# Early Safety and Efficacy of a Phase 1/2 Open-Label, Multi-Center Trial of SNS-301 Added to Pembrolizumab in Patients with ASPH+ Locally Advanced Unresectable or Metastatic/Recurrent Squamous Cell Carcinoma of the Head and Neck


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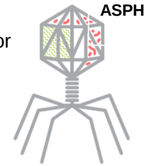
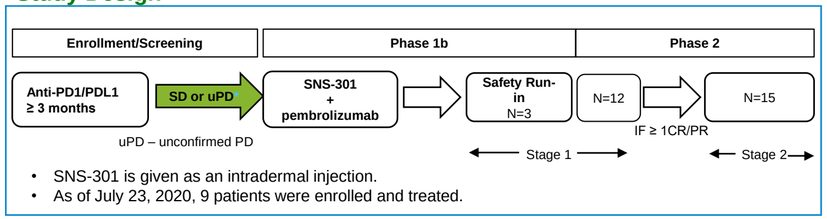
## BACKGROUND

- Efficacy of anti-PD-1/PD-L1 therapy (anti-PD1/PDL1) is attributed to the presence of infiltrating antigen-specific CD8+ T-cells which may explain the low response rates (13-18% post-platinum) in squamous cell carcinoma of the head and neck (SCCHN) which often present with immune desert or excluded tumors.
- Combining anti-PD1/PDL1 with agents that generate or expand anti-tumor T-cells such as vaccines are imperative.
- SNS-301 is a first-in-class and self-adjuvanted bacteriophage-based immune-activating vaccine targeting human aspartate β-hydroxylase (ASPH), a tumor associated antigen commonly overexpressed in cancer.




## METHODS

### Study Design




- SNS-301 is given as an intradermal injection.
- As of July 23, 2020, 9 patients were enrolled and treated.

### Study Objectives

The study aims are to evaluate safety, tolerability, and anti-tumor activity, as well as, immune responses and tumor/immune biomarkers.

### Tumor and Blood Analyses

- Tumor tissue is provided pre, on-treatment and at PD (optional) to characterize the tumor microenvironment using Nanostring™ & multiplex immunohistochemistry.
- Blood samples are collected to evaluate B and T cell responses using ELISA, ELISPOT and flow cytometry.

### Patient Characteristics

| Characteristics | % (N=9) |
|---|---|
| **Age** mean (range) | 63.6 (57-69) |
| **Male/Female** | 89/11 |
| **ECOG** 0/1 | 22.2/ 77.8 |
| **HPV** | |
| pos | 44.4 |
| neg | 44.4 |
| unknown | 11.1 |
| **PD-L1** | |
| pos | 44.4 |
| neg | 11.1 |
| unknown | 44.4 |
| **Prior lines systemic tx** | |
| 1 | 33.3 |
| 2 | 33.3 |
| ≥ 3 | 33.3 |
| **Ongoing anti-PD-1/PD-L1 tx** median (range) | 37 weeks (20-101) |
| **Metastatic Stage** | |
| MX | 11 |
| M0 | 78 |
| M1 | 11 |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SENSEI BIOTHERAPEUTICS

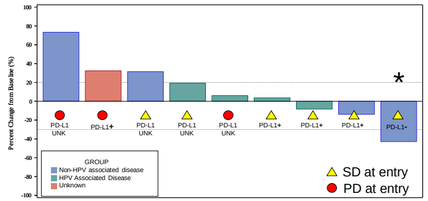
## RESULTS – SNS-301 + PEMBROLIZUMAB

### Safe and Well-Tolerated

| Overall (N=9) | | |
|---|---|---|
| Related Events | All Grades (%) | Grade 3-4 (%) |
| At least one TEAE | 55.6 | 11.1 |
| Dehydration | 11.1 | 11.1 |
| Hypomagnesaemia | 11.1 | - |
| Erythema | 11.1 | - |
| Pruritus | 11.1 | - |
| Fatigue | 11.1 | - |
| Injection site pain | 11.1 | - |
| Headache | 11.1 | - |

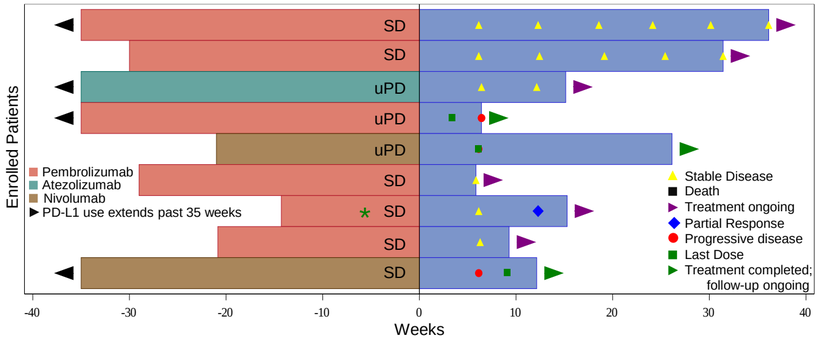
- No DLTs and mostly Grade 1-2 unrelated adverse events (AE).

