



Training the Immune System to Fight Cancer

December 6, 2021

NASDAQ: SNSE

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Exhibit 99.1



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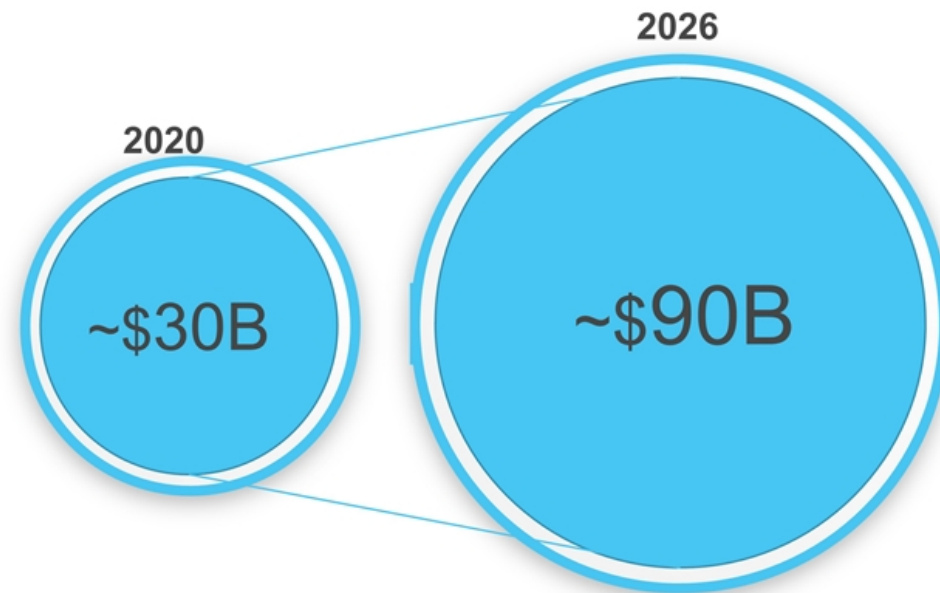
The Modern-Day Challenge in Immuno-Oncology



Majority of patients don't respond to PD-1/PD-L1 monotherapy¹



Global PD-1/PD-L1 Market²



1. Gerber et al., Biochemical Pharmacology 2016

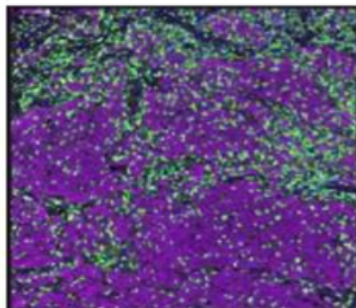
2. Market estimates from PD-1 and PDL-1 Inhibitors Market Size in 2021 – MarketWatch, 360 Research

Two Major Types of Non-Responders to PD-1 Blockade

Responders

T-cells Inside Tumor

Hot (inflamed) tumor

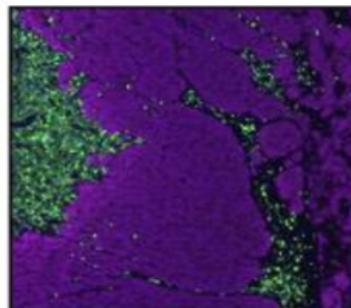
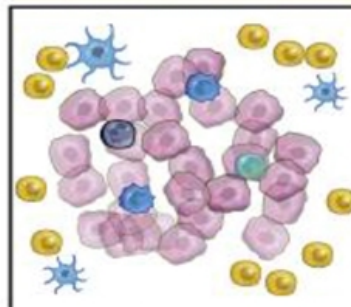


Green = T-cells
Purple = tumor

Non-Responders

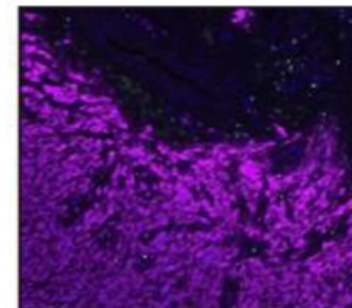
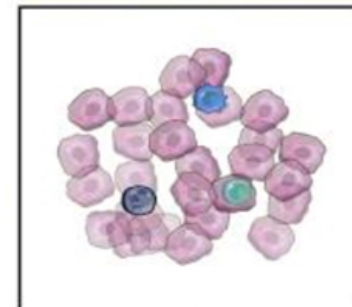
T-cells Inactive or
Outside Tumor

Cold (excluded) tumor



T-cells Absent

Cold (ignored) tumor

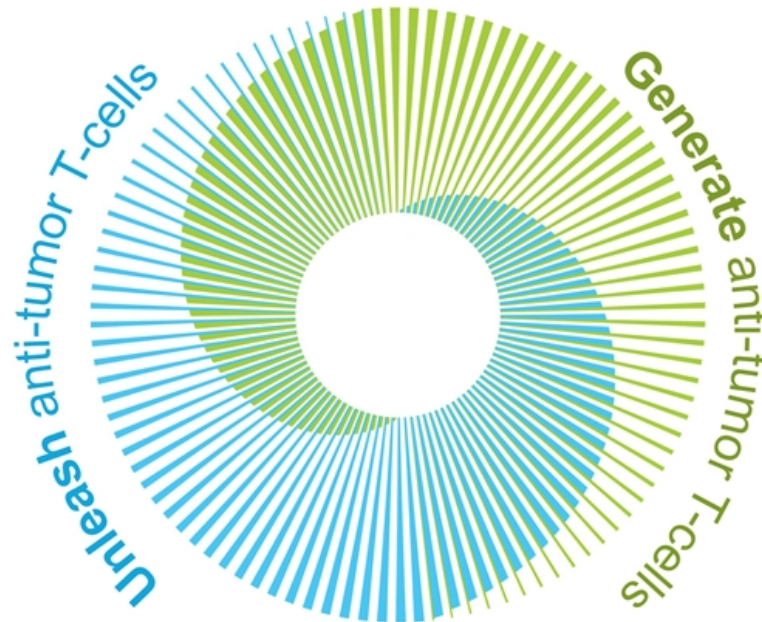


Two Platforms to Unleash Anti-Cancer T-cell Activity



TMAb™ (Tumor Microenvironment Activated Biologics) Platform

- Next-generation tumor activated mAbs
- Binding only in the low-pH tumor microenvironment
- Target checkpoints and/or other immune pathways
- Enable improved PK/PD and toxicity profiles



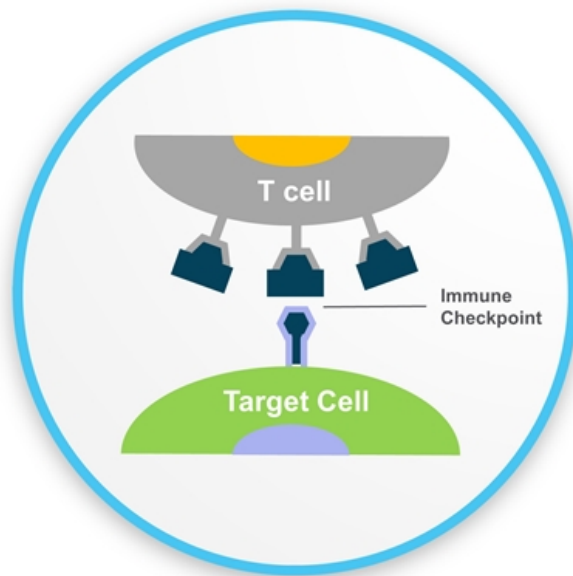
ImmunoPhage™ Platform

- Powerfully self-adjuvanted nanoparticle vaccine can drive B cell and T cell responses
- Multi-antigen vaccine enables personalized approach from "off-the-shelf" components
- Targets APCs
- Enhanced through addition of immunostimulatory nanobodies & cytokines

T-Cells Are Central to Our Approach and the Key to Unlocking Groundbreaking Clinical Activity

