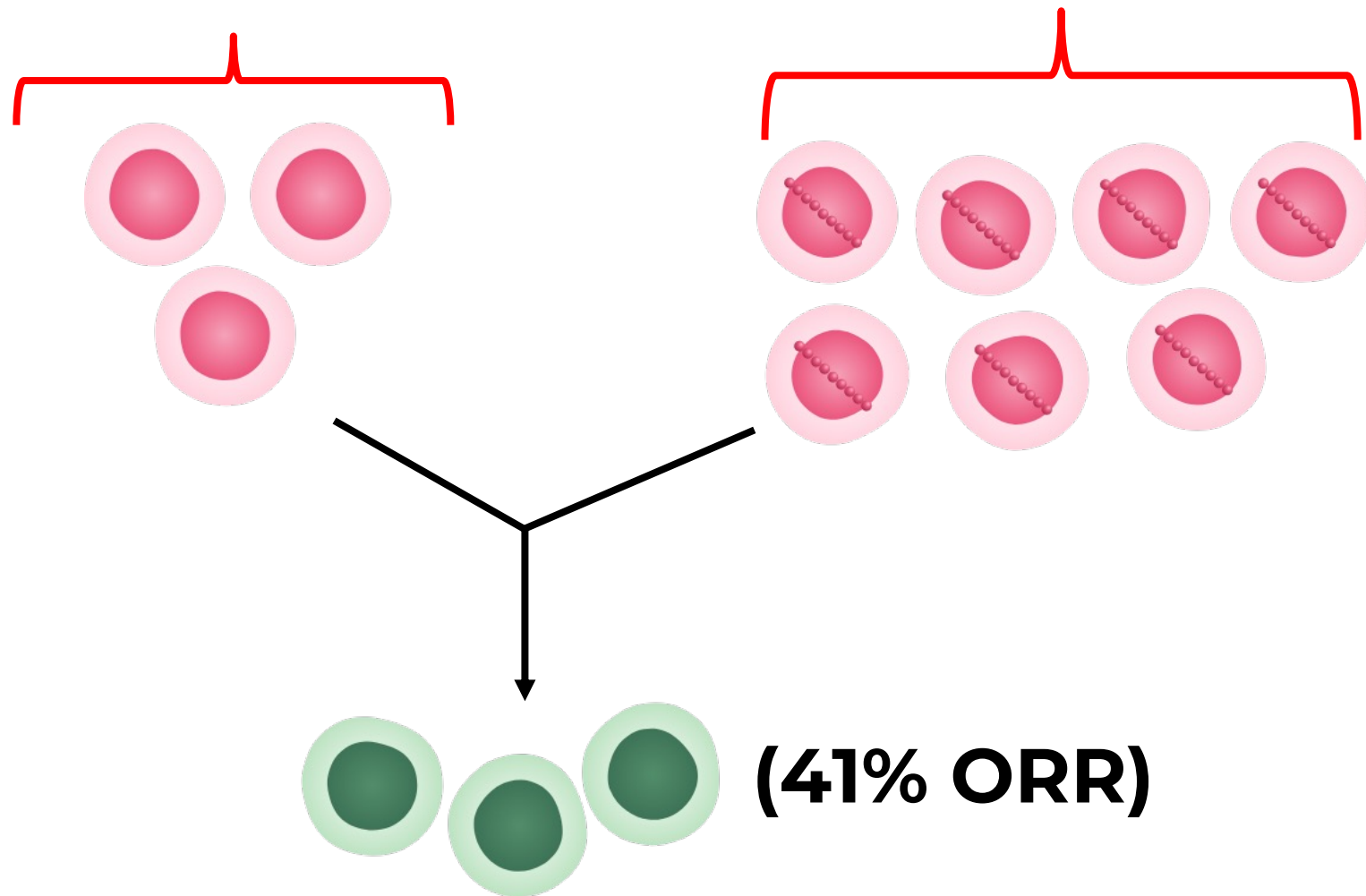
# Versamune® + M9241 May Overcome CPI-Independent Tumor T Cell Evading Mechanisms

