UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 8-K

CURRENT REPORT
Pursuant to Section 13 or 15(d)
of the Securities Exchange Act of 1934

Date of Report (Date of earliest event reported): August 31, 2022

Sensei Biotherapeutics, Inc.
(Exact Name of Registrant as Specified in its Charter)

Delaware	**001-39980**	**83-1863385**
(State or Other Jurisdiction of Incorporation)	**(Commission File Number)**	**(IRS Employer Identification No.)**

451 D Street, Suite 710 **Boston, MA**	**02210**
(Address of Principal Executive Offices)	**(Zip Code)**

Registrant's telephone number, including area code: (240) 243-8000

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

☐ Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)

☐ Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)

☐ Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))

☐ Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Securities registered pursuant to Section 12(b) of the Securities Exchange Act of 1934:

Title of each class	Trading symbol	Name of each exchange on which registered
Common Stock	**SNSE**	**The Nasdaq Stock Market LLC**

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (§230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§240.12b-2 of this chapter).

Emerging growth company ☒

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Item 7.01 Regulation FD Disclosure.

On August 31, 2022, Sensei Biotherapeutics, Inc. (the "Company") issued a press release titled "Sensei Biotherapeutics Announces New Preclinical Data Demonstrating Favorable Pharmacokinetic and Immunologic Effects of SNS-101, a pH-selective VISTA-blocking Antibody." A copy of the press release is furnished as Exhibit 99.1 to this Current Report on Form 8-K.

Also on August 31, 2022, the Company updated its corporate presentation for use in meetings with investors, analysts and others. A copy of the presentation is furnished as Exhibit 99.2 to this Current Report on Form 8-K.

The information in Item 7.01 and the exhibits attached hereto are being furnished and shall not be deemed "filed" for the purposes of Section 18 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), or otherwise subject to the liabilities of that section, nor shall they be deemed incorporated by reference into any filing under the Exchange Act or the Securities Act of 1933, as amended, whether filed before or after the date hereof and regardless of any general incorporation language in such filing.

Item 9.01 Financial Statements and Exhibits.

(d) Exhibits

Exhibit Number	Exhibit Description
99.1	Press Release of Sensei Biotherapeutics, Inc., dated August 31, 2022
99.2	Sensei Biotherapeutics, Inc. corporate presentation, dated August 2022
104	The cover page from this Current Report on Form 8-K, formatted in Inline XBRL

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

Sensei Biotherapeutics, Inc.

Date: August 31, 2022

/s/ John Celebi
John Celebi
President and Chief Executive Officer

Sensei Biotherapeutics Announces New Preclinical Data Demonstrating Favorable Pharmacokinetic and Immunologic Effects of SNS-101, a pH-selective VISTA-blocking Antibody

BOSTON, MA – August 31, 2022 – Sensei Biotherapeutics, Inc. (NASDAQ: SNSE), an immuno-oncology company focused on the discovery and development of next-generation therapeutics for cancer, today reported preliminary preclinical data from mouse and non-human primate studies of SNS-101, a monoclonal antibody targeting the immune checkpoint VISTA (V-domain Ig suppressor of T cell activation).

"These preclinical data demonstrate that our conditionally active, pH-selective antibody successfully overcomes pharmacokinetic issues associated with targeting the VISTA immune checkpoint, including target-mediated drug disposition and cytokine release syndrome, in these models. The data also differentiate SNS-101 from non-selective antibodies by showing expansion of naïve and memory T cell phenotypes *in vivo*, as well as significant enhancement of anti-tumor effects in combination with anti-PD-1 antibodies as compared to anti-PD-1 antibodies alone," said Robert Pierce, M.D., Chief R&D Officer. "These results represent important progress for our SNS-101 program and a potential breakthrough for the field of VISTA inhibition as a novel therapeutic approach in multiple solid tumor indications. We are thrilled with these preliminary results and the potential of SNS-101 to provide a new standard of care to patients in need of innovative treatment options."

In a whole-blood assay at neutral pH, a clinical-stage, pH-independent VISTA antibody induced release of pro-inflammatory cytokines, such as IFNy and TNFμ, at substantially higher levels of concentration compared with Sensei's pH-selective VISTA antibody SNS-101, across doses ranging from 1 mg/mL to 100 mg/mL. These preclinical data support the Company's hypothesis that pH-driven, conditional binding of SNS-101 could be an effective mechanism for preventing the on-target, off-tumor VISTA binding that has been shown to drive cytokine release syndrome in human patients.

SNS-101 also displayed a favorable pharmacokinetic profile in non-human primates compared with a clinical-stage, pH-independent VISTA antibody. Whereas the pH-independent antibody exhibited target-mediated drug disposition and clearance from the blood within hours of administration due to interaction with VISTA-positive immune cells, the SNS-101 concentration declined linearly with a median half-life of approximately three weeks. These data strongly support the Company's belief that SNS-101's selective binding to VISTA at low pH, like that found in the tumor microenvironment, has potential to mitigate the pharmacokinetic and safety issues associated with off-tumor binding and unregulated activity.

Finally, experiments in a mouse tumor model demonstrated a significant increase in the production of anti-tumor $CD8^+$ T cells among animals treated with a combination of SNS-101 and anti-PD-1 antibodies compared with PD-1 alone, which correlated with tumor growth inhibition. Because $CD8^+$ T cells are essential tumor-destroying immune cells, these data provide encouraging evidence that this therapeutic combination has potential to generate a highly effective anti-tumor response in patients.

IND-enabling studies are underway to evaluate the potential of SNS-101 as a novel treatment for solid cancers, both as a monotherapy and in combination with the blockade of other immune checkpoints.

The Company plans to file an IND during the first half of 2023. Additional information from these studies can be found in the Company's corporate presentation, available on the Company's website, and in its SEC filings. More detailed findings will be published at upcoming scientific conferences.

About Sensei Biotherapeutics

Sensei Biotherapeutics (NASDAQ: SNSE) is an immuno-oncology company focused on the discovery and development of next generation therapeutics for cancer. Sensei has designed two unique approaches to develop highly selective therapeutics – its TMAb™ (Tumor Microenvironment Activated biologics) platform, which disables checkpoints and other immunosuppressive signals in the tumor microenvironment to unleash existing T cells against tumors, and the ImmunoPhage™ platform, which trains new T cells to recognize and kill malignant cells. Using its TMAb platform, the company is developing SNS-101, a fully human antibody designed to block the V-domain Ig suppressor of T cell activation (VISTA) checkpoint selectively only within the low pH tumor microenvironment, where VISTA acts as a suppressor of T cells by binding the receptor PSGL-1. The company is also using its platforms to develop other preclinical programs targeting multiple solid tumor indications. For more information, please visit www.senseibio.com, and follow the company on Twitter @SenseiBio and LinkedIn.

