Topline safety and efficacy update of SUPLEXA-101, a First-in-Human, Single Agent Study of SUPLEXA Therapeutic Cells in 28 Patients with Metastatic Solid Tumors

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Background

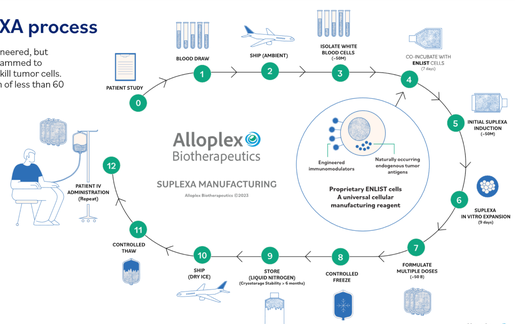
SUPLEXA therapeutic cells are an autologous cellular therapy comprised of highly activated PBMC-derived white blood cells. SUPLEXA cells are broadly cytolytic against a variety of tumor cell lines *in vitro*, while showing no adverse impact on normal resting peripheral blood mononuclear cells (PBMC). SUPLEXA cells express the hallmark features of antigen presenting cells and are immunomodulatory as evidenced by dramatic changes in blood composition following administration.

This first-in-human (FIH) **Phase 1 open-label study** is a non-comparative, open label, single-agent, survey study designed to assess the safety, tolerability, and preliminary clinical efficacy of repeated intravenous (IV) infusions of SUPLEXA monotherapy in subjects with various measurable metastatic solid tumors and haematologic malignancies. As a single–agent study, no chemotherapeutic preconditioning, cytokine supportive or immune checkpoint inhibitors were used.

SUPLEXA manufacturing

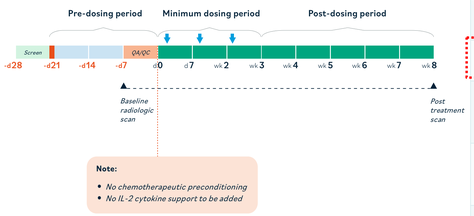
SUPLEXA process

These not engineered, but rather reprogrammed to recognize and kill tumor cells. Simple infusion of less than 60 min per dose.



Study Design

This poster reports on SUPLEXA-101 Part A, the first 28 patients with histologically or cytologically confirmed measurable solid tumors, radiographically confirmed as Stage 2 to 4 cancer. All eligible subjects received a minimum of 3 weekly dose of SUPLEXA of approx. 2.5 billion cells per dose. At the discretion of the Investigator, Sponsor Medical Monitor and in agreement with the subject, additional SUPLEXA infusions were administered when available.



Objectives	Endpoints
Primary	
To assess safety and tolerability of SUPLEXA in subjects with malignant solid tumor and haematologic malignancies.	• Incidence of dose limiting toxicities (DLTs) • Incidence of adverse events (AEs), and serious adverse events (SAEs) overall, by severity, by relationship to each study intervention, and those that led to discontinuation of study intervention.
Secondary	
To assess the efficacy of SUPLEXA as assessed by the Investigator based on response evaluation criteria in solid tumors (RECIST) v1.1	• Objective response rate (ORR) defined as the proportion of subjects with best overall response (BOCR) of either a CR or PR • Time to Progression (TTP).
Exploratory	
Exploratory efficacy outcomes	• Duration of Response (DOR) • Time to Response (TTR) • Clinical Benefit Rate (CBR) defined as CR+PR+SD. • Progression-free Survival (PFS). • Overall Survival (OS). • Solid tumours cohort: Change in plasma biomarkers.
To evaluate anti-tumor activity of SUPLEXA by based on modified RECIST v1.1 for immune based therapeutics (iRECIST)	• iORR, iPFS, iDOR, iDCR
To evaluate changes in disease biomarkers following treatment with SUPLEXA from blood.	• Change from baseline in the following pharmacodynamic assays, including but not limited to whole blood immune cell phenotyping (e.g., PBMC count and composition and select flow cytometric analysis). See Abstract 381

Patient Specific Characteristics and Early Outcomes

TABLE 1- patient demographics

As of the data cut off 28 patients were administered three SUPLEXA doses. Patients age median was 64.5 (11SD). Males (43%) and females (57%); all ECOG 0-1. At screening were stage IV with a median of 48 months (60 SD) since initial diagnosis with chemotherapy (20/28), immunotherapy (14/28) and other (12/28).