Potential to advance cancer immunotherapy

PDS0101 + KEYTRUDA®

Tumors blocking T cell attack using immune checkpoints

Tumors blocking T cell attack using alternative immune suppressive mechanisms

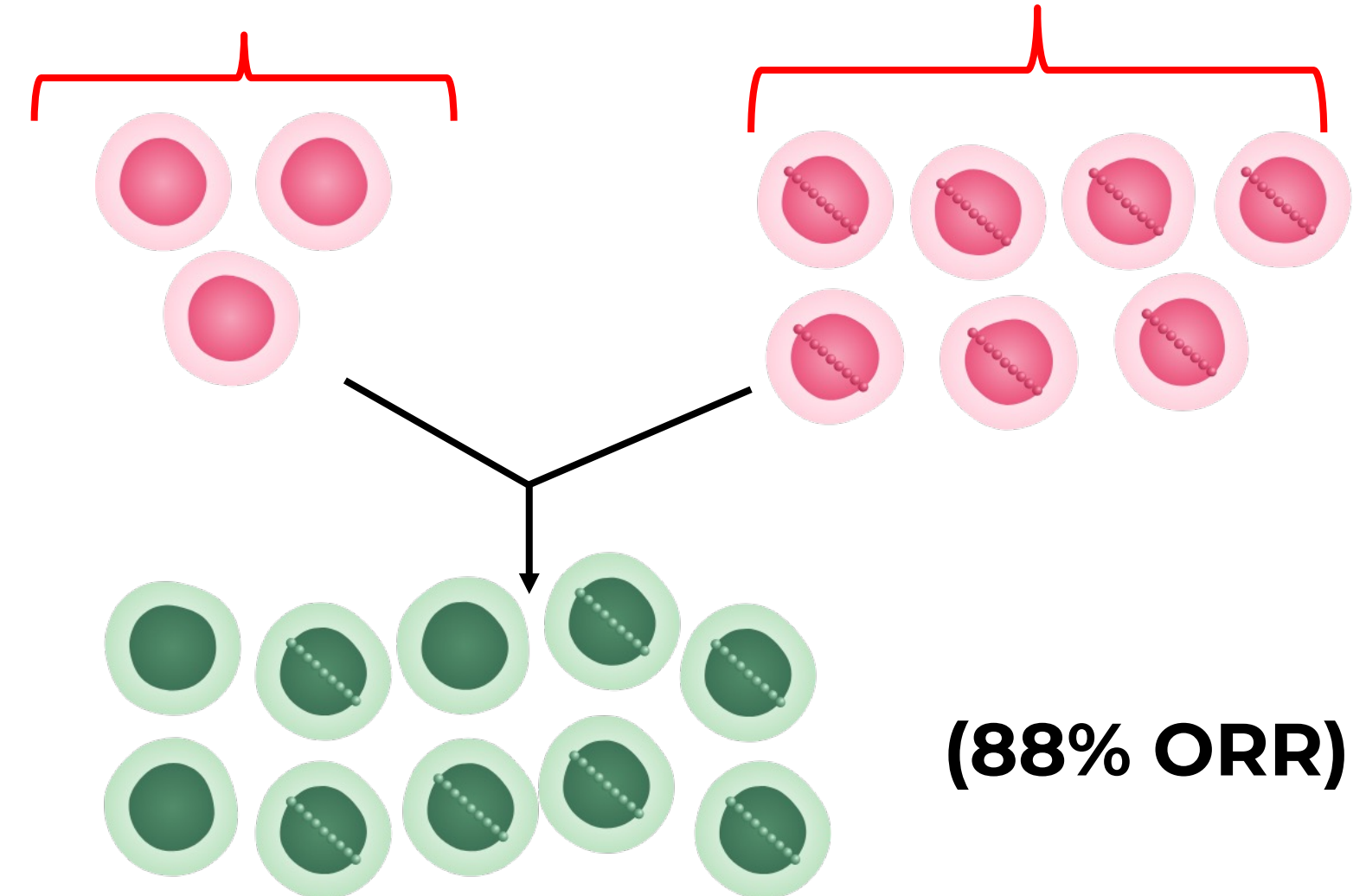


KEYTRUDA® unlocks checkpoint-dependent immune suppressive mechanism – PDS0101 primes T cells to attack and kill the cancers

PDS0101 + M9241 + Bintrafusp alfa

Tumors blocking T cell attack using immune checkpoints

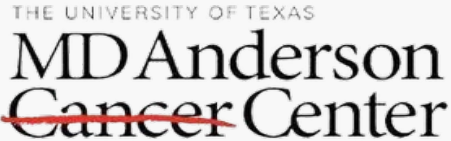
Tumors blocking T cell attack using alternative immune suppressive mechanisms