Cautionary Note Regarding Forward-Looking Statements

Any statements contained in this press release that do not describe historical facts may constitute forward-looking statements as that term is defined in the Private Securities Litigation Reform Act of 1995. These statements may be identified by words and phrases such as "believe", "designed to," "expect", "may", "plan", "potential", "will", and similar expressions, and are based on Sensei's current beliefs and expectations. These forward-looking statements include expectations regarding the development and potential therapeutic benefits of Sensei's product candidates and platforms, including SNS-101; the expected safety profile of Sensei's product candidates, including SNS-101; and the potential benefits of SNS-101, including the potential to overcome pharmacokinetic and safety issues associated with targeting the VISTA immune checkpoint, including target-mediated drug disposition and cytokine release syndrome, the potential to expand naïve and memory T cell phenotypes, as well as the potential to enhance anti-tumor effects in combination with anti-PD-1 antibodies. These statements involve risks and uncertainties that could cause actual results to differ materially from those reflected in such statements. Risks and uncertainties that may cause actual results to differ materially include uncertainties inherent in the development of therapeutic product candidates, such as the risk that any one or more of Sensei's product candidates will not be successfully developed or commercialized; the risk of delay or cessation of any planned clinical trials of Sensei's product candidates; the risk that prior results, such as signals of safety, activity or durability of effect, observed from preclinical studies, including the preclinical studies described in this press release, will not be replicated or will not continue in ongoing or future studies or clinical trials involving Sensei's product candidates; the risk that Sensei's product candidates or procedures in connection with the administration thereof will not have the safety or efficacy profile that we anticipate; risks associated with Sensei's dependence on third-party suppliers and manufacturers, including sole source suppliers, over which we may not always have full control; risks regarding the accuracy of our estimates of expenses, capital requirements and needs for additional financing; and other risks and uncertainties that are described in Sensei's Annual Report on Form 10-K filed with the U.S. Securities and Exchange Commission (SEC) on March 15, 2022 and Sensei's other Periodic Reports filed with the SEC. Any forward-looking statements speak only as of the date of this press release and are based on information available to Sensei as of the date of this release, and Sensei assumes no obligation to, and does not intend to, update any forward-looking statements, whether as a result of new information, future events or otherwise.

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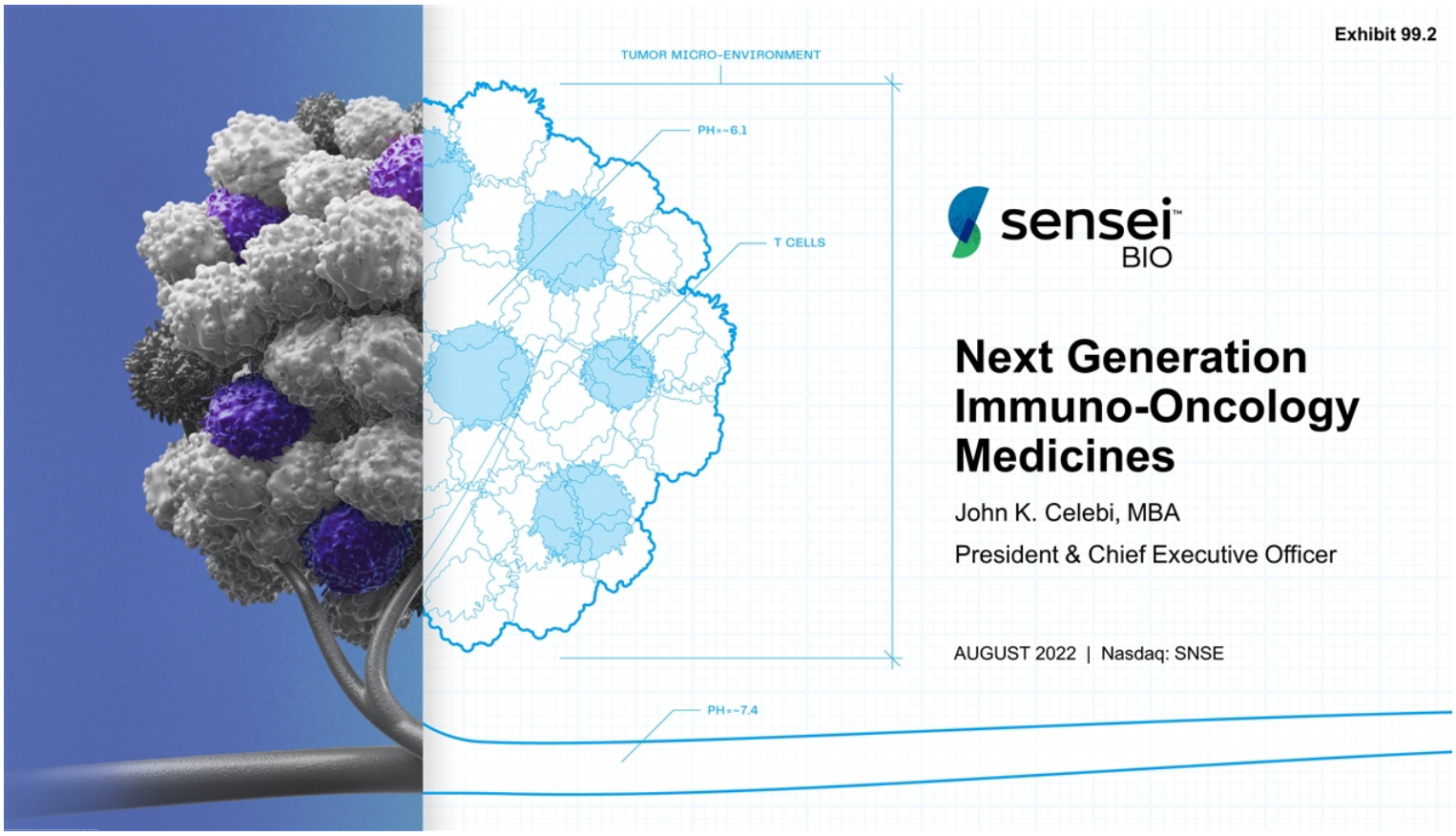
Exhibit 99.2



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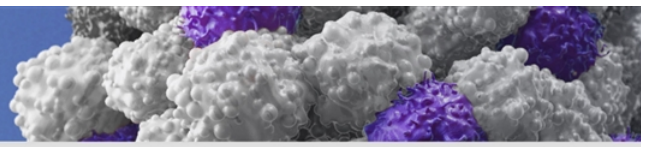
Next Generation Immuno-Oncology Medicines

John K. Celebi, MBA

President & Chief Executive Officer

AUGUST 2022 | Nasdaq: SNSE

Disclaimer



This presentation has been prepared by Sensei Biotherapeutics, Inc. (the “Company,” "we," "us") and is made for informational purposes only. The information set forth herein does not purport to be complete or to contain all of the information you may desire. Statements contained herein are made as of the date of this presentation unless stated otherwise, and neither the delivery of this presentation at any time, nor any sale of securities, shall under any circumstances create an implication that the information contained herein is correct as of any time after such date or that information will be updated or revised to reflect information that subsequently becomes available or changes occurring after the date hereof.