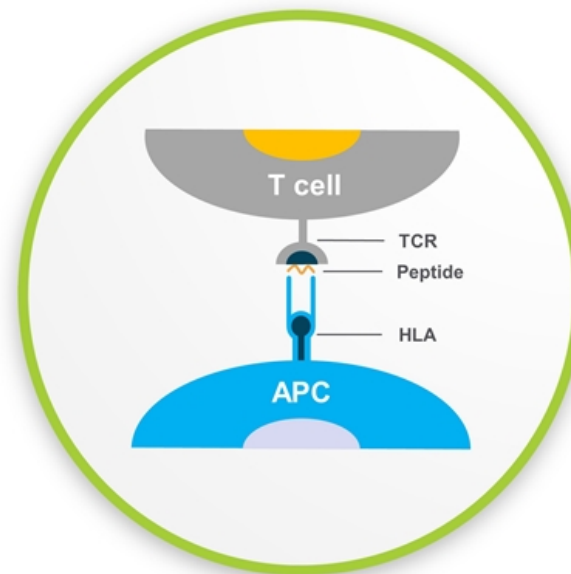


TMAb



Focus on novel immune checkpoints to
UNLEASH anti-tumor T-cells

ImmunoPhage™



Focus on multi-antigen approach for HLA-mediated immunotherapy to **GENERATE** anti-tumor T-cells

Positioned to Drive Value with Next Generation Product & Platform Development



Two Platforms Provide Broad Pipeline Opportunities

TMAb*
Platform

ImmunoPhage™
Platform

In-house GMP manufacturing capabilities



Strong Cash Position
Ended 3Q 2021: \$156.7M**












Business Development

*Tumor Microenvironment Activated biologics

**Consists of cash, cash equivalents and marketable securities

Pipeline Utilizing Pioneering ImmunoPhage Platform, TMAb Platform



	Program (Target)	Indication	Discovery	IND-enabling	Phase 1 / 2 Clinical
 TMAb	SNS-101 (VISTA)	Solid Tumors			
	SNS-VSIG4	Solid Tumors			
 ImmunoPhage	SNS-401-NG (Multiple Tumor Antigens)	Merkel Cell Carcinoma			
		Head and Neck Cancer			
		Lung Cancer			
		Melanoma			
		Breast Cancer			

TMAb (Tumor Microenvironment Activated biologics) Platform

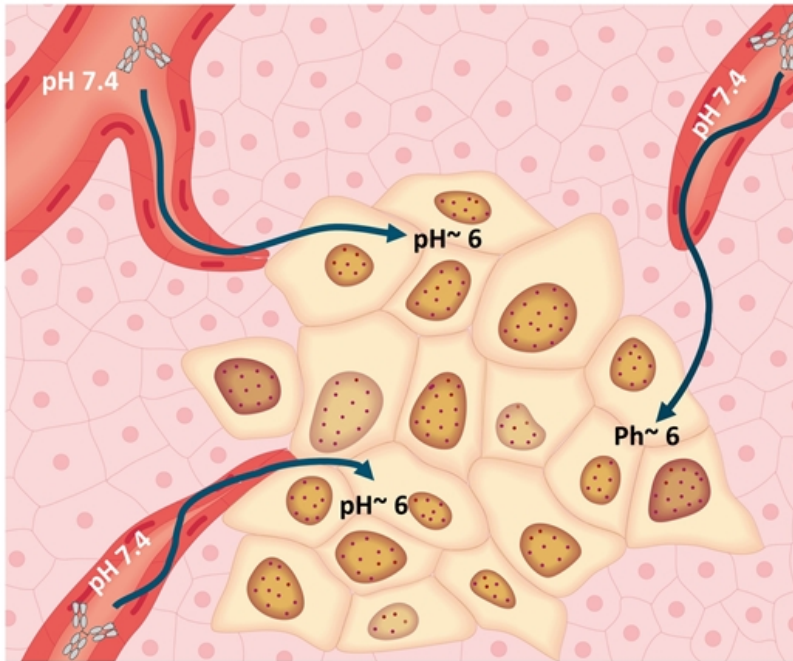


pH-sensitive Antibodies Only Bind Their Targets in the Low-pH Tumor Microenvironment



TMAb PLATFORM

The tumor microenvironment of pH ~6 is lower than physiological pH of 7.4



Sensei's technology identifies pH-sensitive antibodies that bind only at the tumor

- Antibodies that bind at physiological pH may encounter a "sink"
 - Prevents effective binding at the tumor and may lead to toxicity
- TMAb antibodies bypass tissue compartments other than the low-pH tumor microenvironment
- Potential for improved safety and clinical activity profile

The Promise and Challenge of Immunotherapy



Targeting Immunosuppressive myeloid cells is a promising strategy to overcome resistance to checkpoint Inhibitor therapy

THE PROMISE

- Using the body's own immune system to attack cancer
- Capitalizing on immunological specificity and long-term memory
- Achieving durable cures with minimal toxicity

THE CHALLENGE

- 70-80% of patients do not achieve increased survival with CPI monotherapy¹
- The immunosuppressive tumor microenvironment (TME) influences response to immune checkpoint blockade
- Innate immune cells such as myeloid cells are a key driver of immunosuppressive TME

VISTA: An Emerging Checkpoint Target on Myeloid Cells



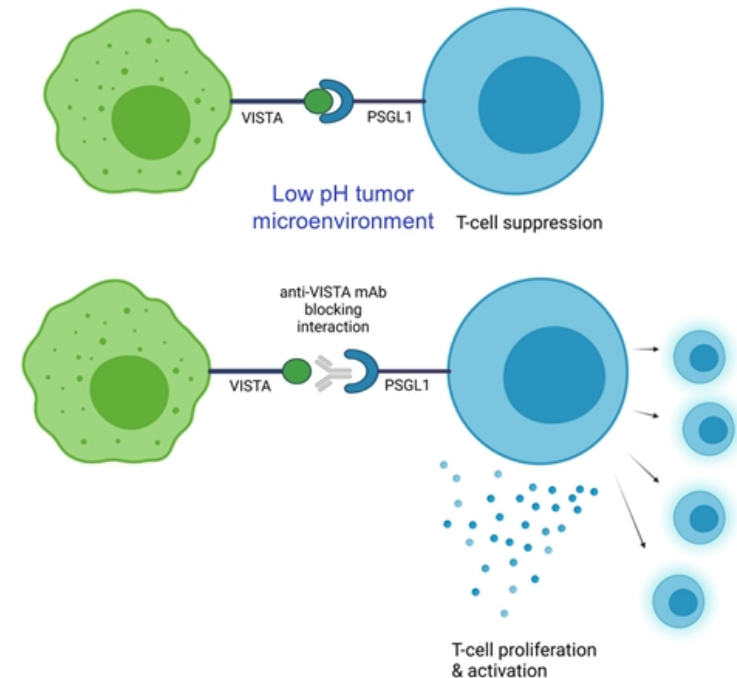
Target Overview:

- Large market opportunity
- B7 family ligand
- Extensive expression on myeloid cells¹
- Inhibition of VISTA may lead to activation of myeloid cells
- Excellent therapeutic combinability with CTLA-4 or PD-1/PD-L1 ICIs, especially in cold tumors²
- VISTA expression correlates with poor survival rates across multiple cancers
- Novel development program with no approved therapies

Sensei's Competitive Advantage:

- Extensive understanding of VISTA biology and differentiated candidate antibody

VISTA is a Negative Regulator of T cell Function



¹ Lines et al. Cancer research vol. 74,7 (2014)

² Gao et al. Nature medicine vol. 23,5 (2017)

Increased Understanding of VISTA as a Promising Target to Address the Needs of Patients with Cancer



nature
medicine

VISTA is an inhibitory immune checkpoint that is increased after ipilimumab therapy in patients with prostate cancer

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To date, anti-CTLA-4 (ipilimumab) or anti-PD-1 (nivolumab) monotherapy has not been demonstrated to be of substantial clinical benefit in patients with prostate cancer. To identify additional immune-inhibitory pathways in the prostate-tumor microenvironment, we evaluated untreated and ipilimumab-treated tumors from patients in a preclinical clinical trial. Levels of the PD-L1 and VISTA inhibitory molecules increased on independent subsets of macrophages in treated tumors. Our data suggest that VISTA represents another compensatory inhibitory pathway in prostate tumor after ipilimumab therapy.

