**Arsenal Biosciences Announces Presentation of Four Abstracts at AACR Annual Meeting Highlighting New CAR T-Focused Research**

*Company to share preclinical data on the utility of engineered T cells intended for the treatment of ovarian, kidney, and other solid tumor cancers*

South San Francisco, Calif. – April 5, 2024 – Arsenal Biosciences, Inc. (ArsenalBio), a clinical-stage programmable cell therapy company focused on engineering advanced CAR T-cell therapies for solid tumors, today announced the presentation of four abstracts at the American Association for Cancer Research (AACR) Annual Meeting in San Diego, CA., May 5-10, 2024. These data demonstrate the company's continued progress in developing and understanding the ways logic gating and integrated circuit T cell technology can potentially address a range of solid tumor cancers.

"We continue to build our knowledge of how integrated circuit T cells employing logic gating can be deployed as part of highly potent cell therapies and to study the range of ways these technologies can address areas of unmet medical need across a range of cancers," said Nick Haining, B.M., B.Ch., ArsenalBio's Co-Founder and Chief Scientific Officer. "We look forward to sharing updates on our progress in advancing these therapeutic approaches and how we are applying them in the clinic as we study AB-1015 and prepare to enter the clinic with AB-2100, potential treatments for ovarian and kidney cancers, respectively."

The following abstracts will be presented as poster presentations during the AACR annual meeting.

**Abstract #38: AB-2100, a PSMA-inducible CA9-specific CAR T cell product for the treatment of ccRCC provides long-term tumor responses in preclinical mouse model**
Date and Time: Sunday, April 7, 2024, 1:30 – 5:00 p.m. PDT
Presenter: Alba Gonzalez-Junca, Ph.D.

AB-2100 will be studied in a phase 1/2 clinical trial as a potential therapy for clear cell renal cell carcinoma (ccRCC) (NCT06245915). AB-2100 encodes a transcriptionally regulated sequential "AND" logic gate that comprises a priming receptor (PrimeR) specific for PSMA and an inducible CAR targeting CA9 antigen, which is widely expressed on local and metastatic lesions. By targeting both, the logic gate is intended to improve the safety profile of AB-2100, because PSMA and CA9 are not often co-expressed in normal tissues. Further, AB-2100 is designed with additional functionality including short-hairpin RNAs (snRNA) against Fas and TGFBR and a synthetic pathway activator (SPA) that drives enhanced antitumor activity. This approach was shown to be successful in the eradication of ccRCC targets in xenograft models.

**Abstract #6319: Characterization of AB-1015 logic-gated CAR induction (ON kinetics), receptor turnover (OFF kinetics), and logic gate sensitivity to ALPG/P and MSLN**
Date and Time: Tuesday, April 9, 2024, 1:30 – 5:00 p.m. PDT
Presenter: Xinyan Tang, Ph.D.

AB-1015 is being studied in a phase 1 clinical trial as a potential therapy for ovarian cancer (NCT05617755) contains an "AND" logic gate, consisting of a priming receptor (PrimeR) and an inducible chimeric antigen receptor (CAR) that is upregulated by PrimeR activation. This logic gate targets ALPG/P and MSLN, which are coexpressed in ovarian tumors but not in normal tissues. To better characterize CAR induction and receptor turnover, we conducted a series of assays, ultimately demonstrating preclinically that all PrimeR ICT cells have the potential to induce CAR. Leveraging a reductionist in vitro model system, we were also able to analyze CAR induction and receptor turnover.

**Abstract #2854: Enhancing CAR and TCR T cell function in solid tumors through in vivo combinatorial screens and single-cell analysis**
Date and Time: Wednesday, April 10, 2024, 9:00 a.m. – 12:30 p.m. PDT
Presenter: Dina Polyak, B. Pharm., Ph.D.

This preclinical study investigated ways to overcome the T cell exhaustion and factors of the tumor microenvironment that can limit the success of T cell therapies helping identify ways T cells can be reprogrammed to overcome these limitations. Researchers developed in vivo exhaustion models and conducted pooled CRISPR/Cas9 screens combined with single-cell RNA sequencing (scRNA-seq) to identify genetic changes capable of enhancing T cell function. The research leveraged CAR or T cell receptor (TCR) T cells and introduced genetic changes into the T cells before their transfer into the xenograft mouse models with established tumors. Researchers studied the relative success of many T cell phenotypes resulting from gain-of-function, loss-of-function, and combinations, and identified previously uncharacterized combinatorial perturbations that showed promise in addressing exhaustion and enabling greater success in addressing solid tumors.

**Abstract #7034: Pooled CRISPR screening coupled with single-cell sequencing identifies modifiers of CAR T cell state in the context of chronic antigen stimulation**
Date and Time: Wednesday, April 10, 2024, 9:00 a.m. – 12:30 p.m. PDT
Presenter: Sahil Joshi

T cell exhaustion from chronic antigen stimulation and an immunosuppressive tumor microenvironment limits the efficacy of T cell therapies used to treat solid tumors. This research used CRISPR/Cas9-based screening paired with deep sequencing to characterize perturbation-dependent T cell states following chronic antigen stimulation to understand how genetic perturbations shift T cells away from exhaustion associated states and whether such changes could increase the potency of immunotherapies. The preclinical results demonstrated the potential for pool CRISPR screening with single cell readouts to identify novel target genes

which could enhance the success of CAR T cell therapies.

For more information about ArsenalBio, visit www.arsenalbio.com.

**About Arsenal Biosciences Inc.**
Arsenal Biosciences, Inc. (ArsenalBio), headquartered in South San Francisco, Calif., is a clinical stage programmable cell therapy company focusing on discovering and developing a pipeline of next-generation autologous T cell therapies to defeat cancer. Our full-stack R&D engine is designed to generate multifunctional T cell medicines, enabled by precise and specific CRISPR-mediated insertion of large synthetic DNA cassettes. ArsenalBio is aiming to build the industry's largest DNA library of potential therapeutic enhancing integrated circuits, incorporating logic gating for improved tumor targeting and synthetic features enabling multiple pharmaceutical functions. In pioneering a computationally driven approach alongside nonviral clinical manufacturing, we aspire to deliver enhanced efficacy, increased patient safety, reduced stakeholder costs, and expanded market access. To learn more, visit www.arsenalbio.com and follow us on X (Twitter) @ArsenalBio, LinkedIn, and Facebook.

Contacts:
For Media
Gwen Gordon
858-245-5684
gwen@gwengordonpr.com