This presentation contains estimates and other statistical data made by independent parties and by us relating to market shares and other data about our industry. This presentation also contains "forward-looking" statements as that term is defined in the Private Securities Litigation Reform Act of 1995 that are based on our management's beliefs and assumptions and on information currently available to management. These forward-looking statements include, without limitation, expectations regarding the development of our product candidates and platforms, the availability of data from our preclinical studies, the timing of selection of product candidates, the timing of IND submissions to the FDA, and our belief that our existing cash and cash equivalents will be sufficient to fund our operations at least into the first quarter of 2025.

When used in this presentation, the words and phrases "designed to," "may," "believes," "intends," "seeks," "anticipates," "plans," "estimates," "expects," "should," "assumes," "continues," "could," "will," "future" and the negative of these or similar terms and phrases are intended to identify forward-looking statements. Forward-looking statements involve known and unknown risks, uncertainties and other factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements. Risks and uncertainties that may cause actual results to differ materially include uncertainties inherent in the development of therapeutic product candidates, such as preclinical discovery and development, conduct of clinical trials and related regulatory requirements, our reliance on third parties over which we may not always have full control, and other risk and uncertainties that are described in our Annual Report on Form 10-K filed with the SEC on March 15, 2022 and our other Periodic Reports filed with the SEC. Forward-looking statements represent our management's beliefs and assumptions only as of the date of this presentation and include all matters that are not historical facts. Our actual future results may be materially different from what we expect. Except as required by law, we assume no obligation to update these forward-looking statements publicly, or to update the reasons actual results could differ materially from those anticipated in the forward-looking statements, even if new information becomes available in the future.

Certain information contained in this presentation relates to, or is based on, studies, publications, surveys and other data obtained from third-party sources and the Company's own internal estimates and research. While the Company believes these third-party sources to be reliable as of the date of this presentation, it has not independently verified, and makes no representation as to the adequacy, fairness, accuracy or completeness of, any information obtained from third-party sources. In addition, all of the market data included in this presentation involves a number of assumptions and limitations, and there can be no guarantee as to the accuracy or reliability of such assumptions. Finally, while we believe our own internal research is reliable, such research has not been verified by any independent source.

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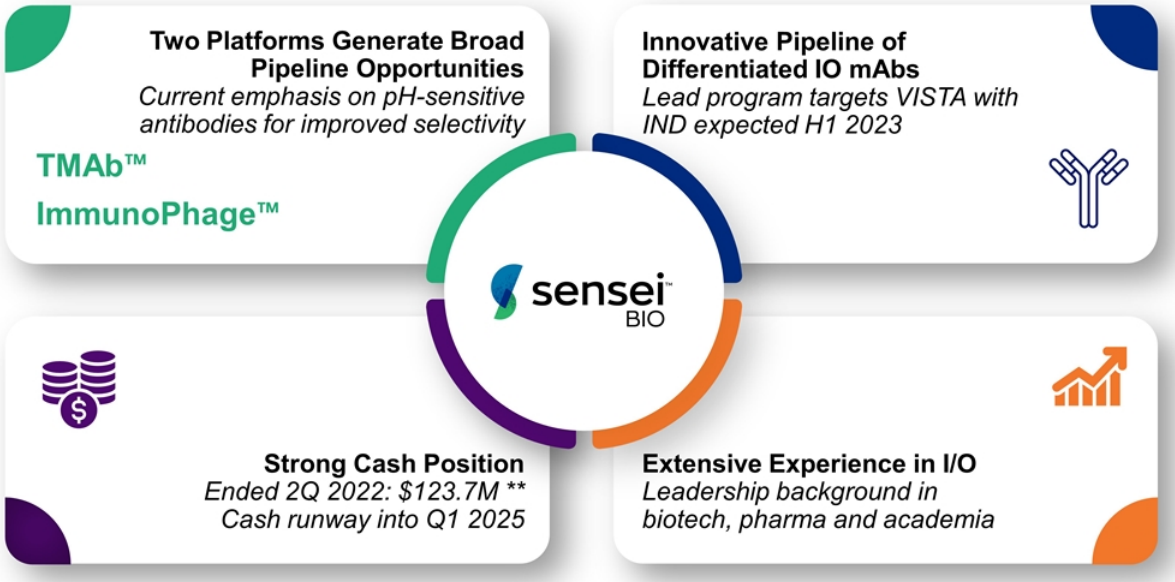
Positioned to Drive Value with Next Generation Product & Platform Development



*Tumor Microenvironment Activated biologics
**Consists of cash, cash equivalents and marketable securities

Innovative Pipeline of IO Drugs with Broad Commercial Potential

	Program (Target)	Indication	Discovery	IND-enabling	Phase 1 / 2 Clinical
TMAb	SNS-101 (VISTA)	Solid Tumors			
TMAb	SNS-102 (VSIG4)	Solid Tumors			
TMAb	SNS-103 (ENTPDase1/CD39)	Solid Tumors			
ImmunoPhage	SNS-401-NG (Multiple Tumor Antigens)	Merkel Cell Carcinoma			
ImmunoPhage		Multiple Indications			

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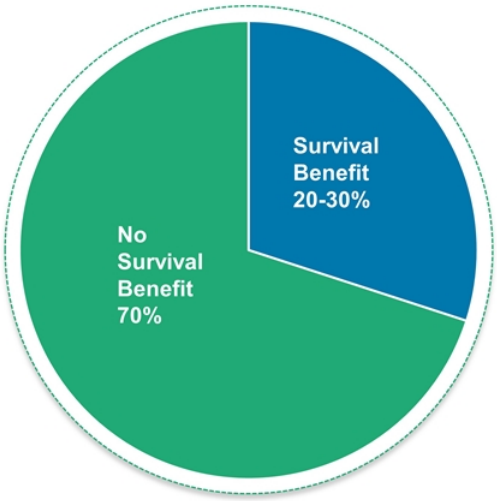
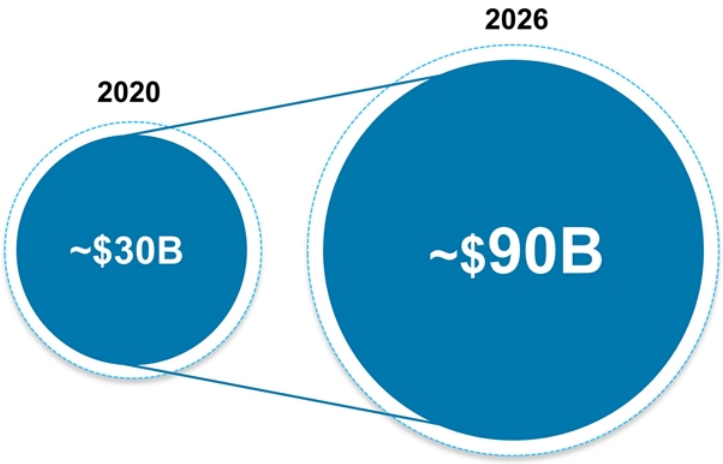
The Modern-Day Challenge in Immuno-Oncology