Patient Number	Age/ Gender	Tumor Type	Stage at Screening	Metastasis Locations	Previous Lines of Treatment
0101	M / 56	Anal	IV	Lung, Rectum, Lymph Node, Bone	• Surgery (3) • Radiation (2) • Anti-tumor (6)
0102	F / 60	Ovarian	IV	Liver, Lymph Node	• Surgery (2) • Anti-tumor (9)
0104	F / 34	Ovarian	IV	Lung, Ovary, Rectum, Lymph Node	• Surgery (3) • Anti-tumor (5)
0106	F / 48	Cervical	IV	Lung	• Surgery (1) • Radiation (1) • Anti-tumor (1)
0107	F / 64	Pancreatic	IV	Lung, Spleen, Lymph Node, Ascites, Peritoneum	• Surgery (1) • Anti-tumor (5)
0109	M / 75	Thymic	IV	Lung, Pleura, Mediastinum, Lymph Node	• Surgery (1) • Radiation (2) • Anti-tumor (6)
0110	M / 58	Renal	IV	Lymph Node	• Anti-tumor (2)
0111	F / 62	Colorectal-MSI-H	IV	Peritoneum	• Surgery (1) • Anti-tumor (3)
0112	M / 64	Melanoma	IV	Peritoneum, Lung, Intramuscular	• Surgery (1) • Radiation (1) • Anti-tumor (2)
0113	M / 71	Renal	II	Lung, Bone	• Surgery (1)
0114	F / 69	Breast	IV	Liver, Lymph Node	• Radiation (1) • Anti-tumor (3)
0115	M / 81	Lung	IV		• Radiation (1) • Anti-tumor (1)
0116	F / 76	Liver	IV	Liver, Lymph Node	• Surgery (1) • Anti-tumor (3)
0117	F / 61	Colorectal-MSI-H	IV	Lymph Node	• Surgery (1) • Anti-tumor (3)
0118	M / 64	Renal	IV	Lung, Bone, Peritoneum	• Surgery (1) • Radiation (2) • Anti-tumor (3)
0201	F / 45	Ureteric	IV	Pelvis	• Surgery (1) • Radiation (3) • Anti-tumor (5)
0202	F / 75	Endometroid carcinoma	IV	Lung, Liver, Lymph Node	• Surgery (3) • Radiation (4) • Anti-tumor (7)
0203	F / 70	Ovarian	IV	Omentum, Peritoneum	• Surgery (5) • Anti-tumor (9)
0204	F / 58	Ovarian	IV	Omentum	• Surgery (3) • Radiation (1) • Anti-tumor (8)
0205	M / 78	Ureteric	IV	Lung, Peritoneum	• Anti-tumor (2)
0207	F / 47	Cervical	IV	Lymph Node	• Surgery (1) • Radiation (4) • Anti-tumor (9)
0209	F / 69	Colorectal-MSS	IV	Lung, Liver	• Surgery (3) • Radiation (1) • Anti-tumor (4)
0212	M / 70	Colorectal-MSS	IV	Peritoneum	• Surgery (3) • Anti-tumor (6)
0215	M / 76	Melanoma	IV	Lung, Lymph Node	• Surgery (1) • Anti-tumor (2)
0301	M / 63	Melanoma	IV	Liver, Lymph Node	• Surgery (1) • Anti-tumor (2)
0302	F / 60	Lung	IV	Lung, Lymph Node	• Surgery (4) • Anti-tumor (1)
0303	M / 55	Renal	IV	Lung, Lymph Node	• Surgery (3) • Radiation (1) • Anti-tumor (2)