Versamune® + M9241 may unlock checkpoint-independent immune suppressive mechanisms\* and M9241 may induce tumor inflammation – PDS0101 primes T cells to attack and kill the cancers exposed by both CPI and Versamune® + M9241

# 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	Preliminary data anticipated late Q3 2022
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 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	Approved by the IRB and anticipate enrollment will begin in Q2
Trial Partner	 MAYO CLINIC

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



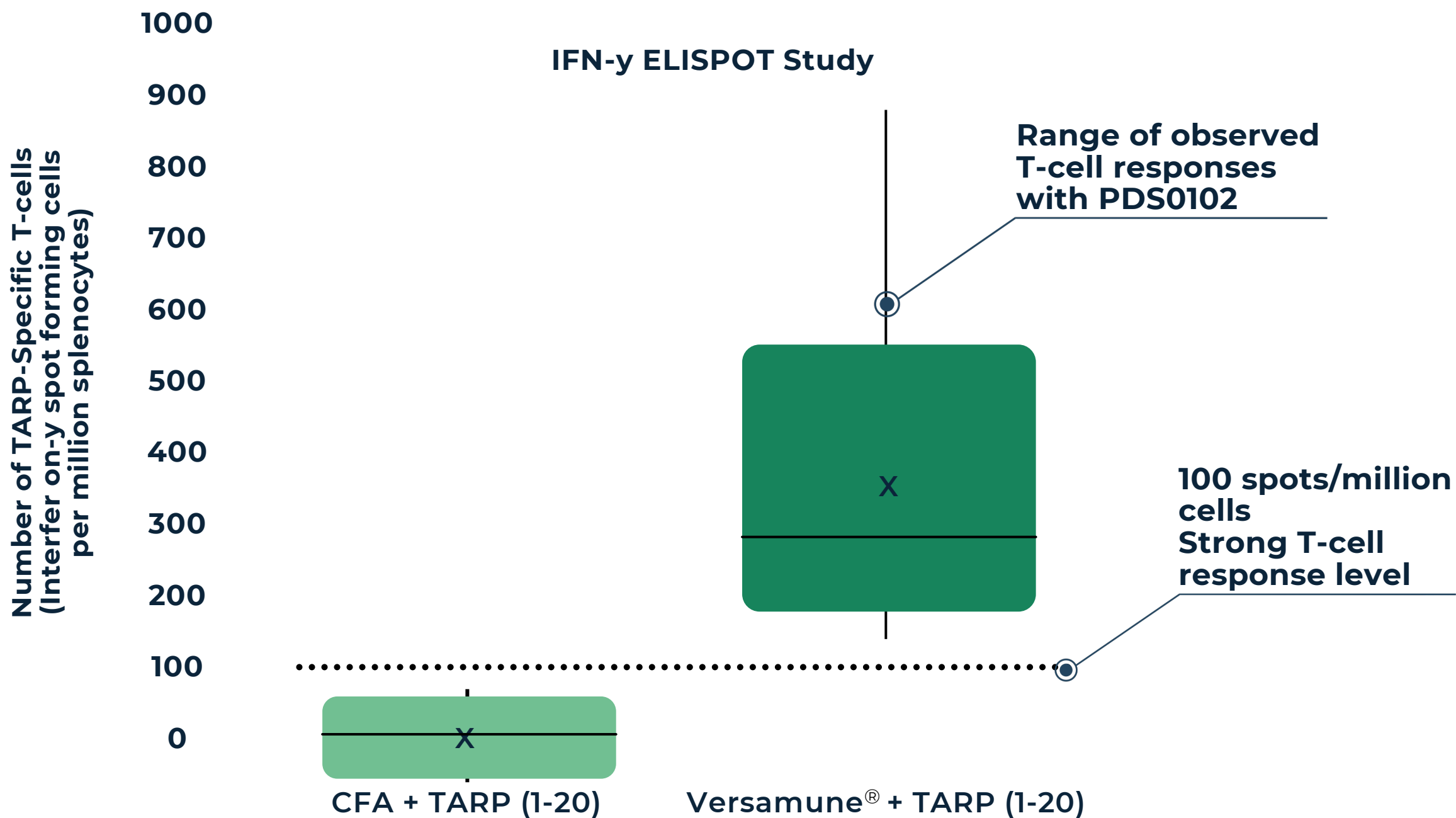
# PDS0102: TARP Antigen

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