Majority of patients don't respond to PD-1/PD-L1 monotherapy[1]



Global PD-1/PD-L1 Market[2]



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1. Gerber et al., Biochemical Pharmacology 2016
2. Market estimates from PD-1 and PDL-1 Inhibitors Market Size in 2021 – MarketWatch, 360 Research

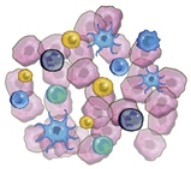
Two Major Types of Non-Responders to PD-1 Blockade

Anti-PD-1 or PD-L1 Treatment

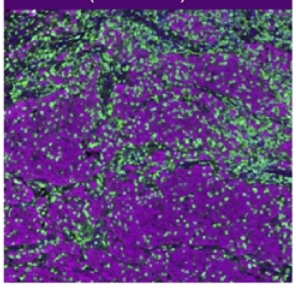
Green = T-cells
Purple = tumor

Responders

T-cells Inside Tumor

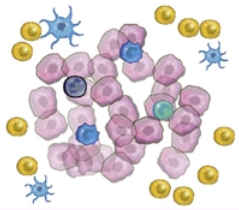


Hot (inflamed) tumor

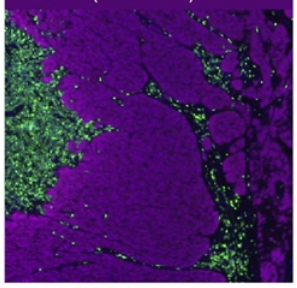


Non-Responders

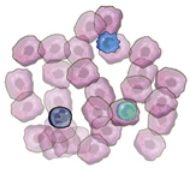
T-cells Inactive or Outside Tumor



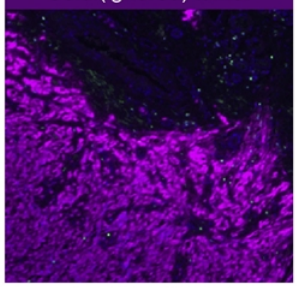
Cold (excluded) tumor



T-cells Absent



Cold (ignored) tumor



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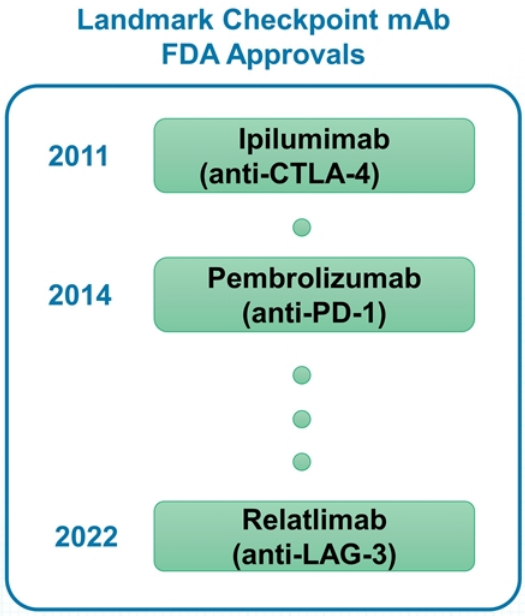
Adapted from Van der Woulde-LL, et al, Trends in Cancer, 2017

The Challenge of Next Generation Checkpoint Blockade

- **Few new classes of checkpoint blocking antibodies approved since landmark approvals of CTLA-4 and PD-1**
- **Antibodies blocking immune checkpoints are often limited by dose limiting toxicities that prevent maximal therapeutic outcomes**
  - Immune checkpoints are frequently expressed in normal tissues, including monocytes, neutrophils, NK cells, and T cells
  - Antibodies may encounter a pharmacological “sink” in those tissues and drive on-target/off-tumor toxicity, preventing therapeutic concentrations at the tumor
- **Conditionally active antibodies with enhanced targeting for tumors are needed to unleash the potential of immune targets**
- **pH-selective antibodies have demonstrated preferential biodistribution in tumors in mice, reduced toxicity in NHPs, and improved efficacy** [1]



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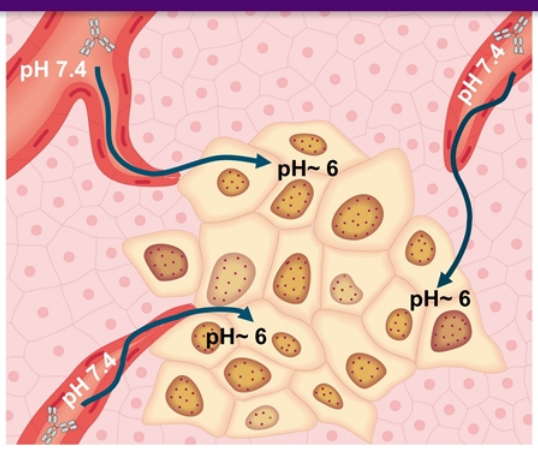
1 Lee et al, Mabs, 2022

pH-sensitive Antibodies Selectively 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 designed to 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 are expected to bypass tissue compartments other than the low-pH tumor microenvironment
- Goal is to unlock previously undruggable immune targets through potential for improved safety and clinical activity profile

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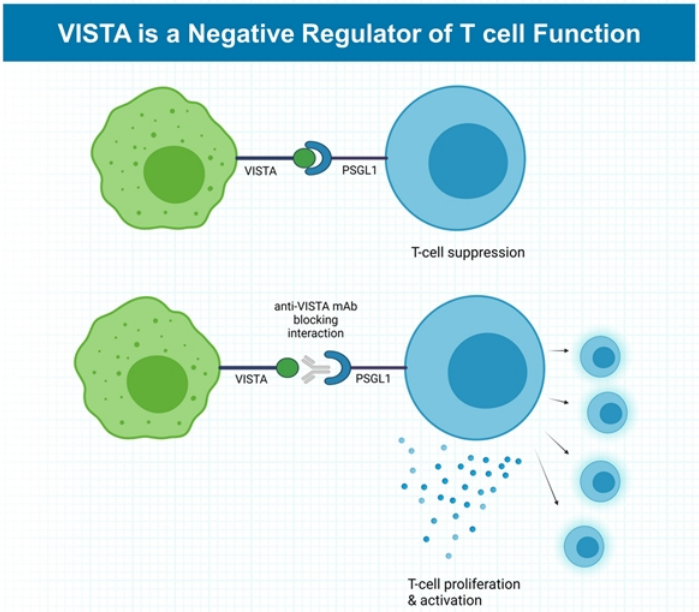
VISTA: An Emerging Checkpoint Target on Myeloid Cells

