



## **Achilles Therapeutics Announces Grant of US Patent on Immunotherapies Targeting Clonal Neoantigens Identified Using Proprietary Method**

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**- US patent is for an immunotherapy targeting clonal neoantigens identified by the Achilles Clonality Engine (ACE), including vaccine, antibody, and autologous T cell therapy approaches -**

LONDON, Nov. 22, 2022 (GLOBE NEWSWIRE) -- Achilles Therapeutics plc (NASDAQ: ACHL), a clinical-stage biopharmaceutical company developing AI-powered precision T cell therapies to treat solid tumors, today announced that United States (US) patent 11,504,398 has been granted. The patent covers the treatment of patients with an immunotherapy targeting clonal neoantigens identified using the Achilles Clonality Engine (ACE), including vaccine, antibody and autologous T cell therapy approaches. ACE is a proprietary method for determining clonality of patient-specific mutations that drives the PELEUS™ bioinformatics platform. Clonal neoantigens are original mutations formed early in tumor evolution that are expressed on all cancer cells and absent from healthy tissue.

"The specific characteristics of clonal neoantigens have led to their emergence as a promising new class of targets for immunotherapies. Historically, identifying these targets has been challenging, given the high genetic complexity of the samples analyzed. With the now-patented ACE method, the PELEUS bioinformatics platform, which is built on the findings of the TRACERx (TRACKing Cancer Evolution through therapy (Rx)) study, rigorously identifies clonal neoantigens from individual patients to serve as targets for precision cancer immunotherapies," said **Dr Sergio Quezada, Chief Scientific Officer of Achilles Therapeutics**. "This patent confirms that our data-driven method of identifying personalized clonal mutations is the first of its kind and has potential different modalities including vaccines, antibodies and autologous T cell therapies."

The patented technology is based on a sophisticated statistical framework to determine the probability that a mutation is clonal through the analysis of a patient's sequencing data. This novel approach was developed and optimized using clinical data from TRACERx, the largest data set of its kind including genomics from nearly 800 patients. By using this approach immunotherapies can be developed to target these clonal neoantigens, which have been shown to be correlated with responses in patients treated with checkpoint inhibitor therapy<sup>1</sup>.

### **About Achilles Therapeutics**

Achilles is a clinical-stage biopharmaceutical company developing AI-Powered precision T cell therapies targeting clonal neoantigens: protein markers unique to the individual that are expressed on the surface of every cancer cell. The Company has two ongoing Phase I/IIa trials, the CHIRON trial in patients with advanced non-small cell lung cancer (NSCLC) and the THETIS trial in patients with recurrent or metastatic melanoma. Achilles uses DNA sequencing data from each patient, together with its proprietary PELEUS™ bioinformatics platform, to identify clonal neoantigens specific to that patient, and then develop precision T cell-based product candidates specifically targeting those clonal neoantigens.

### **About PELEUS™**

PELEUS is a proprietary, AI-powered bioinformatics platform built and validated through exclusive access to TRACERx knowhow and genomics data. PELEUS is the first patented system to use sophisticated Bayesian statistical algorithms to distinguish which mutations, or neoantigens, in a patient's tumor are clonal or subclonal by synthesizing DNA sequencing information from multiple tumor regions. Clonal neoantigens are protein markers that are present on all of an individual's cancer cells but are absent from healthy tissue, making them ideal cancer targets. The information from PELEUS provides the foundation for Achilles' VELOS manufacturing process to produce clonal neoantigen-reactive T cells, or cNeT.

### **About TRACERx**

TRACERx (TRACKing Cancer Evolution through therapy (Rx)), led by Professor Charles Swanton at UCL, is one of the largest tumor evolution studies to generate deep sequencing multi-region and multi-time point genetic data from over 3,200 tumor samples from nearly 800 lung cancer patients. TRACERx has transformed the understanding of tumor evolution and has convincingly shown that tumors originate from a single cell that evolves in a Darwinian manner and the early (clonal) mutations are preserved in all subsequent primary and metastatic tumor cells. The study, which has generated numerous publications, uncovered important mechanisms of cancer evolution and immune evasion by analyzing genetic signatures in lung tumors and tracking how they evolve over time from diagnosis through to relapse. These findings provide the ability to identify a novel class of tumor markers called clonal neoantigens that are present on all tumor cells yet absent from healthy tissue, making them ideal cancer targets. TRACERx represents the largest investment in lung cancer research by Cancer Research UK and Achilles has exclusive commercial rights to the TRACERx study data for development of neoantigen-targeting cell therapies.

### **Forward-Looking Statements**

This press release contains express or implied forward-looking statements that are based on our management's belief and assumptions and on information currently available to our management. Although we believe that the expectations reflected in these forward-looking statements are reasonable, these statements relate to future events or our future operational or financial performance, and involve known and unknown risks, uncertainties and other factors that may cause our actual results, performance, or achievements to be materially different from any future results, performance or achievements expressed or implied by these forward-looking statements. The forward-looking statements in this press release represent our views as of the date of this press release. We anticipate that subsequent events and developments will cause our views to change. However, while we may elect to update these forward-looking statements at some point in the future, we have no current intention of doing so except

to the extent required by applicable law. You should therefore not rely on these forward-looking statements as representing our views as of any date subsequent to the date of this press release.

<sup>1</sup>Cell Feb 2021

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