Immune checkpoint therapies, including anti-CTLA-4 and anti-PD-1 therapies, that block T cell inhibitory pathways have led to durable antitumor responses and clinical benefit in a substantial number of patients with cancer^{1,2}. However, prostate cancer has proven to be poorly responsive to immune checkpoint monotherapy^{3–5}. To better understand the immune profile within prostate tumors and potential compensatory immune inhibitory pathways that may arise in the setting of immune checkpoint monotherapy, we conducted a clinical trial (NCT01194717) with ipilimumab plus androgen deprivation therapy (ADT) before surgery in patients with localized prostate cancer (Supplementary Fig. 1a–c and Supplementary Tables 1 and 2).

We compared post-treatment and baseline blood samples (Supplementary Fig. 1a–c) and evaluated the levels of CD4⁺ and CD8⁺ T cells (Supplementary Fig. 2a), as well as those of T cell subsets expressing inducible co-inhibitors (ICOs), OX40, 4-1BB, PD-1, CTLA-4, and FoxP3 (Supplementary Fig. 2a,b). We observed an increase in CD4⁺ and CD8⁺ T cells, including PD-1⁺ and ICO⁺ subsets, after ipilimumab therapy, which is similar to our previous findings with ipilimumab monotherapy in patients with melanoma

BRIEF COMMUNICATIONS

and bladder cancer^{6–8}. We also compared post-treatment tumor tissues from another subset of patients (Supplementary Fig. 1b). Flow cytometric studies revealed a significantly higher frequency of CD4⁺ CD8⁺ and ICOS⁺ T cells in the post-treatment tumors (Fig. 1a). Immunohistochemical (IHC) studies also demonstrated significant increases in tumor-infiltrating immune cells, including CD4⁺ CD8⁺ ICOS⁺ CD45RO⁺ granzyme B (GrB)⁺ and CD8⁺ cells (Supplementary Fig. 3). We found significantly greater immune cell infiltration in prostate tumors after ipilimumab therapy but not after ADT alone, although ADT monotherapy was associated with significantly higher levels of ICOS⁺ and GrB⁺ cells, which may represent an activated T cell subset (Fig. 1b). Taken together, our data suggest that the immunologic changes in post-treatment tumors were mostly due to ipilimumab therapy, as opposed to ADT. However, we cannot discount a possible synergistic effect between ipilimumab and ADT.

We did not observe clinical responses consisting of pathologic complete response, as we did previously for patients with bladder cancer⁹. To identify potential mechanisms that might explain this lack of response, we performed an unbiased gene expression study and found that ipilimumab therapy resulted in significant changes in the expression of a total of 680 genes (false discovery rate (FDR) < 0.2; P < 0.028; log₂ fold change > 0.5) (Supplementary Table 3), most of which are related to immune responses (Supplementary Fig. 4a). We focused our analyses on a subset of genes that represent inhibitory immune checkpoints and identified increased PD-L1 and VISTA expression in post-treatment tumors (Supplementary Fig. 4b). Both PD-L1 and VISTA were previously reported as inhibitory molecules that can suppress murine and human T cell responses^{10,11}. Here we found significantly greater protein expression of PD-L1, PD-L1, and VISTA in prostate tumors after ipilimumab therapy (Fig. 1c and Supplementary Fig. 5a).

We also evaluated metastatic tumors and blood samples from patients with metastatic prostate cancer who took part in a separate clinical trial (NCT01194717) and received treatment with ipilimumab, finding an increase in PD-L1 and VISTA expression in tumor tissues (Supplementary Fig. 5b) as well as on monocytes in blood (Supplementary Fig. 6a), which was similar to data from a mouse model of prostate cancer (Supplementary Fig. 6b). We suggest that PD-L1 and VISTA are likely to be relevant inhibitory immune checkpoints in both localized and metastatic prostate cancer.

We evaluated PD-L1 and VISTA expression in different cell subsets from matched pre- and post-treatment prostate tumors and observed significantly higher PD-L1 expression on CD4⁺ T cells, CD8⁺ T cells, and CD8⁺ macrophages after treatment (Supplementary Fig. 7a).

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Feature Review

VISTA: A Mediator of Quiescence and a Promising Target in Cancer Immunotherapy

Long Yuan^{1,2}, Jahnvi Tatrini², Kathleen M. Mahoney^{2,3} and Gordon J. Freeman^{2,4}

V-domain Ig suppressor of T cell activation (VISTA) is a B7 family member that maintains T cell and myeloid quiescence and is a promising target for combination cancer immunotherapy. During inflammatory challenges, VISTA activity reprograms macrophages towards reduced production of proinflammatory cytokines and increased production of interleukin (IL)-10 and other anti-inflammatory mediators. The interaction of VISTA with its ligands is regulated by pH, and the acidic pH < 6.0 in the tumor microenvironment (TME) facilitates VISTA binding to P-selectin glycoprotein ligand 1 (PSGL-1). Targeting intratumoral pH might be a way to reduce the immunoinhibitory activity of the VISTA pathway and enhance antitumor immune responses. We review differences among VISTA therapeutics under development as candidate immunotherapies, focusing on VISTA binding partners and the unique structural features of this interaction.

VISTA: How This B7 Protein Might Transform Cancer Immunotherapy

Immunotherapy has become an established pillar of cancer treatment, in large part owing to the success of blocking the programmed cell death protein 1 (PD-1)/programmed death-ligand 1 (PD-L1) immune checkpoint (see *Overview*). As recent research deepens our understanding of V-domain Ig suppressor of T cell activation (VISTA), the VISTA signaling pathway has increasingly become a promising target for overcoming resistance to current immune checkpoint therapies [1]. Although the development of VISTA blocking antibodies has not reached human clinical trials, this review highlights the new features of VISTA that make this pathway particularly attractive for therapeutic development. We discuss (i) VISTA expression on immune cells in the tumor microenvironment (TME), (ii) the biological functions and bidirectional signaling pathways of VISTA in mammalian lymphocytes and myeloid cells, (iii) the structural features of VISTA that contribute to its molecular interactions, (iv) current VISTA monoclonal antibodies (mAbs) that are in clinical development, and (v) the candidate druggable targets that regulate the pH of the TME and which in turn might affect VISTA activity *in vivo*. This review gives a detailed picture of VISTA structure in the context of its binding partners and therapeutic antibodies targeting VISTA.

VISTA Structure

VISTA, also known as PD-1H, B7-H6, Des1, G24, DD10, and C10orf54, is encoded by the VSFR gene in human (but in mouse) and has multiple unique features, including its interaction with two receptors that bind to overlapping but distinct sites on the VISTA extracellular domain (ECD) [2–4]. VISTA is a type I transmembrane protein that was identified by mRNA analysis of activated versus resting mouse natural regulatory T cells (Treg) [5] and also by homology to co-inhibitory molecules such as PD-1 [6]. VISTA bears features of both the B7 and CD28 families of immunoregulatory molecules and can act as both a ligand and a receptor [7,8]. The VISTA ECD is most homologous to the B7 family, which includes well-known immune checkpoint ligands such as PD-L1 (Figure 1C). Whereas other B7 family members have an IgV-like and IgC-like domain, mouse and human VISTA contain a single unusually large IgV-like domain (Figure 1A) [5]. VISTA

Highlights

V-domain Ig suppressor of T cell activation (VISTA) binds to V-set and Ig domain-containing 3 (VSCG) and P-selectin glycoprotein ligand 1 (PSGL-1) ligands, and signaling may be bidirectional.

