**Background**

- **MAGE-A10** is expressed in 90–95% of uveal melanomas, renal cell, and melanomas.
- **ADP-A2M10** SPEAR T-cells are genetically engineered autologous T-cells that express a high-affinity, TCR targeting MAGE-A10, in the context of HLA-A2.

**Objectives**

- **Primary**
  - To characterize safety and immunological activity of the ADP-A2M10 T-cell product

- **Secondary**
  - To assess efficacy of ADP-A2M10 T-cells in the treatment of patients with MAGE-A10+ solid tumors

- **Expanal**
  - To evaluate persistence of ADP-A2M10 T-cells in patients with MAGE-A10+ solid tumors

**Key Eligibility Criteria**

- **Inclusion Criteria**
  - Patients must have a history of symptomatic CNS metastases that have received treatment
  - Patients with untreated newly diagnosed MAGE-A10+ solid tumors
  - Patients with MAGE-A10+ with a history of symptomatic NSCLC metastases
  - Patients with MAGE-A10+ with a history of symptomatic renal cell carcinoma metastases
  - Patients with MAGE-A10+ with a history of symptomatic renal cell carcinoma metastases

- **Exclusion Criteria**
  - Patients must not have active immune disorders requiring chronic steroid use
  - Patients with a history of symptomatic CNS metastases must have received treatment
  - Patients with a history of symptomatic NSCLC metastases that have received treatment
  - Patients with a history of symptomatic renal cell carcinoma metastases that have received treatment

**Key Outcomes**

- **Safety**
  - Incidence of adverse events (AEs)
  - Incidence of serious adverse events (SAEs)
  - Incidence of grade ≥3 adverse events

- **Efficacy**
  - Incidence of objective responses
  - Incidence of clinical benefit
  - Incidence of progression-free survival

**Results**

- A total of 10 patients (2 male and 8 female) with renal cell and NSCLC metastases were treated (Table 1). Three patients were treated in DLT level 1; 7 patients were treated in DLT level 2. Two patients were treated in DLT level 3.

- The most frequently reported AEs ≥Grade 3 were lymphopenia, neutropenia, anemia, and fatigue (Table 2). No grade 5 events were reported.

- The most frequently reported SAEs were hypotension, decreased appetite, and thrombocytopenia (Table 2).

**Conclusions**

- **ADP-A2M10** SPEAR T-cells have shown acceptable safety and the evidence of toxicity related to off-target binding or alloreactivity.

- Given the minimal anti-tumor activity and the discovery that MAGE-A10 expression frequency overlaps with MAGE-A4 expression, the clinical program has closed.

- Several trials with **SPEAR** T-cells targeting MAGE-A4 are ongoing (https://clinicaltrials.gov/).