### Tumor Regressions Observed



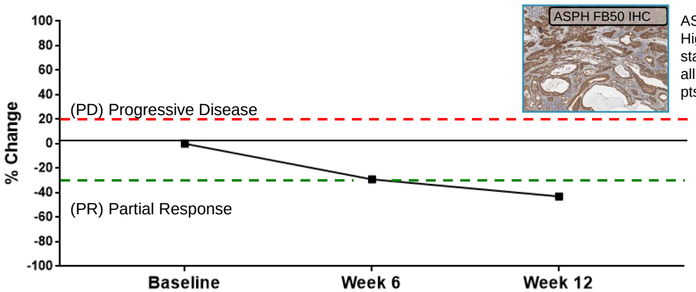

- **Disease control observed in 6 of 9 patients (67%).**
- Tumor regressions observed regardless of PD-L1 or HPV status.
- *PR observed in patient with **PD-L1$^{NEG}$** tumor

### Encouraging Clinical Activity in Pts with SD or uPD on Prior Anti-PD1/PDL1




### PR (-43%) Achieved in PD-L1$^{NEG}$ Tumor with SD on Anti-PD1/PDL1*

- 69 yo woman diagnosed with HPV$^{NEG}$ and PD-L1$^{NEG}$ T2N0M0 laryngeal cancer May 2019.
- Cancer therapy: IMRT (2-54 Gy) and carboplatin/paclitaxel (PR).
- At study entry treated with pembrolizumab for > 3 months (SD).

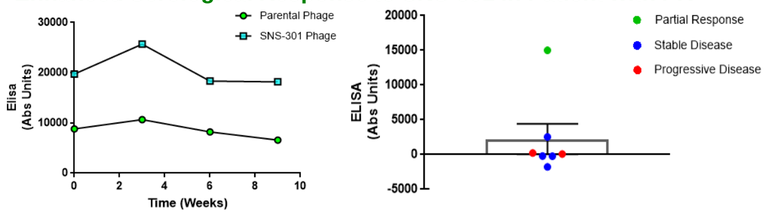






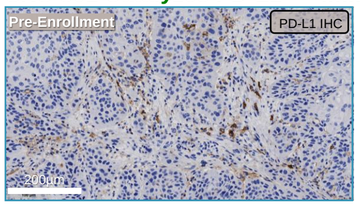
ASPH IHC: Highly positive staining in PR pt & all other screened pts (29/29).

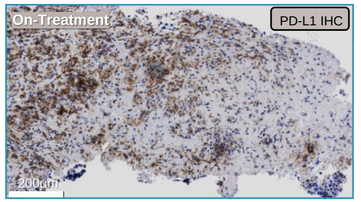
### Enhanced Serological Response to SNS-301 in Patient with PR*

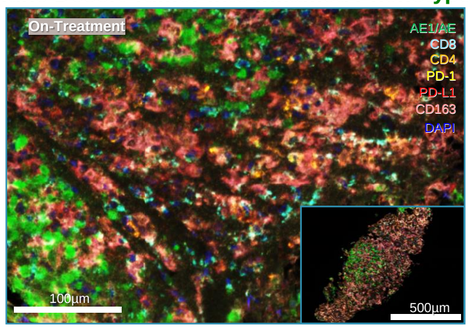



Patient with PR experienced increased SNS-301 response (normalized as change from parental phage response) at week 3 compared to patients with SD or PD.

### SNS-301 Catalyzes PD-L1$^{NEG}$ Immune Desert Tumor into Inflamed Phenotype




FFPE H&N samples from PR* were stained with anti-PD-L1 (left panels) and sequentially with a 6-component immuno-phenotyping panel (right) with AE1/AE3, CD8, CD4, PD-1, PD-L1, and CD163 and DAPI as a nuclear counterstain.

## CONCLUSIONS

- All screened patients stained highly positive for ASPH.
- The combination of SNS-301 and pembrolizumab is safe and well tolerated.
- Encouraging clinical activity was observed with PR in a pt with PD-L1$^{NEG}$ tumor, SD in a pt with uPD at study entry and long-lasting (> 6 month) SD in 2 pts.
- Pt with PR shows an elevated response to SNS-301 phage in serum.
- Translational data suggest cellular and humoral responses to SNS-301, including conversion from poorly to highly inflamed tumor in pt with PR.
- Given the observed clinical activity enrollment will continue to 30 pts.