VISTA binds to PSGL-1 at acidic pH, such as in the tumor microenvironment (TME), but not at physiological pH.

VISTA actively imposes quiescence on mammalian myeloid and naive T cells, and inhibits T cell activation and cytokine production. It can promote peripheral tolerance in enhanced activation-induced T cell death.

VISTA is particularly upregulated on myeloid-derived suppressor cells (MDSCs) in humans, and can contribute to the immunosuppressive functions of myeloid cells by reducing T cell receptor (TCR) signaling and cell cycle, as well as by reprogramming myeloid cells towards reduced production of the proinflammatory cytokines interleukin (IL)-4, IL-6, tumor necrosis factor (TNF)-α, and IL-12, and increased production of IL-10 and other anti-inflammatory mediators.

Antagonistic VISTA antibodies are in clinical development for treating some cancers, drugs that target the acidity of the TME might reduce immunosuppressive activity in acidic niches and combine well with VISTA or checkpoint blockade therapies.

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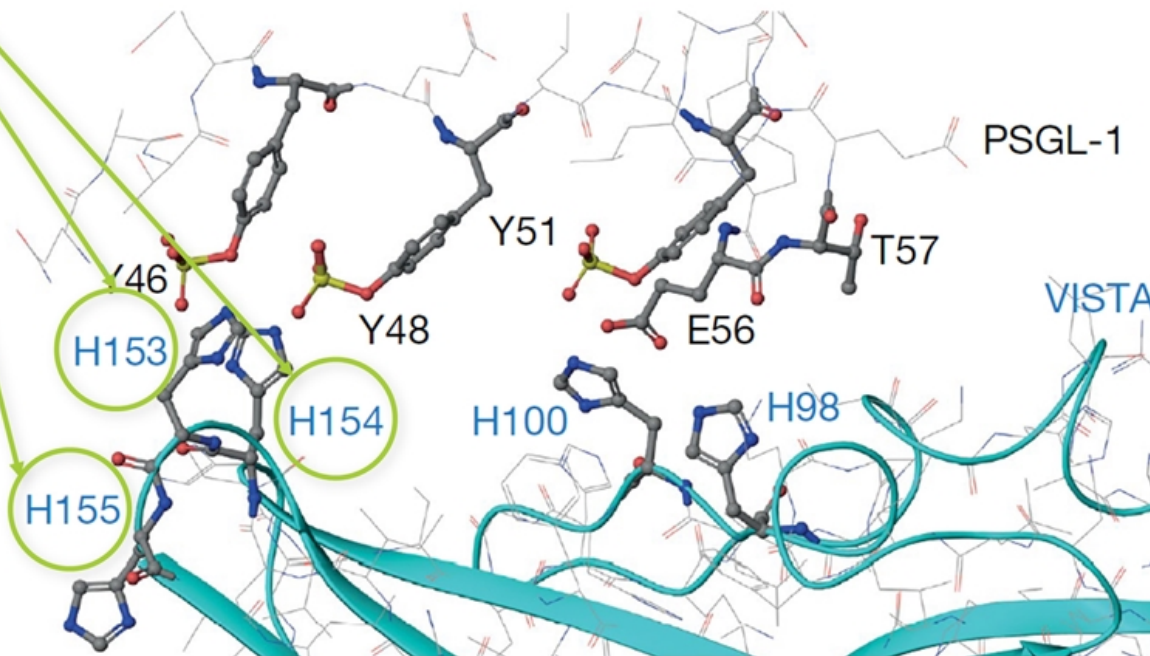
Trends in Immunology, March 2017, Vol. 42, No. 3
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VISTA Checkpoint is Activated at the Low pH of the Tumor Microenvironment



Antibodies that block VISTA histidines: H153, H154 and H155 on interrupt PSGL-1 binding¹



VISTA's extracellular domain is uniquely rich in histidines¹

Histidines are protonated at low pH enabling VISTA to distinguish the active (acidic pH) and inactive (neutral pH) PSGL-1 binding interface

1. Johnston et al., Nature 2019

Key to Unlocking the Power of VISTA

1. Block VISTA's interaction with PSGL-1 at pH 6 within the tumor microenvironment
2. Selectively bind VISTA at low pH to avoid:
 - target mediated drug disposition
 - on-target/off-tumor side effects
3. Design an Fc-competent IgG engaging with FcγR on tumor-infiltrating myeloid cells

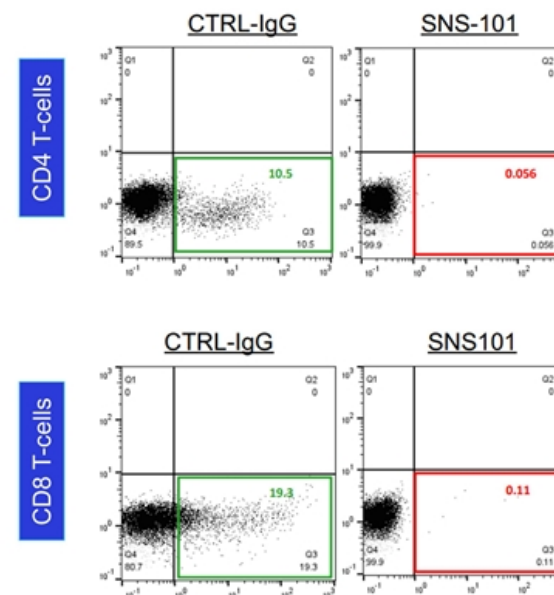
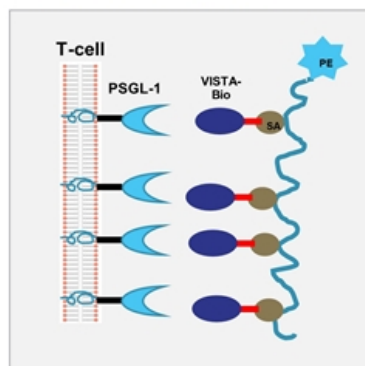


SNS-101 Inhibited Interaction of VISTA to its Receptor, PSGL-1, in CD4/CD8 T-Cells at Low pH 6.0

SNS-101:

- Fully human monoclonal antibody that selectively binds active (low pH) VISTA, but not inactive VISTA in the blood
- Potent inhibitor of PSGL-1 binding to VISTA
- Fc-competent framework to deliver positive “kick” to suppress myeloid cells in the tumor microenvironment

