Interim Phase I Clinical Data of FT538, an Off-the-Shelf, Multi-engineered, iPSC-Derived NK Cell Therapy, Combined with Monoclonal Antibodies in Patients with Advanced Solid Tumors

Martin G. Gutierrez, MD; Megan J. Johnson, MD; David Somervill, MD; Wells Mammen, MD; FACG; FACOS; Hawa Mouh, MD; MHP; Mohammad Forghani, MD; Jason Chevallier, MD, PhD; Brandon Beale, PhD; Peter Stueb, PhD; Yu-Wae Chi, MD; Brandon Valerani, MD; Jeffrey Chou, MD, PhD; and David S. Hong, MD

1 Hackenback Medical Center, John Theurer Cancer Center, Hackensack, NJ; 2 Sarah Cannon Research Institute, Tennessee Oncology, PLLC, Nashville, TN; 3 Northeast Oncology, San Antonio, TX; 4 University of Colorado Cancer Center, Aurora, CO; 5 Win J. Steiman Cancer Center, Washington University in Saint Louis, MO; 6 University of Iowa Hospitals and Clinics, Holden Comprehensive Cancer Center, Iowa City, IA; 7 University of Miami, James Graham Brown Cancer Center, Louisville, KY; 8 TheraP, Inc., San Diego, CA; 9 University of Texas MD Anderson Cancer Center, Houston, TX

BACKGROUND

Patients with advanced solid tumors have historically been challenging to treat. Novel approaches such as off-the-shelf multi-engineered cellular therapies that can be delivered in a timely manner without sacrificing efficacy may offer a novel way of delivering tumor-targeted immunotherapies.

METHODS

FT538 Phase I Study

- **Study Design:** Dose escalation in 21-day cycles with 8 patients per dose level. Dose escalation halted if 2 of 8 or more DLTs were observed.
- **Dosing Regimen:** FT538 administered as a single intravenous push for one cycle-
- **Patients:** All 8 patients were heavily pre-treated with a median of 3 prior lines of therapy. All patients had at least 2 prior chemotherapy regimens and 6 patients had prior targeted therapy.
- ** eligibility:** Measurable disease by RECIST, performance status of 0-2, expected life ≤1 year.
- **Treatment:** FT538 100 Million Cells/Dose + mAb.
- **Safety Endpoints:** DLTs, SAEs, or Grade ≥3 AEs reported, and dose escalation continues at 300 million cells/dose.
- **ClinicalTrials.gov Number:** NCT05069935

RESULTS

- **Patient No.** 1
  - **Patient Age:** 61 / F
  - **Disease:** Colon Cancer
  - **Best Response:** SD
  - **Reason for Discontinuation:** Safety

- **Patient No.** 2
  - **Patient Age:** 69 / F
  - **Disease:** Colon Cancer
  - **Best Response:** SD
  - **Reason for Discontinuation:** Safety

- **Patient No.** 3
  - **Patient Age:** 77 / M
  - **Disease:** Extramammary Paget Disease
  - **Best Response:** SD
  - **Reason for Discontinuation:** Safety

- **Patient No.** 4
  - **Patient Age:** 65 / F
  - **Disease:** Colon Cancer
  - **Best Response:** SD
  - **Reason for Discontinuation:** Safety

- **Patient No.** 5
  - **Patient Age:** 63 / F
  - **Disease:** HNSCC
  - **Best Response:** SD
  - **Reason for Discontinuation:** Safety

- **Patient No.** 6
  - **Patient Age:** 65 / F
  - **Disease:** Colon Cancer
  - **Best Response:** SD
  - **Reason for Discontinuation:** Safety

- **Patient No.** 7
  - **Patient Age:** 61 / M
  - **Disease:** Extramammary Paget Disease
  - **Best Response:** SD
  - **Reason for Discontinuation:** Safety

- **Patient No.** 8
  - **Patient Age:** 64 / F
  - **Disease:** Colon Cancer
  - **Best Response:** SD
  - **Reason for Discontinuation:** Safety

Patient Case Study

Image source of patient 1: J. Cole, MD, Director of Hematology/ Oncology at Mayo Clinic, Rochester, MN, USA. 2) 77-year-old male diagnosed with metastatic extramammary Paget disease that failed initial surgical control and with extremities involved by disease. 3) Treatment: 2 cycles (3 doses) of FT538 at 100 million cells/dose in combination with trastuzumab was well tolerated, with no grade 3 or 4 AEs or DLTs, and no febrile neutropenia or graft-versus-host disease (GvHD) were observed.

CONCLUSIONS AND FUTURE DIRECTIONS

- **Patient 1:** Available for radiographic assessment. Patient achieved a best response of PR 6 days after receiving 2 cycles (6 doses) of FT538 at 100 million cells/dose in combination with trastuzumab. This response was maintained with no signs of disease progression at 12 months.
- **Patient 2:** Available for radiographic assessment. Patient demonstrated partial response (PR) after receiving 2 cycles (3 doses) of FT538 at 100 million cells/dose in combination with trastuzumab. This response was maintained with no signs of disease progression at 12 months.
- **Patient 3:** Available for radiographic assessment. Patient demonstrated stable disease (SD) after receiving 2 cycles (3 doses) of FT538 at 100 million cells/dose in combination with trastuzumab. This response was maintained with no signs of disease progression at 12 months.
- **Patient 4:** Available for radiographic assessment. Patient demonstrated stable disease (SD) after receiving 2 cycles (3 doses) of FT538 at 100 million cells/dose in combination with trastuzumab. This response was maintained with no signs of disease progression at 12 months.