TABLE 2A and 2B – Safety

2A: No related SAE

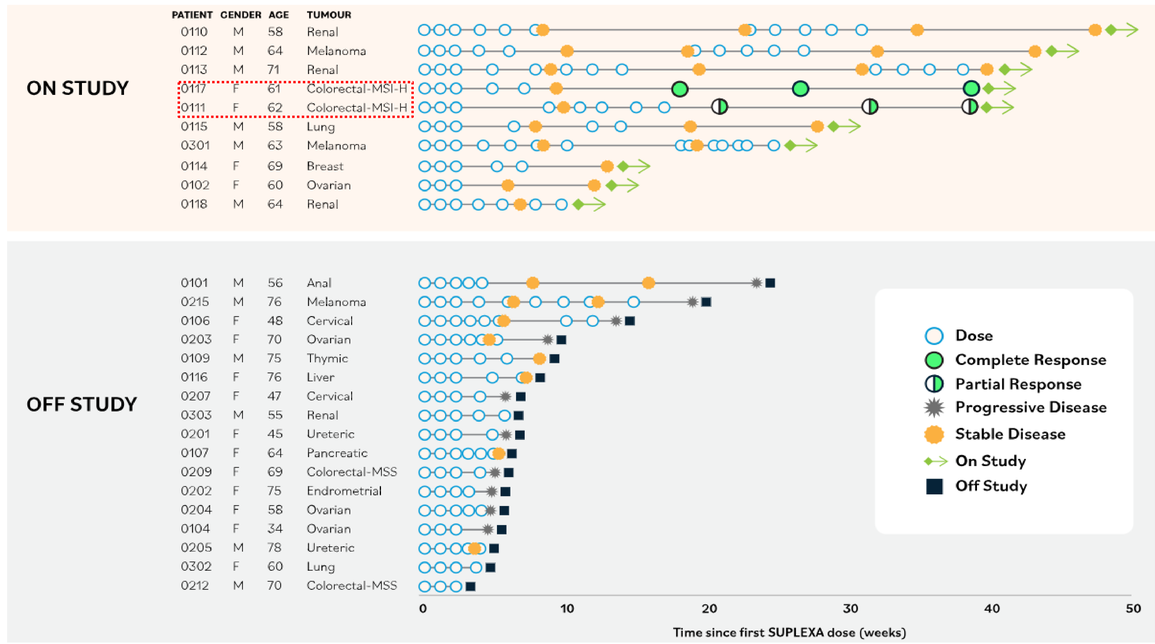
	SAE Verbatim	SAE Duration	SAE Reason	Relationship
0104	Bowel obstruction	9 days	Hospitalization	Not Related (NR)
0202	Astrovirus infection	7 days	Hospitalization	NR
	Lower back pain	7 days	Hospitalization	NR
	Perirectal bleeding	25 days	Hospitalization	NR
0203	Ascites worsening	6 days	Hospitalization	NR
0205	Pulmonary embolism	1 day	Hospitalization (fatal)	NR
0303	Dyspnoea	38 days	Hospitalization (fatal)	NR

2B: most TEAE were mild to moderate and only 10% considered related

	Solid Tumors (N=28) n (%) m
Number of Participants Reporting at least:	
Any TEAEs	20 (71.4%) 111
Any Dose Limiting Toxicity (DLT) related TEAEs	0
Any severe TEAEs (Grade >=3)	5 (17.9%) 8
Any treatment related TEAEs	3 (10.7%) 7
Any serious TEAEs	5 (17.9%) 7
Any TEAEs leading to withdrawal from study treatment	2 (7.1%) 2
Any TEAEs leading to discontinuation from study	2 (7.1%) 2
Any TEAEs leading to death	2 (7.1%) 2
Number of Subjects Reporting TEAEs by Severity	
Mild (Grade 1)	18 (64.3%) 65
Moderate (Grade 2)	12 (42.9%) 38
Severe (Grade 3)	3 (10.7%) 5
Life Threatening (Grade 4)	1 (3.6%) 1
Fatal Outcome (Grade 5)	2 (7.1%) 2
Number of Subjects Reporting TEAEs by Relationship to Study Treatment	
Not Related	20 (71.4%) 104
Related	3 (10.7%) 7

FIGURE 1 Swimmers plot

ORR was seen in 2 patients with CR and PR in CRC, with majority of the patients attaining SD (60%) and an overall CBR of 68%



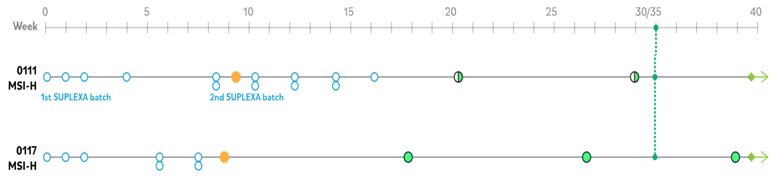


FIGURE 2 CRC

Patient 0111 was SD on chemo and immunotherapy and became a PR with SUPLEXA

Patient 0117 was PD on chemotherapy attaining a PR with PD-1 but a CR with SUPLEXA

Conclusions

- Primary endpoint achieved with no drug related adverse events.
- Secondary endpoint achieved with the demonstration of a CR and a PR in 2 of 2 mCRC-MSI-H patients, each with a treatment history of prior chemo and prior ICI.
- SUPLEXA-101 Part B will explore a combination of SUPLEXA and ICI

Acknowledgements

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