PSGL-1: VISTA Interaction on primary T-cells at pH 6.0

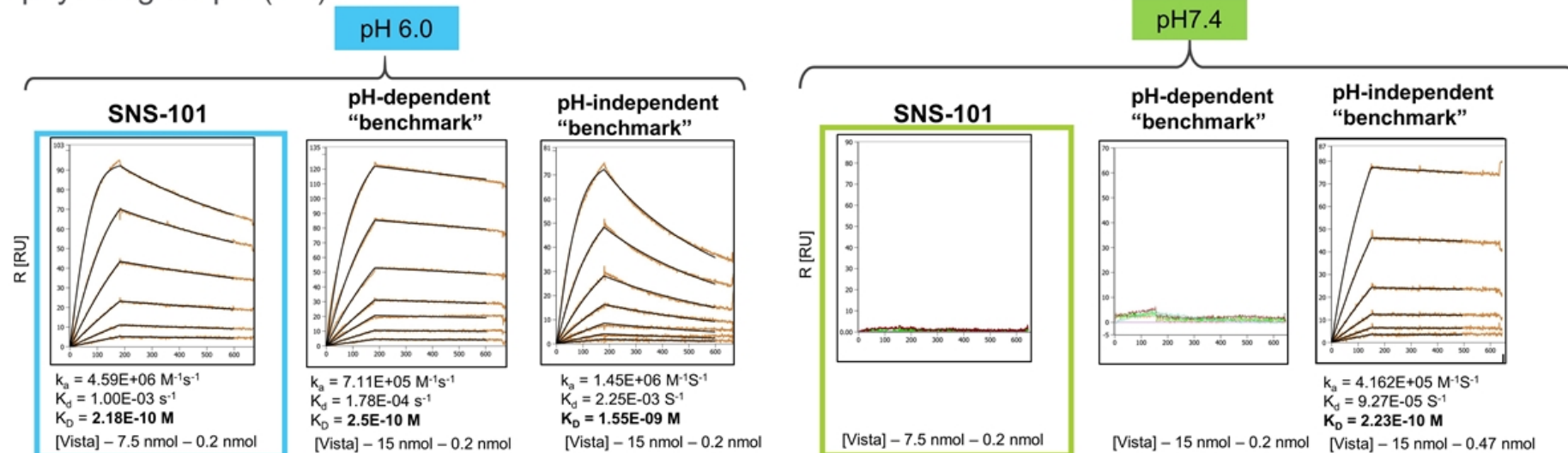


IND-Enabling Studies are Underway for SNS-101

SNS-101 Has >600-Fold Selectivity for VISTA^{pH6}

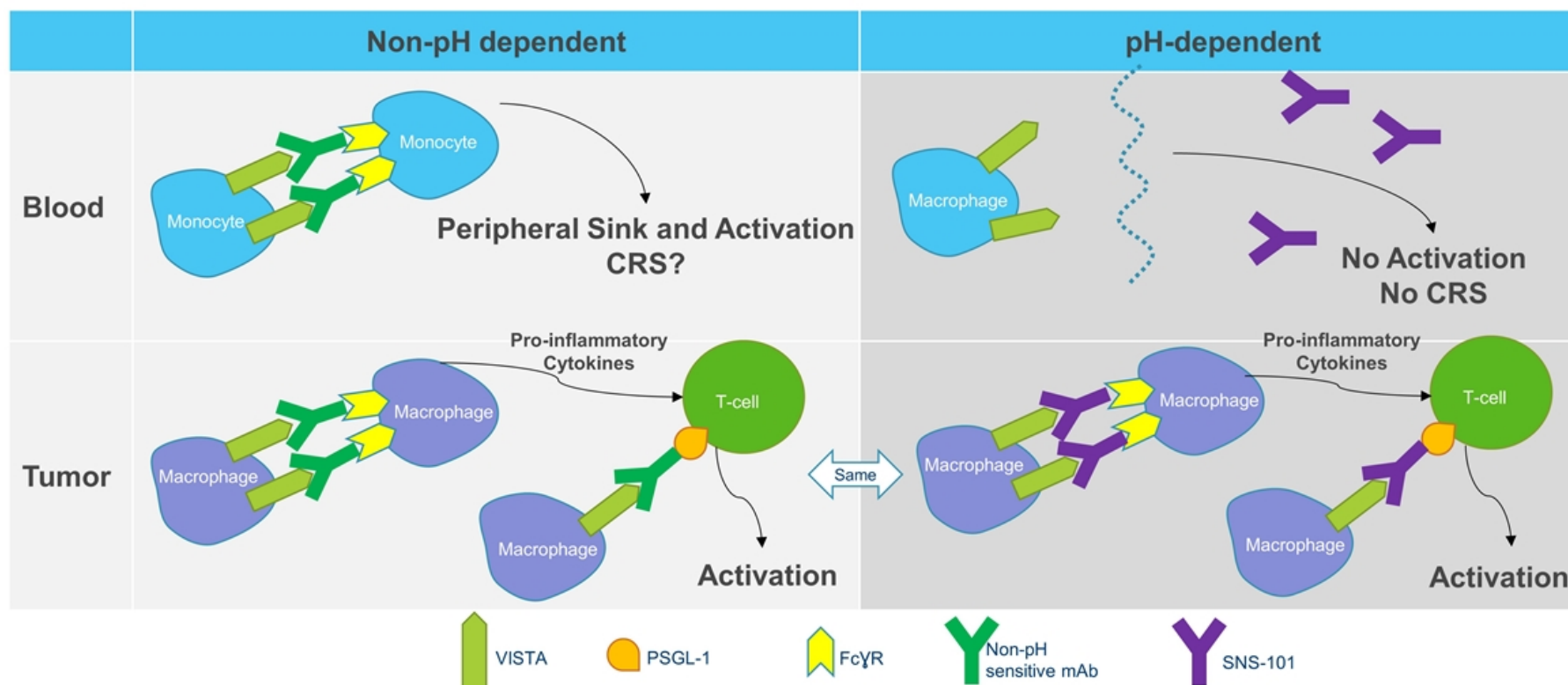
- Biophysical characterization demonstrates >600-fold selectivity for VISTA at pH 6.0
- Picomolar binding at low pH
- No significant binding observed at physiological pH (7.4)

	pH 6.0	pH 7.4
Monovalent Affinity (K_D) [nM]	0.218	132 (~No binding)



Proposed Mechanism of Action for SNS-101

Fc-competent framework is required for optimal activity, but FcγR engagement in the blood may result in untoward “off tumor” activation (i.e. CRS)



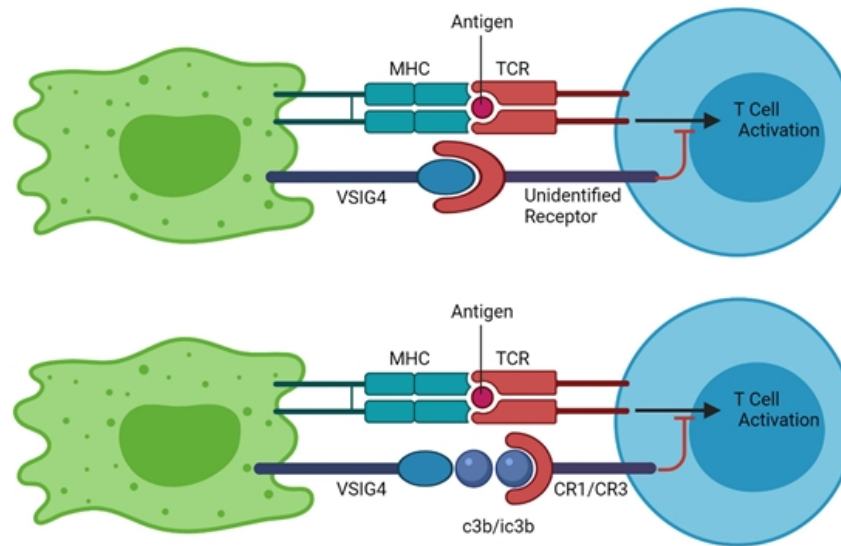
SNS-101 Is a Differentiated Anti-VISTA Antibody



TMAb Platform

	SNS-101	VISTA.18 (BMS)	KVA12.1 (Kineta)	CI-8993; JNJ-61610588 (J&J/Curis)	K01401-020; W0180 (Pierre Fabre)	HMBD-002 (Hummingbird)
Inhibit PSGL-1 Binding	Yes	Yes	unknown	Yes	unknown	unknown
pH Sensitive Binding	Yes	Yes	No	No	No	No
Fc Active	Yes (IgG1)	No (IgG4)	Yes (IgG1)	Yes (IgG1)	N/A	No (IgG4)
Stage	Preclinical	Preclinical	Preclinical	Phase I	Phase I	IND submission
Clinical Data / Notes	<ul style="list-style-type: none"> Preclinical data presented at STIC IND-enabling studies underway 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> JNJ initiated Phase I study in 2016 12 pts enrolled; initial dose 0.005 mg/kg Only patient treated at 0.3 mg/kg experienced grade 3 CRS-associated encephalopathy; trial was halted 	<ul style="list-style-type: none"> Ongoing 	