Target Overview:

- B7 family ligand
- Extensive expression on myeloid cells[1] correlating with poor survival rates across multiple cancers
- Novel development program with no approved therapies
- Large market opportunity

Sensei's Competitive Advantage:

- Extensive understanding of VISTA biology
- Unique tumor selective antibody



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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

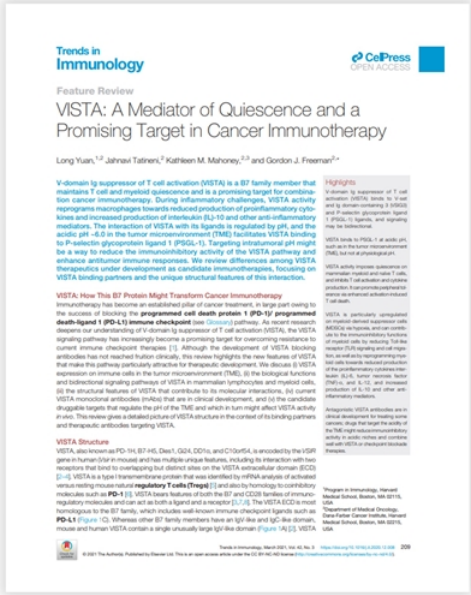
BRIEF COMMUNICATIONS

nature medicine

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

Sanjeev Gao[1], John F Ward[2], Curtis A Pettaway[3], Lewis Z Shi[4], Sunati K Subudhi[1], Luis M Vence[1], Hao Zhao[1], Jianding Chen[1], Hong Chen[1], Eleni Efstathiou[3], Patricia Troncoso[5], James P Allison[4,6], Christopher J Logothetis[3], Ignacio I Wistuba[2], Maneesh A Sopwala[7], Jingjing Sun[7], Jennifer Wargo[8], Jorge Blando[1] & Padmanee Sharma[1,3,9]

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 presurgical 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 tumors after ipilimumab therapy.



Trends in Immunology

CellPress OPEN ACCESS

Feature Review

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

Long Yuan,[1,2] Jahnavi Tatineni,[2] Kathleen M. Mahoney,[2,3] and Gordon J. Freeman[2,*]

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 Glossary) pathway. 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 fruition clinically, 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-H5, Dies1, G24, DD1α, and C10orf54, is encoded by the *VSIR* gene in human (*Vsir* 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 (Tregs)** [5] and also by homology to coinhibitory 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 [3,7,8]. 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) [3]. VISTA

Highlights

V-domain Ig suppressor of T cell activation (VISTA) binds to V-set and Ig domain-containing 3 (VSIG3) 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 activity imposes quiescence on mammalian myeloid and naïve T cells, and inhibits T cell activation and cytokine production. It can promote peripheral tolerance via enhanced activation-induced T cell death.

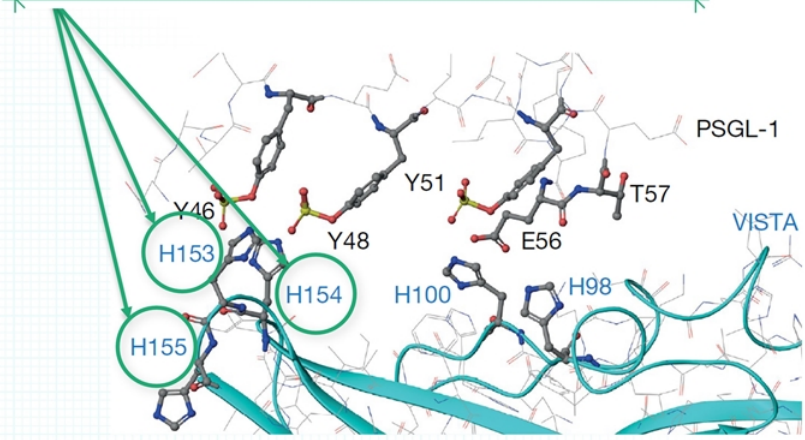
VISTA is particularly upregulated on myeloid-derived suppressor cells (MDSCs) via hypoxia, and can contribute to the immunoinhibitory functions of myeloid cells by reducing Toll-like receptor (TLR) signaling and cell migration, as well as by reprogramming myeloid cells towards reduced production of the proinflammatory cytokines interleukin (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 immunoinhibitory activity in acidic niches and combine well with VISTA or checkpoint blockade therapies.

*Program in Immunology, Harvard Medical School, Boston, MA 02115, USA
[2]Department of Medical Oncology, Dana-Farber Cancer Institute, Harvard Medical School, Boston, MA 02115, USA

VISTA Checkpoint is Activated at the Low pH of the Tumor Microenvironment

Antibodies that block protonated VISTA histidines interrupt PSGL-1 binding[1]



- VISTA's extracellular domain is uniquely rich in histidines[1]
- Histidines are protonated at low pH enabling VISTA to distinguish the active (acidic pH) and inactive (neutral pH) PSGL-1 binding interface
- SNS-101 Has >600-Fold Selectivity for Active VISTA^{pH6}

