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Preliminary analysis of a phase I study of SNK01 (Autologous Non-Genetically Modified Natural Killer Cells With Enhanced Cytotoxicity) monotherapy in patients with advanced solid tumors.

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BACKGROUND

- Natural Killer (NK) cells play a key role as the main effector cells toward cancer in innate immunity.
- Autologous adoptive transfer of ex vivo activated NK cells has been challenging to achieve universally, especially when trying to expand and activate NK cells derived from diseased or heavily pre-treated patients.
- SNK01 is a first-in-kind, autologous non-genetically modified NK cell product with significant anti-tumor cytotoxicity and greatly enhanced activating receptor expression of CD16, NKG2D, NKp46, DNAM-1 that can be consistently and equally produced from heavily pre-treated cancer patients and healthy donors alike.
- SNK01 has been found to have strong activity against both solid and liquid tumors preclinically.

PATIENTS & METHODS

In this Phase I dose escalation study (NCT03941262), SNK01 was administered intravenously weekly for 5 consecutive weeks using a 3+3 design in patients with advanced solid tumors.

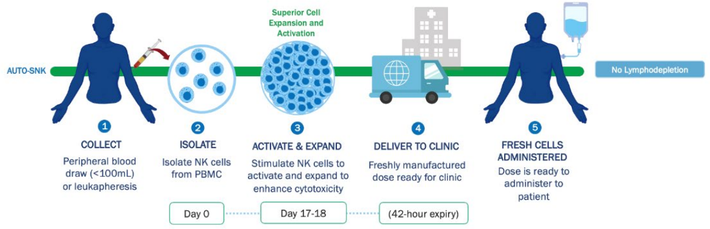
The starting dose was 1 x 10^9 SNK01 cells and the highest dose was 4 X 10^9 SNK01 cells.

OUTCOME MEASURES

Primary Endpoint: Safety

Secondary Endpoint: ORR via RECIST v1.1

Autologous SNK Cell Therapy



RESULTS

Patient Population

- 10 patients with advanced refractory solid tumors were enrolled
- Median age is 50 (range 32 – 75)
- 6 patients were male
- Patients had a median 5.5 lines of prior therapy (range 2 – 10)

Safety

- Of the total 50 doses administered, only two grade 1 adverse events were reported (fatigue)
- The treatment was well tolerated throughout the trial
- No dose-limiting toxicity (DLT) was observed

Efficacy

- Best objective response of stable disease (SD) was demonstrated in 6 patients
- Of the 4 patients who progressed in the dose escalation cohorts, all reported an overall improvement in the quality of life
- Based on this improvement, all but one patient then became eligible to be treated with additional chemotherapy to which some showed additional response

Subject #	BMI	Age	Stage at Screening	Cancer Dx	Dose in Billions	# Prior Tx	Toxicity	Week 5	Week 9 (EOS)
001	24.1	75	IV	Myxoid Chondrosarcoma	1B	10	0	NE	NE
002	18.7	65	IV	NSCLC	1B	6	0	SD	SD*
003	31.3	32	IV	Small Round Cell Sarcoma	1B	5	0	SD	SD
004	21.3	46	IV	Leiomyosarcoma	1B	6	0	SD	SD
005	22.7	57	IV	Colorectal	2B	3	0	SD	PD
007	21.1	62	III	Uterine Sarcoma	2B	4	0	SD	SD
008	30.9	54	IV	Synovial Cell Sarcoma	2B	2	0	SD	PD
009	53.3	45	IV	Angiosarcoma	4B	9	0	SD	SD
010	40.2	38	IV	Leiomyosarcoma	4B	4	0	SD	PD
011	25.4	43	IV	Chondrosarcoma	4B	7	0	SD	SD

SD: Stable Disease PD: Progressive Disease NE: Not Evaluable

* Subject was stable disease through Week 6 and subsequently withdrew from the study

Table 1. Patient Characteristics, Response, and individual PFS (weeks)

CONCLUSIONS

- SNK01 was safe and did not require lymphodepletion.
- SNK01 could be consistently produced from heavily pre-treated cancer patients with high cytotoxicity and activating receptor expression.
- SNK01 appears to have some activity against heavily pre-treated solid tumors and may sensitize tumors to additional chemotherapy.

FIGURE 1. Average increased cytotoxicity of SNK01

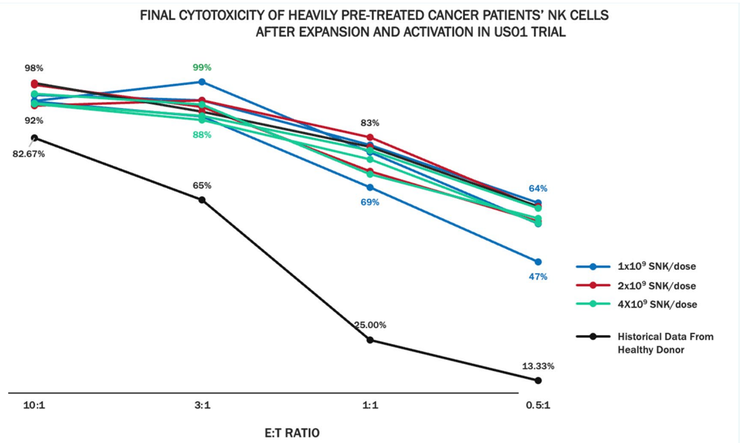
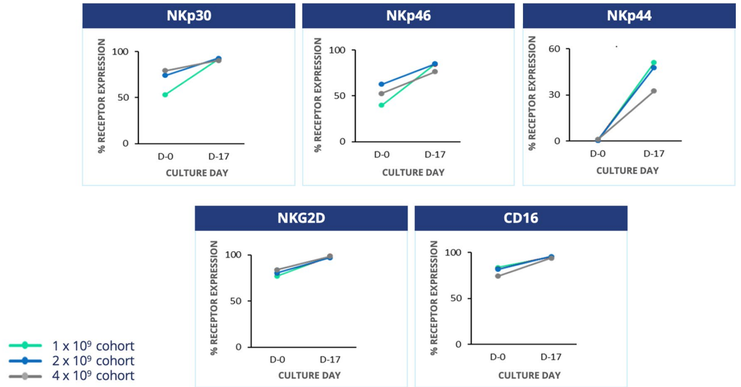


FIGURE 2. Average activating receptor expression improvement of SNK01



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