

GenVivo to Present at the 2023 Society for Immunotherapy of Cancer (SITC) Annual Meeting

Posters characterize GenVivo's immunotherapeutic IL-12 vectors and detail IL-12 vector (GEN-1018) synergy with GEN2 (HSV-TK) in aggressive cancer models

PASADENA, CALIFORNIA, UNITED STATES, November 4, 2023 /EINPresswire.com/ -- GenVivo, Inc., a clinical-stage biotechnology company developing an innovative immuno-genetic vector platform to deliver mRNA for oncology and infectious diseases, today announced that two posters are being presented at the Society for Immunotherapy of Cancer (SITC) 38th Annual Meeting, November 3-5, 2023 in San Diego, CA. Data presented on GenVivo vectors encoding for IL-12 indicate that local secretion of IL-12 within the tumor microenvironment can activate anti-tumor immune responses and in combination with GEN2 (HSV-TK) suicide gene therapy achieve synergistic effects on tumor progression in a relevant cancer model, without toxicity. As there are no approved IL-12 therapeutic products, this immune-gene therapy warrants further translational and clinical development.

Presentation details

- Abstract Link: <https://www.sitcancer.org/2023/abstracts/abstract-titles-publications>
- Session Title: Poster Hall - Ground Level - Exhibit Halls A and B1 - San Diego Convention Center
- Session Date and Time: Saturday, November 4, 2023 from 12:00 PM to 1:30 PM PST and 7:00 PM to 8:30 PM PST

Abstract Title: SYNERGISTIC EFFECTS OF MEDIATED GENE THERAPY WITH GEN2 (HSV-TK) AND GEN1018 (IL-12) IN AN EXPERIMENTAL MODEL OF COLORECTAL CANCER

Presenter: Joshua Yang, Ph.D., Pre-Clinical Research Scientist

Abstract Number: 844

- The studies in a murine model of highly aggressive colorectal cancer indicate that GenVivo's IL-12 vector-transduced tumors generated a significant immune response, inhibited tumor growth, and increased survival. In mice whose tumors were transduced with both IL-12 (GEN1018) and GEN-2 (HSV-TK) vectors, following valganciclovir (VGCV) prodrug therapy administration, a complete elimination of their tumors was observed, indicating potential increased potency of the suicide gene therapeutic approach.
- GEN2 is a clinical-stage retrovector that integrates into rapidly dividing cancer cells and delivers an enhanced variant of herpes simplex virus thymidine kinase (HSV-TK) as a prodrug activator

(‘suicide’) gene. Consequently, GEN2 induces cancer cell death upon treatment with a prodrug such as valganciclovir (VGCV). Immune cell activation can be further promoted inside the tumor microenvironment (TME) by immunocytokines, such as IL-12. IL-12 potently activates anti-tumor immune responses by enhancing natural killer (NK) cell and CD8+ T lymphocyte cytotoxicity.

- Tumor-localized IL-12 gene therapy (GEN1018) in combination with GEN2 is believed to not only increase recruitment of immune cells into the tumor microenvironment (TME) but also to suppress the growth of viable tumor tissue following multiple GEN1018 injections.

Abstract Title: IL-12 VECTORS ENGINEERED TO ENCODE A FUNCTIONAL P35-P40 HETERODIMER OR A SINGLE P35 SUBUNIT FOR CANCER IMMUNOTHERAPY

Presenter: Cecilia Roh, Ph.D., Director, R&D Gene Therapy

Abstract Number: 1214

- Three types of IL-12 vectors were engineered. In the first type, both p35 and p40 were encoded for and linked by a self-cleaving T2A peptide whereas in the second, only the p35 was encoded and in the third, both full IL-12 with HSV-TK (vTK) were encoded into one vector.

- When the appropriate cells were transduced, intact and biologically active IL-12 was produced. The functional secreted IL-12p70 had biological activity comparable to commercial recombinant IL-12 in in vitro assays of splenocyte stimulation and IFN- γ production. The vector with the p35 subunit was also able to form a functional p70 when p40 was expressed in a testing cell line.

- In a mouse tumor model of colorectal cancer, IL-12 vector-transduced tumors generated a significant immune response, inhibited tumor growth, and increased the survival rate compared to mice transduced with tumors that did not express IL-12. Additionally, mice expressing vTK/IL-12 were able to clear implanted tumors and remained tumor-free for the course of the experiment while the control arm expressing only vTK had a 40% tumor-free rate.

- In future studies, pseudotyped IL-12 vectors will be investigated to target tumor-specific surface receptors in in vivo tumor models via IV administration as a strategy to locally produce this important immunocytokine including in the context of tumor suicide gene therapy for an expected synergistic immunotherapeutic effect.

About GenVivo

GenVivo is a clinical-stage biotechnology company developing innovative vector-based immunotherapies focused on helping patients fight cancer. Our lead candidate, GEN2, is currently in a Phase 1 clinical trial (NCT04313868) in Asia. This October, FDA IND clearance was granted, and the first enrolled patient is anticipated in Q1 2024.

For more information about GenVivo, visit <https://genvivoinc.com/>

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Victor Constantinescu

GenVivo, Inc.

+1 626-768-5174

[email us here](#)

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