VSIG4: A Novel Next Generation Checkpoint Modulating the Tumor Microenvironment



No approved therapies against VSIG4

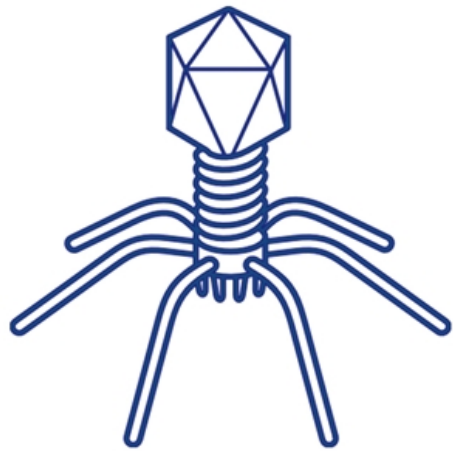
Adapted from Zang et al., J Clin Invest. 2006

- Second TMAb program
- B7 family related protein
- Expressed on macrophages
- Inhibits T-cell activation
- Novel therapeutic combinability with existing IO drugs

ImmunoPhage™ Platform



Bacteriophage



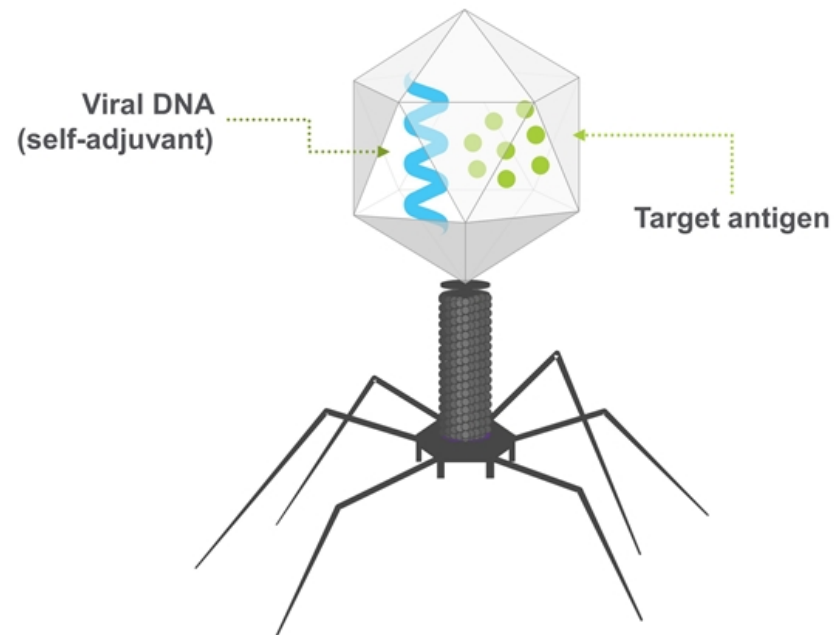
Ubiquitous viruses that infect bacteria but not mammalian cells. Adept at activating the human immune system in multiple unique ways

Generating Strong Antibody and T-cell Responses



ImmunoPhage Platform

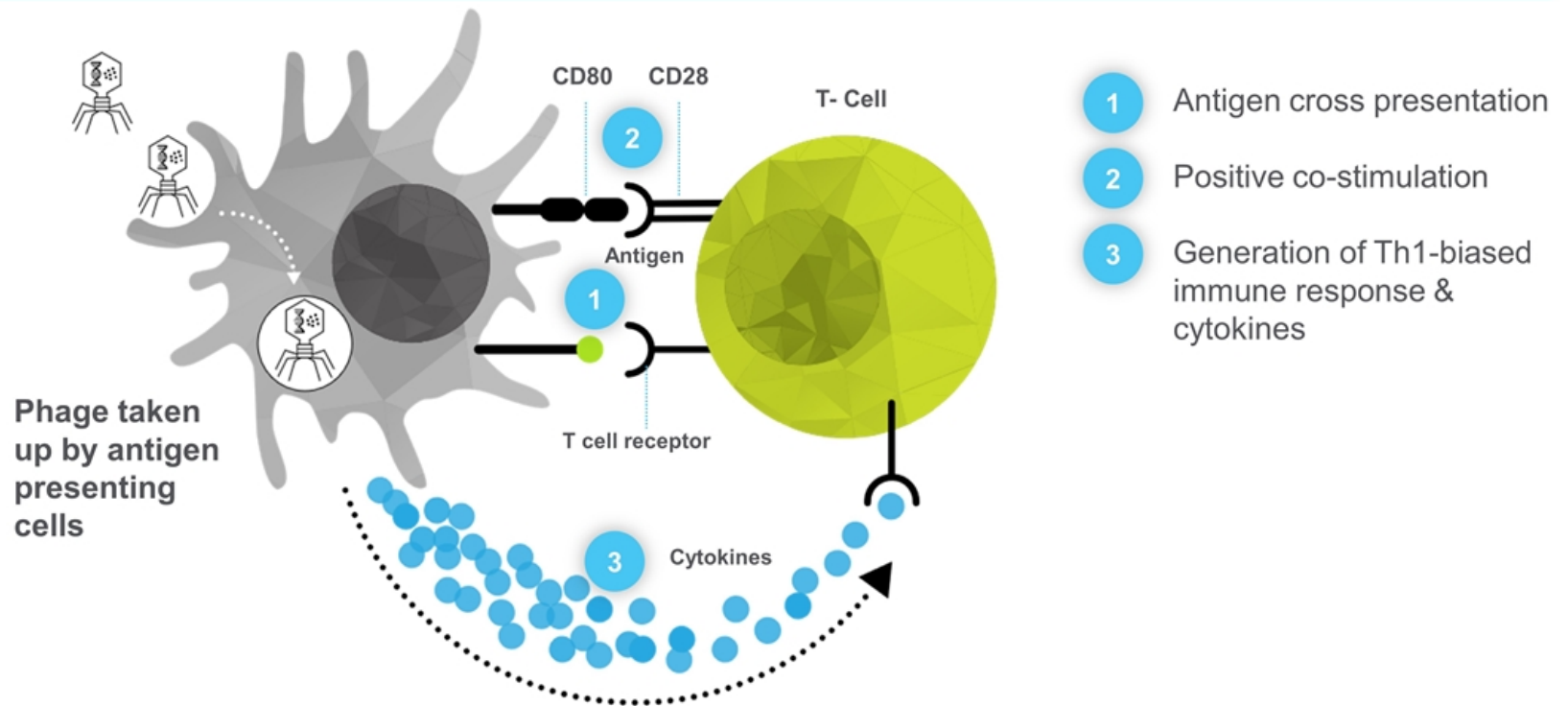
Bacteriophage virus is engineered and manufactured with both antigen and immune stimulatory viral DNA



The **ImmunoPhage™** bacteriophage is an icosahedron with a tail. This configuration can be viewed as an activating signal to the immune system

Generating Strong Antibody and T-cell Responses

ImmunoPhages are taken-up by APCs and deliver three critical signals required to drive activation of T cells.