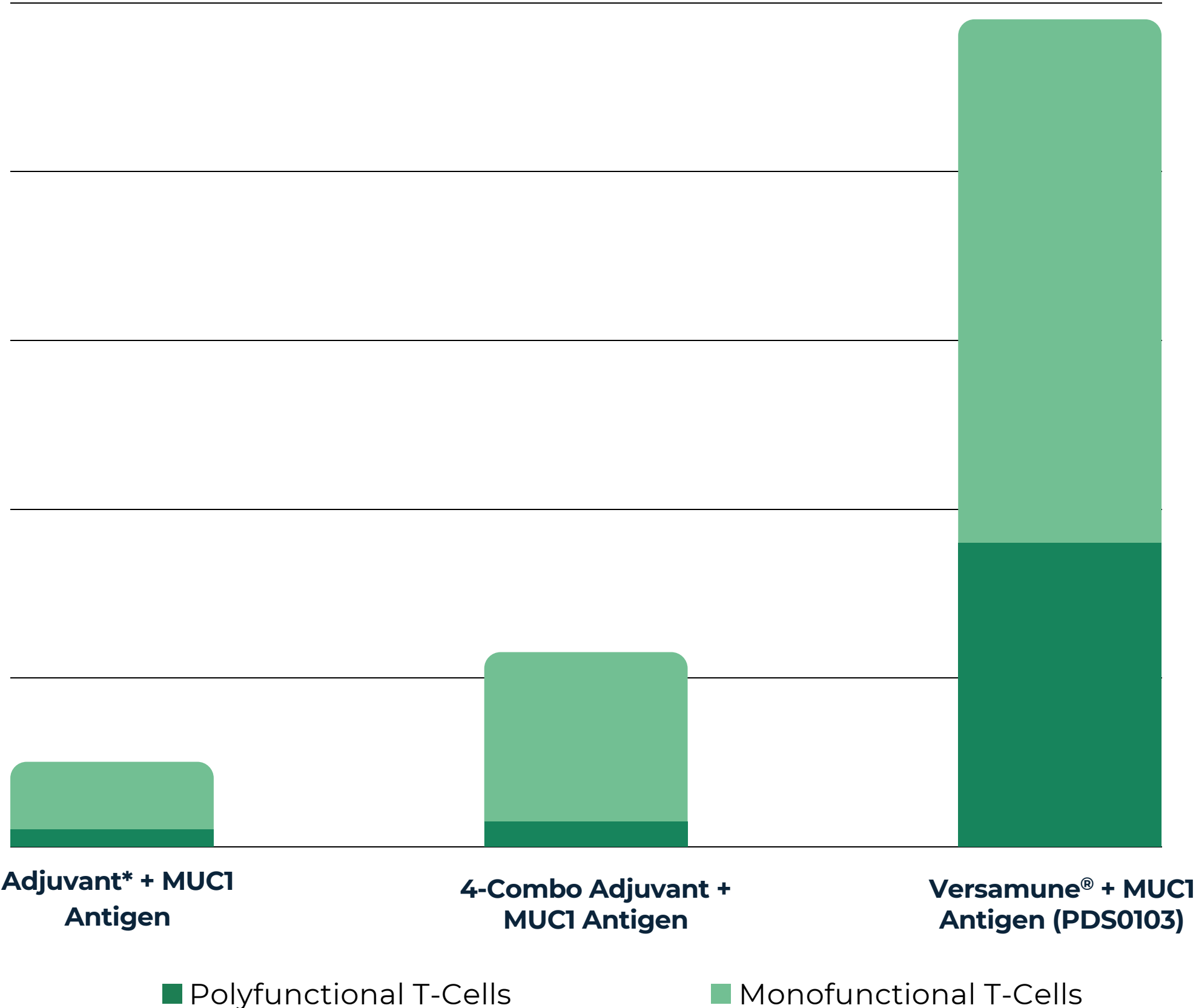
# PDS0103: MUC1 Antigen

Greater quantity and quality of Versamune®-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-γ Spot Forming Cells/1X10<sup>6</sup>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.

# Projected Milestones Through 1Q 2023\*

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




A 3D molecular model of a protein complex, likely a viral capsid or a large enzyme, rendered in a light blue/teal color. The structure is highly detailed, showing the surface topology and internal components. It is surrounded by several smaller, similar-looking molecular structures, suggesting a dynamic or multi-subunit assembly. The background is a dark teal gradient.