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

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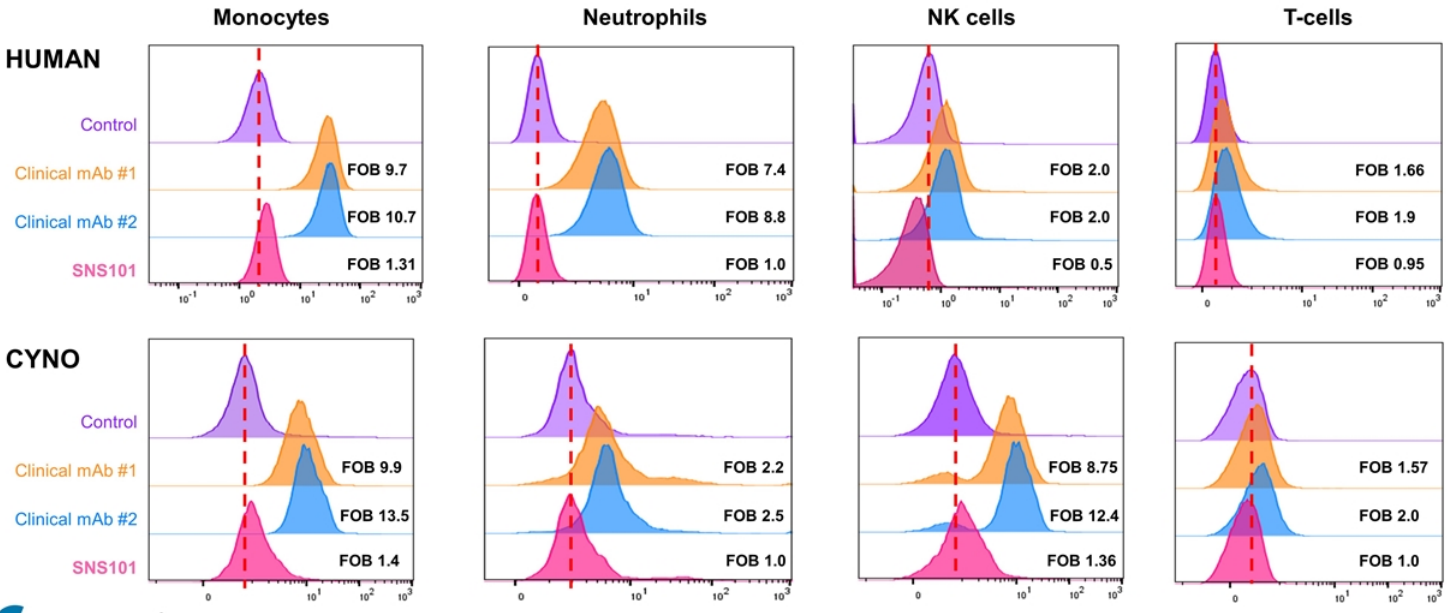
1. Johnston et al., Nature 2019

No Significant Binding of SNS-101 to Monocytes, Neutrophils, NK Cells and T-cells in Whole blood at Physiological pH



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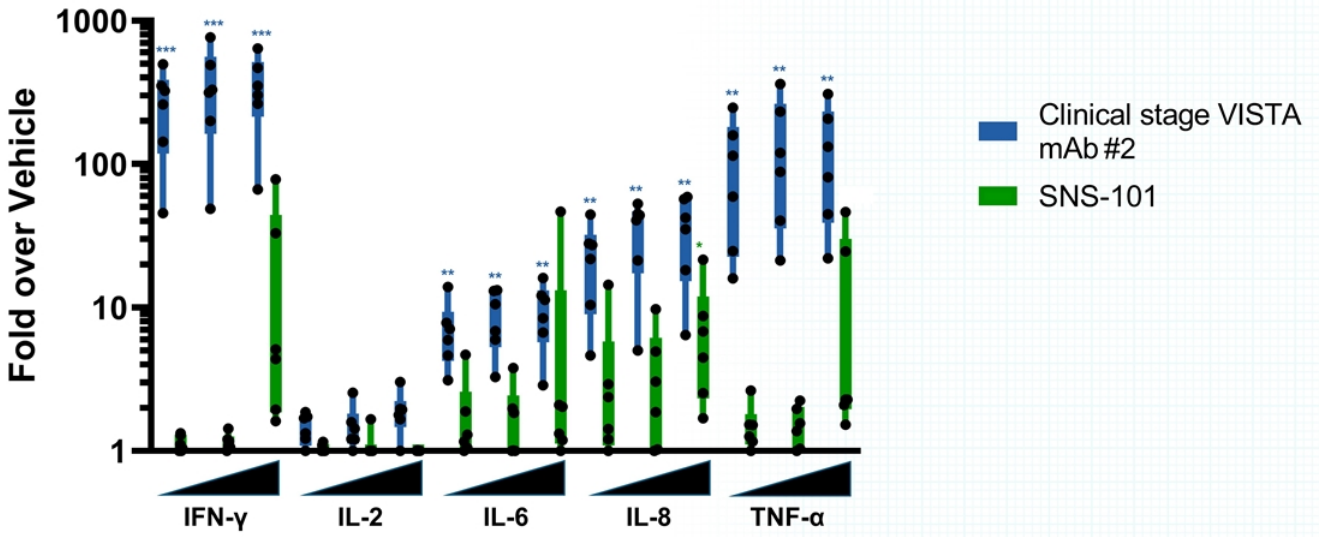
SNS-101 Induced Substantially Lower Cytokine Release in Whole-blood Assay at Neutral pH Compared to pH-independent VISTA Antibody

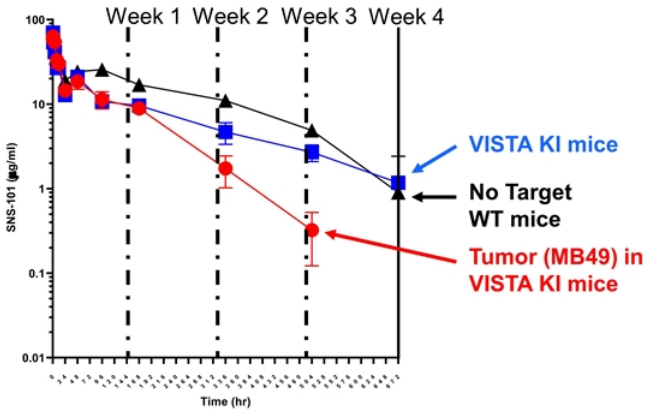


Dose ranges: 1, 10, and 100 ug/ml

Paired Student's t-test, Holm-Sidak Post-Hoc Analysis,
* p<0.05; ** p<0.01, *** p<0.001, **** p<0.0001

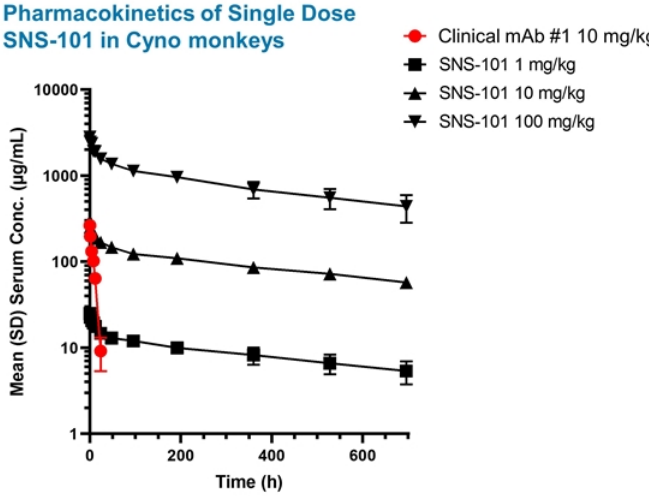
SNS-101 Has Displayed a Favorable PK Profile in Preclinical Studies
No Significant TMDD in Human VISTA KI Mice or Single-dose Cyno Monkeys

