Demonstration of Anti-Tumor Immunity via Intratumoral Regulated Platform Ad-RTS-hIL-12 in Advanced Breast Cancer and Recurrent Glioblastoma Patients

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Study Design

A. recurrent Glioblastoma (ATI003-102)

- 3.0×10^7 Ad-RTS-hIL-12
- 30-40 mg V PO QDx15
- 6 patients

B. metastatic Breast Cancer (ATI003-001)

- 3.0×10^7 Ad-RTS-hIL-12
- 2 patients

Characteristics

- Ad-RTS-hIL-12: 3.0×10^7
- V: 20 mg PO QDx7

Safety

- No dose-limiting toxicity
- No cytokine release syndrome
- No pyrexia

Conclusions

- A clear abscopal effect was seen in breast cancer, as we previously reported in metastatic melanoma
- Immunofluorescence Studies
  - CD3+ cytotoxic T cells
  - DAPI (4′,6-diamidino-2-phenylindole) binds DNA and counterstains nuclei (blue)
  - glial fibrillary acidic protein (GFAP), a marker specific for astrocytic L1 markers in GBM supports a combination
- 10 patients with subsequent validation in multiple tumor types in monotherapy and in combination with immune checkpoint inhibitors. More information on ZIOPHARM’s Phase 1 trial can be found in the updated information.

InteRxon

- Sustained Intratumoral Production of Cytokines and Immune Cell Infiltrates in Both Breast and Brain Tumors

- Related Grade 3 AEs That Occurred in 6 or More Subjects
  - Lymphopenia
  - G3 (17%)  3 (23%) 0 (0%) 0 (0%)
  - G4 (17%)  0 (0%) 3 (23%) 0 (0%)
  - G5 (17%)  0 (0%) 0 (0%) 0 (0%)

- Grade IV (Glioblastoma)

- Related Serious Adverse Events (SAEs)
  - Cytokine release syndrome
  - Thromboembolic
  - Hypertension
  - Blood pressure

- Overall Response Rate (RECIST 1.1) in Metastatic Breast Cancer

- Subject Week 4 Week 12

- A 5 SD SD 0 (15%)
- B 5 SD SD 0 (15%)
- C 5 SD SD 0 (15%)
- D 5 SD SD 0 (15%)

- Metastatic Breast Cancer

- Grade 1

- B 0 0 0

- Grade 2

- B 0 0 0

- Grade 3

- B 0 0 0

- Grade 4

- B 0 0 0

- Conclusions

- All subjects showed detectable IL-12 and IFN-γ in a dose-dependent manner
- Following intratumoral injection, sustained tumor remodeling was observed with a well-tolerated toxicity profile including 10% G3 cytokine release syndrome
- A customizable promoter to which basal transcription proteins are recruited and the target gene is transcribed
- The RTS-Censored platform reduces systemic toxicity and stimulates anti-angiogenic activity
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