# Infectimmune™

## Infectious Disease Platform

# PDS Biotech's Infectimune™ 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

# Infectimmune™

## Pipeline Highlights

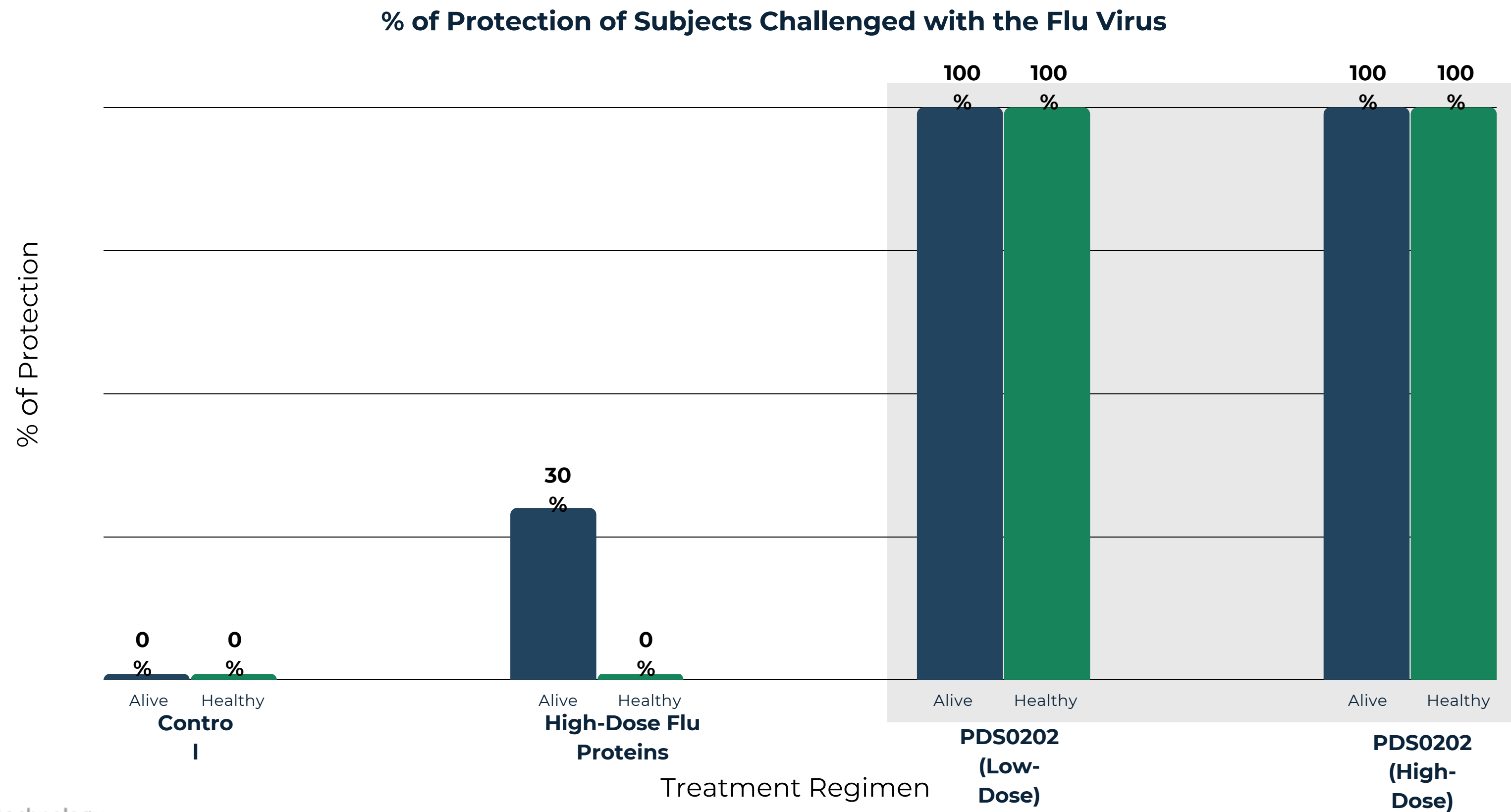
### Universal Influenza Vaccines

- 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
- Preclinical data submitted for peer-reviewed publication



# PDS0202: Universal Prevention of Influenza

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



# PDS Biotech Management

Historical success in the development and commercialization of leading pharmaceutical products

<b>Frank Bedu-Addo, PHD</b> 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></div>
<b>Matthew Hill</b> 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></div>
<b>Lauren V. Wood, MD</b> 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 Institute Center for Cancer Research (Cancer Vaccine Branch)</li></ul>	<div></div>
<b>Gregory Conn, PHD</b> 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></div>



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