Pharmacokinetics of Single Dose 5 mg/kg SNS-101 in VISTA Knock-in Mice



Demonstrated a long mean residence time in the blood, indicating a lack of significant target-mediated drug disposition (TMDD) and clearance in non-malignant tissues

Pharmacokinetics of Single Dose SNS-101 in Cyno monkeys



SNS-101 displays linear elimination kinetics (compared to a pH-independent anti-VISTA mAb, which demonstrates TMDD and rapid clearance)

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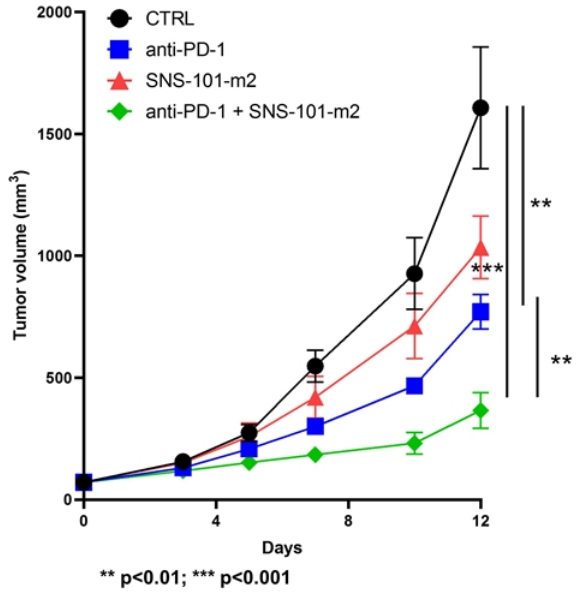
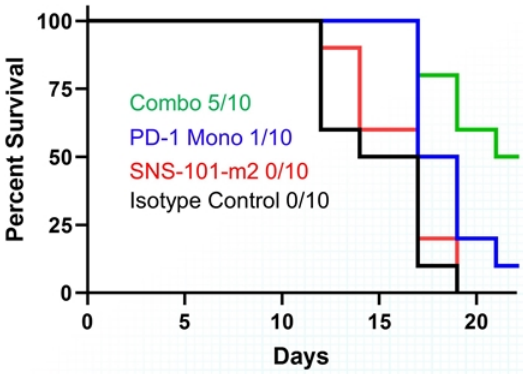
SNS-101 Demonstrates Strong Combinatorial Activity with Anti-PD-1 in MC38 Model in Human VISTA Knock-in Mice

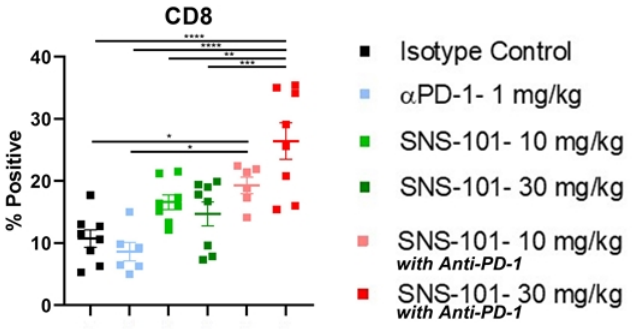


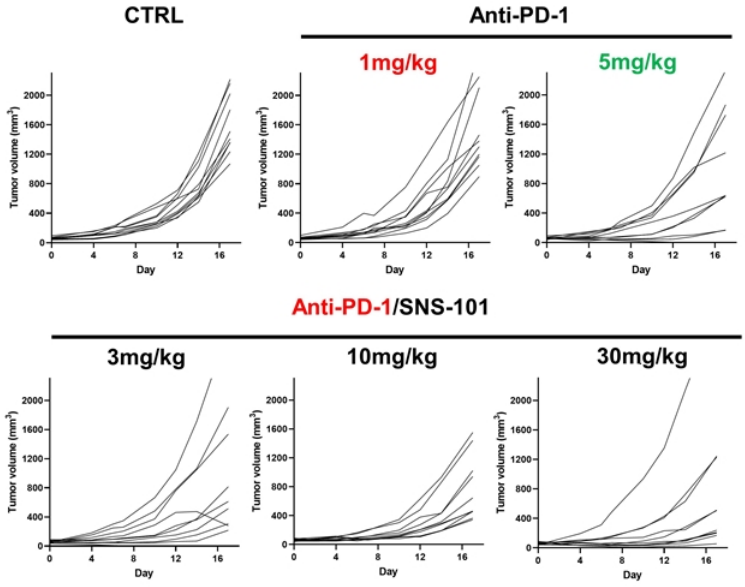
** p<0.01; *** p<0.001



SNS-101 Demonstrates Increased CD8 T-cells in Combination With Anti-PD-1

Frequency of Live, CD45+ Population
One-way ANOVA, Tukey Post-Hoc Analysis,
*** p<0.05; ** p<0.01, *** p<0.001, **** p<0.0001**





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Key to Unlocking the Power of VISTA

1. Block the pH-dependent binding of VISTA to PSGL-1 on T cells at low pH
2. Selectively bind VISTA at low pH to avoid:
   - target mediated drug disposition (TMDD)
   - on-target/off-tumor side effects
3. Utilize an Fc-competent IgG backbone to engage and activate FcɣR on tumor-infiltrating myeloid cells

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SNS-101 Is a Differentiated Anti-VISTA Antibody

TMAb Platform

	SNS-101 sensei BIO	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	No
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	Phase I
Clinical Data / Notes	• Demonstrated activity in preclinical models • Demonstrated potential for best-in-class safety profile and PK in mouse model • IND-enabling studies underway	• N/A	• N/A	• 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 • Phase I ongoing	• Not published	• Not published

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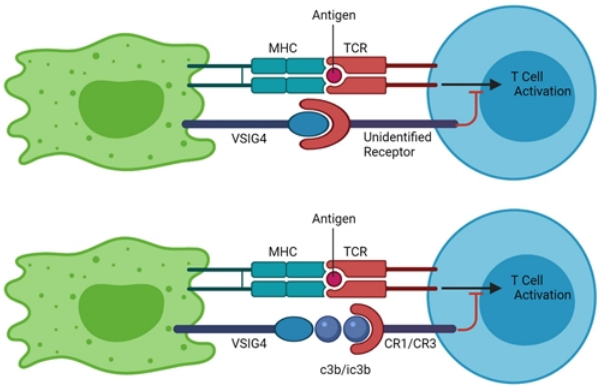
Johnston et al, Nature, 2019; Kineta website; Snyder et al, AACR Annual Meeting 2016; Pierre Fabre website; Hummingbird website; Thakkar et al, J of Immunother Cancer, 2022

VSIG4 is an Immunosuppressive Receptor Expressed on Tumor-associated Macrophages

We believe that VSIG-4 is best targeted through a TMAb-based approach as high Kupffer cell expression appears to drive significant target-mediated drug disposition (TMDD) and clearance in the liver



