INTRODUCTION

The T-cell antigen coupling (TAC) is a novel, proprietary chimeric receptor that facilitates the re-direction of T-cells to tumor cells and activates T-cells by co-opting the endogenous T-cell receptor complex, with the goal to elicit a safe and durable anti-tumor response. In preclinical models, cancer TAC-engineered T-cells effectively eradicate tumor cells in vitro and in vivo without TAC-related toxicities.

TAC-T 21C/T47M53 is an open-label, multicenter phase 1/2 study that aims to establish safety, maximum tolerated dose (MTD), recommended phase 2 dose (RP2D), pharmacodynamic profile, and efficacy of TAC-T-HER2 in patients with HER2-positive solid tumors (i.e., breast, lung, pancreatic, colorectal, gastric, endometrial, ovarian, and others) whom have progressed on prior anti-cancer therapies.

We present a clinical update from Cohorts 1 & 2 (8 participants) that highlights safety and efficacy data; the study further elucidates potential therapeutic impact to patients with HER2 overexpressed solid tumors.

TAC01-HER2 SCIENCE

**Key features of TAC01-HER2 technology**

- **TAC01-HER2** Barents independence of MHC

- **TAC01-HER2** requires endogenous TCR for T cell activation

- **TAC01-HER2** incorporates the co-receptors and recruits the TCR complex, mediating normal T cell activation

**Lymphodepleting Chemotherapy:** 3 consecutive days of fludarabine (Flu) IV (30 mg/m²) administered on days 1, 2, & 3; day 4 initiation of TAC01-HER2 (cohort 1: 3+1, cohort 2: 2+1) with fluoro-deoxy-glucose (FDG) PET/CT imaging (optional).

**Phase I Trial Enrollment**

Primary Eligibility

Cohort 1 & 2: Demographic & Tumor-Intrinsic Characteristics

- **Median Age**
  - Cohort 1: 50.0 ± 10.0
  - Cohort 2: 50.0 ± 10.0

- **Sex**:
  - Male: Female (%) Cohort 1: 3 (37.5%): 5 (62.5%)
  - Male: Female (%) Cohort 2: 3 (37.5%): 5 (62.5%)

- **Race (%):**
  - White
  - Black
  - Asian
  - Other
  - Other (%) Cohort 1: 7 (87.5%)
  - Other (%) Cohort 2: 7 (87.5%)

- **ECOG PS (%):**
  - 0
  - 1
  - 2
  - 3
  - 1 (12.5%)
  - 7 (87.5%)

- **HER2 expression (%)**:
  - IHC 2+
  - IHC 3+
  - 0
  - 0
  - 0
  - 1 (12.5%)
  - 7 (87.5%)

- **Tumor Type (%):**
  - Breast Cancer
  - Other
  - Other (%) Cohort 1: 1 (12.5%)
  - Other (%) Cohort 2: 1 (12.5%)

- **Tumor Intrinsic Characteristics:**
  - HER2: 12 (100%)

- **Previous Anti-Cancer Therapy (Targeted)**
  - Patient 0203-0021
  - HER2: 2 lines

- **Previous Anti-Cancer Therapy (Monotherapy)**
  - Patient 0203-0021
  - HER2: 1 line

- **Antigen Binding Clinical Trial Sites and Apheresis Unit status:**
  - Princess Margaret Cancer Centre, The University of Chicago Medical Center, Dana Farber Cancer Institute, MD Anderson Cancer Center as well as the patients and their families.

**Safety Summary**

- No observed cytokine release syndrome (CRS) in Cohorts 1 & 2

- No observed Immune Effector Cell (IC) Uptake in Cohorts 1 & 2

- All serious adverse events (SAEs) were determined to be unrelated to TAC01-HER2 Infusions

**Biomarker Data: First Patient Response**

**HER2 Expression (%):**

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**Summary of Adverse Events by Incidence**

- No observed cytokine release syndrome (CRS) in Cohorts 1 & 2

**Phase I Safety Data**

**Safety summary**

- No observed cytokine release syndrome (CRS) in Cohorts 1 & 2.

**Biomarker Data: First Patient Response**

**HER2 expression (%)**

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**Trial Design & Manufacturing**

- Phase I: Dose escalation
  - Loxosome® eliminates several manufacturing steps

- Phase II: Dose expansion
  - Fully automated manufacturing & in-house formulation & filling
  - 28 days

**Trial Progress**

- Interim results from the Phase I TACTEC 02 study suggest that TAC01-HER2 is safe and tolerable, supported by the absence of DLTs and notable improvement in patient quality of life.

**Summary & Conclusions**

- Demonstrated early signals of clinical activity, highlighting a partial response in stage IV gastric cancer patients and a disease control rate of 75% in cohort 2.

**Efficiency: Dose Level 2 Response**

- Day 28 change in lesion size from baseline

**Tumor Regression: First Patient Response**

- Baseline
  - Day 0 (2.00 cm)

- Day 28
  - (1.75 cm)

**CONTACT: Sponsorship:**

- Interim results from the Phase I/II trial have been fully funded by Triumvirum Immunologics Inc.

**Eligibility + Efficacy + Summary**

- Interim results from the Phase I/II trial have been fully funded by Triumvirum Immunologics Inc.

**Safety:**

- DLTs, MTD

- Frequency

- Thrombocytopenia

- Discordance

**BIOMARKER DATA**

- Cytokine Data from Patient 0203-0021

- Confirmed to be unrelated to TAC01-HER2 Infusions

- Partial Response Observed in Patient 0203-0021

- 75% Baseline Disease Control Rate in Cohort 2

- Demonstrated early signals of clinical activity, highlighting a partial response in stage IV gastric cancer patients and a disease control rate of 75% in cohort 2.

**Efficacy:**

- Dose Level 2 (6-8 x 10^6 cells/kg)

- Day 28 change in lesion size from baseline

**SUPPORT:**

- The TAC01-HER2 trial was approved by the Institutional Review Board (IRB) and is registered at ClinicalTrials.gov (NCT04548802).

**REFERENCES:**


**ACKNOWLEDGEMENTS:**

- Clinical Trial Sites and Apheresis Unit staff: Princess Margaret Cancer Centre, The University of Chicago Medical Center, Dana Farber Cancer Institute, MD Anderson Cancer Center as well as the patients and their families.

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**TRIAL DESIGN & MANUFACTURING**

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**TRIAL PROGRESS**

- This trial is ongoing with further investigation of TAC01-HER2 in other solid tumors.

**Phases of Treatment:**

- Phase I: Dose 1
  - Cohort 1: Dose 1
  - Cohort 2: Dose 1

- Phase II: Dose 2
  - Dose 2 (6-8 x 10^6 cells/kg)

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**Contact:**

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