ImmunoPhage™ A Multi-Pronged Approach to Address the Complexities of Cancer



Our **ImmunoPhages** can mount a multi-modal attack on cancer, combining the benefits of a traditional vaccine with localized gene therapy

Targeted therapeutic vaccine

- MHC-mediated immunity
- Bacteriophage have natural tropism for APCs
- Can be further targeted to APCs with non-antigen capsid modifications



Phortress™ library

- Personalized - yet off the shelf - medicines
- Pre-manufactured cost effectively - then combined based on genetic profile

Gene therapy vehicle

- Phage containing self-replicating RNA
- Used to deliver payloads consisting of immunomodulatory proteins or nanobodies

SNS-401-NG: Building the First Custom Merkel Cell Polyoma Virus (MCPyV) ImmunoPhage



SNS-401-NG Development



Collaboration with University of Washington to build **first custom Merkel Cell Carcinoma (MCC) vaccine consisting of Merkel Cell Polyoma Virus epitopes** and other patient specific antigens

MCC is a rare, aggressive neuroendocrine skin cancer

- 33-46% disease-specific mortality
- 2,500 cases/yr with disease-specific mortality approaching 50%
- Vaccine combination therapy in adjuvant or neoadjuvant is attractive and feasible
 - PD-1/PD-L1 refractory MCC remains unmet medical need with aggressive clinical course
 - ~40% MCC patients recur <24 months following definitive local treatment

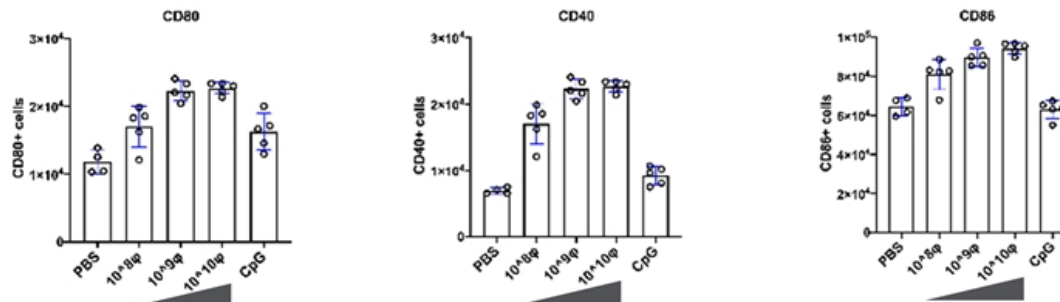
Integration of MCPyV is present in ~80% of U.S. cases

- In these cases, expression of a viral antigen (oncogenic T-antigen) **appears to be a strictly required tumor driver**
- Researchers at UW have mapped MCPyV epitopes and **determined CD8 T-cell, CD4 T-cell, and B-cell epitopes that are antigenic** in the context of MCPyV+ MCC tumors.

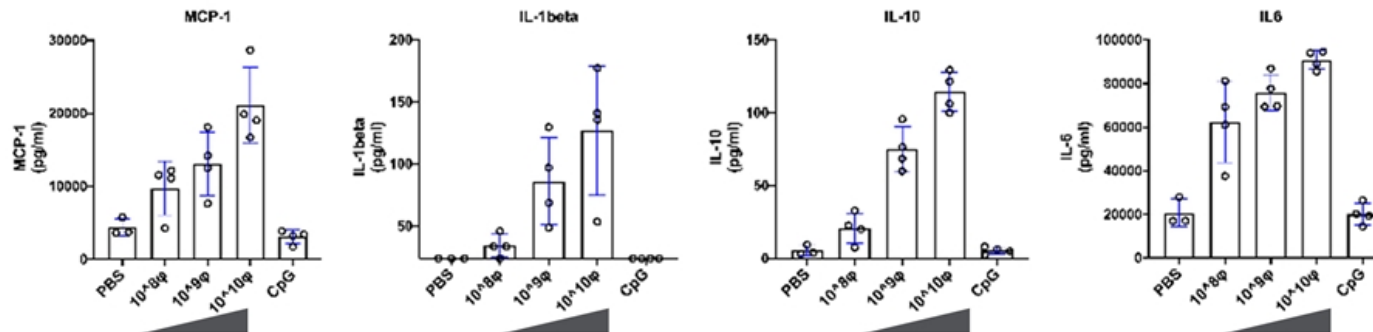
Mechanism of Action: Activation and Maturation of Dendritic Cells

Dose-response of engineered lambda phage on human skin-derived DC cultures

Signal: Dendritic cell co-stimulatory molecules



Signal: Cytokine secretion



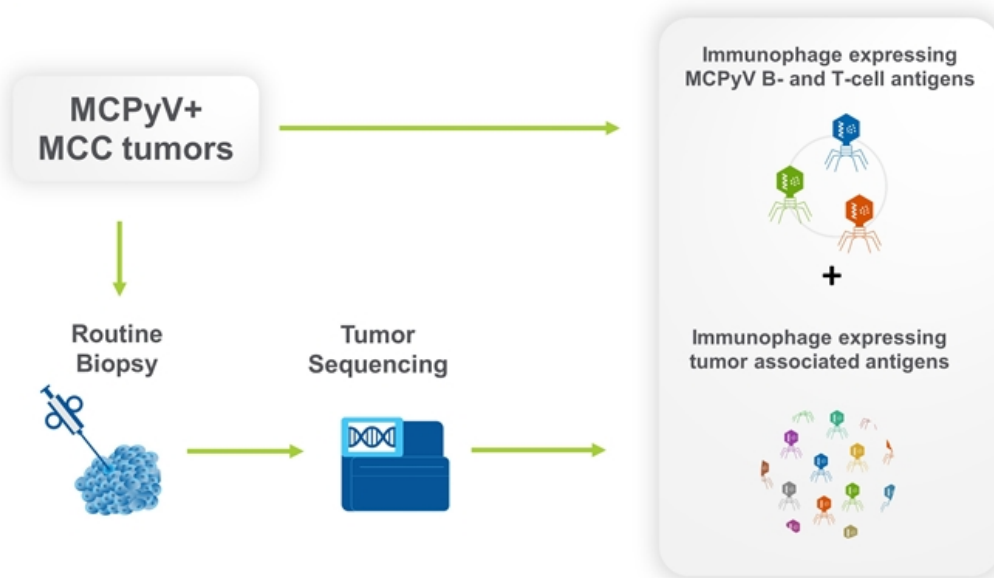
Critical signals of dendritic cell activation show dose-dependent increases when cells are exposed to increasing amounts of ImmunoPhages

SNS-401-NG has Potential to be First Fully Customized, Yet Off-the-Shelf, Therapy



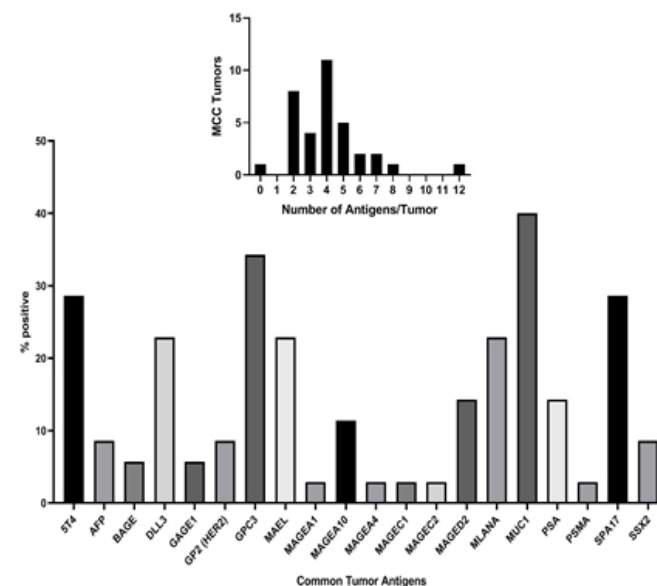
SNS-401-NG Development in Merkle Cell

Patients would receive a bespoke mixture of ImmunoPhage that included antigens from the MCPyV and a subset of TAA-expressing ImmunoPhage