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

- B7 family related protein, also known as cRiG (complement receptor Immunoglobulin)
- Expressed primarily on macrophages, including tumor-associated macrophages (TAMs) and Kupffer cells
- VSIG-4 correlates with "M2" macrophages infiltration and poor prognosis in multiple tumor types
- Important role in phagocytosis of complement-opsonized pathogens, particularly by Kupffer cells
- Strong inhibitor of T-cell activation
- VSIG4 knock-out mice demonstrate inhibited tumor growth in a syngeneic Lewis lung carcinoma model

See references in Appendix

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Sensei Has Identified pH-sensitive VSIG4 Antibodies

- As of August 2022, Sensei has:
  - Identified 8 parental antibodies for further optimization;
  - Identified novel VSIG4 receptors on primary T-cells by Hi-Res proteomics, which are currently in verification stage;
  - Identified pH-sensitive antibodies highlighting the potential breadth of the TMAb platform
- Plan to select product candidate & initiate IND-enabling studies in 2023

pH-Sensitive VSIG4 Parental Antibodies Selected for Further Optimization

Antibody Reference #	Ratio of pH Selectivity (6.0 vs 7.4)	Blockage of Immobilized VSIG4-T-cell Inhibition	Blockage of Cellular VSIG4-T-cell Inhibition
1	1	+	+
2	7	+	+
3	1	+	+
4	3	+	+
5	3	+/-	+
6	25	+	+
7	1	+	+
8	2	-	+

P.F.; poor fit; N.B; not binding,

*** Ratio assessed by flow cytometry on VSIG4 overexpressing cells**

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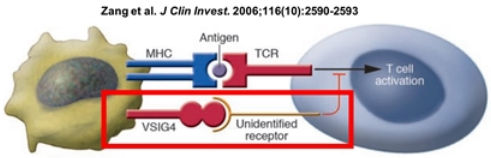
Cell Surface Expressed VSIG-4 Suppresses Primary Human T-cell Activation



Cryopreserved PBMCs

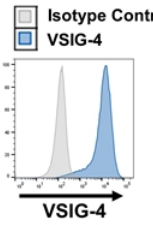
CD4+ T cell Purification

Activation-induced Expansion

Cell Isolation

No Stimulation Control
αCD3 + αCD28

1) HEK
2) HEK VSIG-4

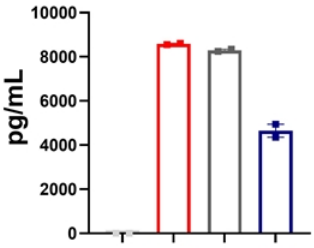


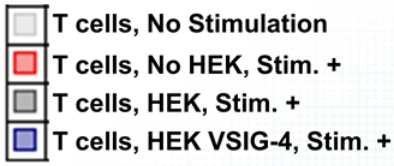
Day 3 → IFNγ

Day 4 → Proliferation

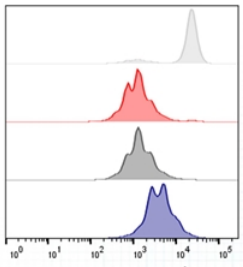
➢ 3/3 Donors Responsive

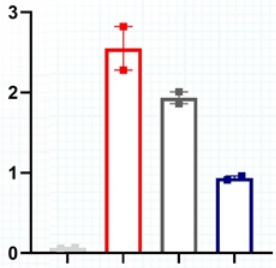
Day 3- IFNγ Production





Day 4- Proliferation





Donor 2111403021(CE000730

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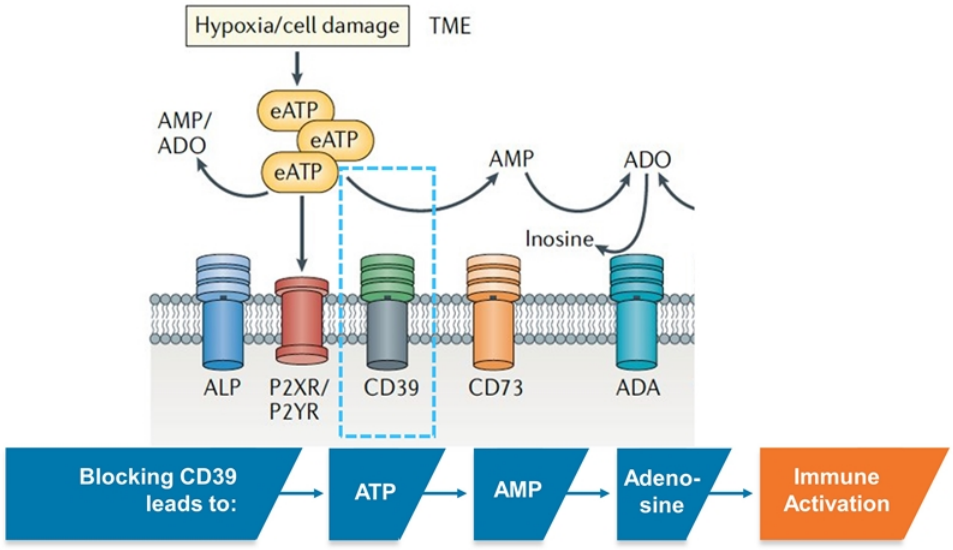
ENTPDase1 (CD39) is the Rate Limiting Enzyme in the Production of Immunosuppressive Adenosine



- Primary function is conversion of extracellular ATP / ADP to adenosine, which exerts immunosuppressive properties through binding to A2a/A2b receptors
- Expressed on various immune cells in both tumors and normal tissues
- Development of a TMAb antibody has potential for improved safety and PK profile compared to competitor CD39 mAbs
- First set of parental antibodies expected August 2022

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Figure adapted from: Moesta et al, *Nat Rev Immunol.* 2020; 20 (12)

Expected Program Milestones

SNS-101 (anti-VISTA)
- **1H 2023:** Multi-dose Non-Human Primate (NHP) PK & Toxicology data
- **1H 2023:** IND filing

SNS-102 (anti-VSIG4)
- **2023:** Select product candidate / initiate IND-enabling studies

SNS-103 (anti-ENTPDase1/CD39)
- **2023:** Select product candidate

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Proven Team With Deep Experience

John Celebi, MBA
President and CEO

Patrick Gallagher
Chief Business Officer

HansPeter Waldner, Ph.D.
SVP, Cancer Immunology

Robert Pierce, M.D.
Chief R&D Officer

Elisabeth Colunio
VP, Human Resources

Christopher Gerry, J.D.
VP, General Counsel

Erin Colgan
Chief Financial Officer

Edward van der Horst, Ph.D.
SVP, TMAb Antibodies

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Appendix

References for Slide 19

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