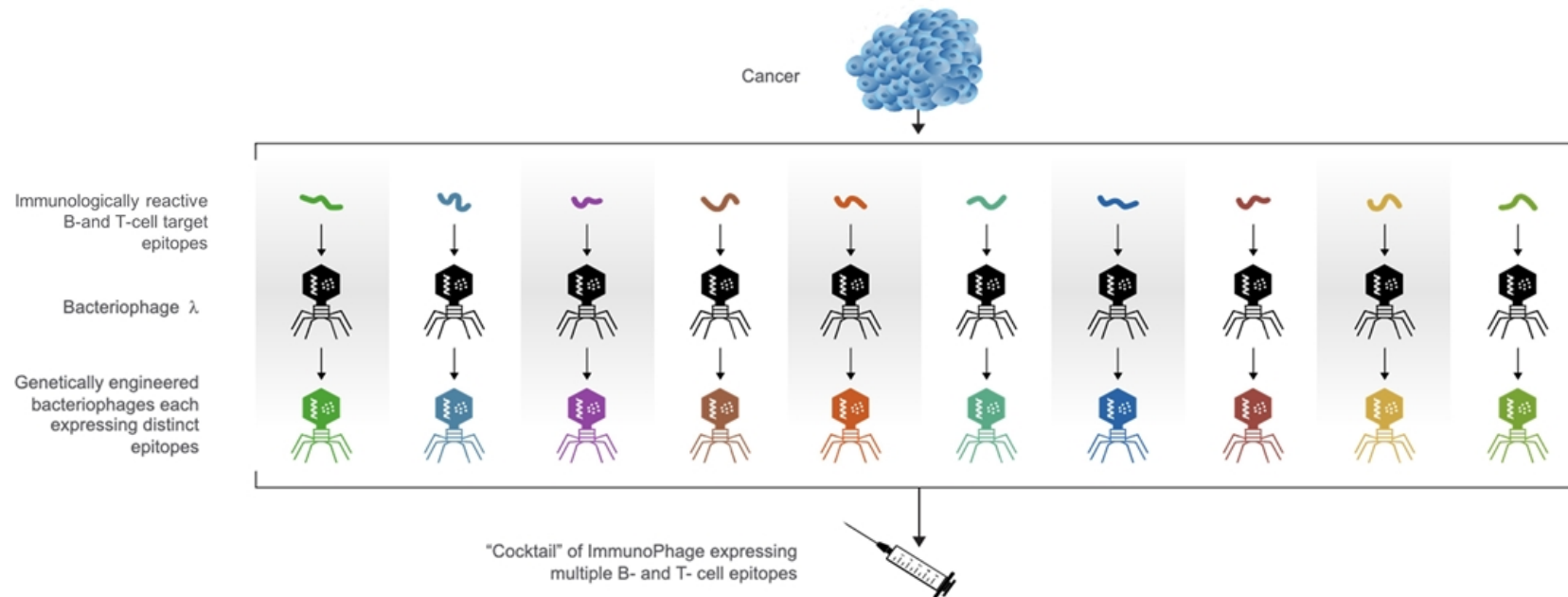
1. Based on internal data

Most MCC tumors contain multiple TAAs¹



Common Tumor Antigens

Phortress: Proprietary Library of Personalized Vaccine Cocktails with Off-the-Shelf ImmunoPhage “ingredients”



- These “cocktails” are defined by the disease or patient genetics
- Combinations are customized to cover multiple epitopes, protein domains or targets
- Each *ImmunoPhage* is pre-manufactured to target a discrete antigen

Personalized Immunotherapy Approach Could Accelerate Speed to Treatment



High speed and low cost-of-goods of ImmunoPhage allows a broader array of antigens

Personalized yet Off-the Shelf TAA Therapy

Off-the-Shelf + Patient-specific Neoantigen Therapy

Routine Biopsy



Clinical biopsy of tumor as input material

Tumor Sequencing



Tumor DNA
Tumor RNA
Normal DNA

Personalized yet Off-the-shelf ImmunoPhage Cocktail



Assemble a personalized cocktail from off-the-shelf TAA ImmunoPhage for administration

Neoantigen Prediction



Identify additional tumor specific neoantigens

Neoantigen ImmunoPhage Manufacturing



Engineer novel ImmunoPhages expressing distinct tumor specific epitopes

ImmunoPhage Injection Including Neoantigens

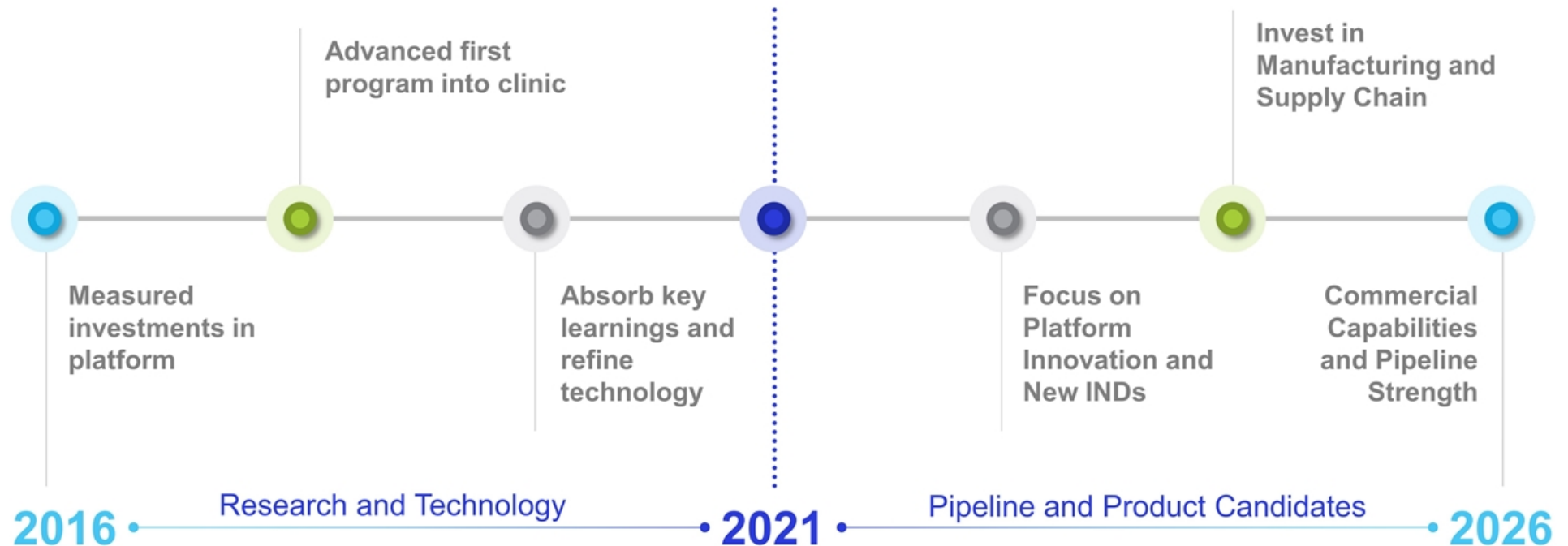


Deliver neoantigen ImmunoPhage cocktail for administration and add neoantigen phages to bank for future use

Sensei's Vision to Capture Platform and Pipeline Value



Feb 2021: IPO



Proven Team With Deep Experience



John Celebi, MBA
President and CEO



Robert Pierce, MD
Chief Scientific Officer



Erin Colgan
SVP, Finance and Administration



Michael Boychyn, PhD
SVP, CMC



Elisabeth Colunio
VP, Human Resources



Lora Pike
VP, Investor Relations Communications



Pauline Callinan, PhD
VP, Business Operations and Strategy



Alice Drumheller
VP, Clinical Operations



Edward van der Horst, PhD
VP, Preclinical Development



Jean Campbell, PhD
VP, Biologics Discovery



Bao Le
VP, Regulatory

Upcoming Expected Program Milestones



SNS-101 (anti-VISTA)

YE 2021:

- ✓ Present preclinical data at 36th Annual SITC Conference
- ✓ Select lead candidate
- ✓ Initiate IND-enabling studies underway



SNS-401-NG

2H 2022:

- Initiate IND-enabling studies



SNS-VSIG4

2023:

- Select product candidate



Training the Immune System to Fight Cancer

December 6, 2021

NASDAQ: SNSE

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