

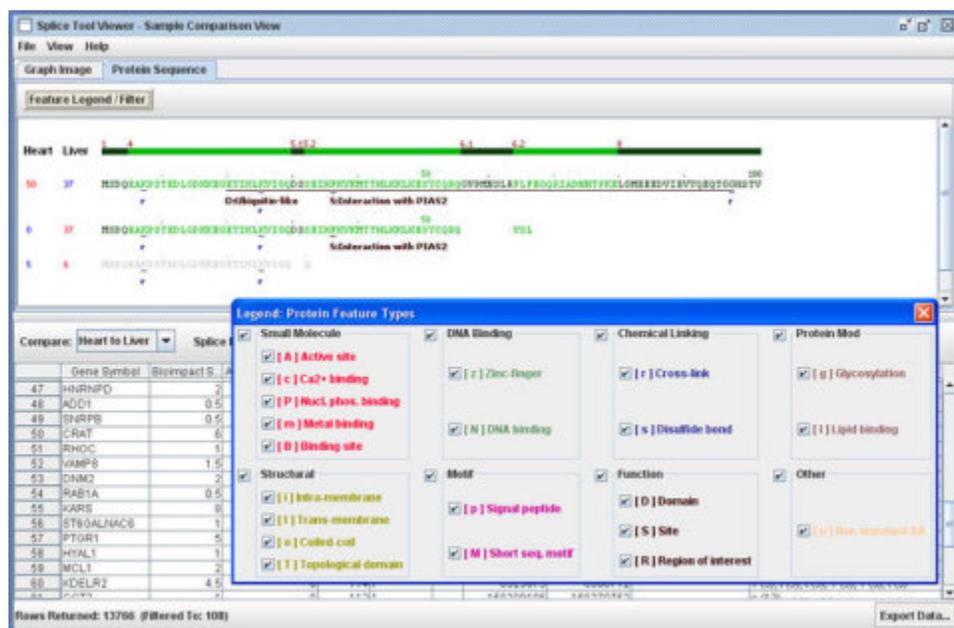


Kiromic Announces the Acquisition of InSilico Solutions Leveraging on Bioinformatics and Artificial Intelligence to Advance Clinical Development on Its Outpatient Allogeneic CAR-T for Solid Tumors

July 26, 2021

HOUSTON--(BUSINESS WIRE)--Jul. 26, 2021-- Kiromic Biopharma, Inc. (Nasdaq: KRBP), a pioneer in immuno oncology cellular therapy in solid tumors, is pleased to announce it has completed the acquisition of InSilico Solutions.

This press release features multimedia. View the full release here: <https://www.businesswire.com/news/home/20210726005822/en/>



InSilico Solutions is a world-class bio-informatics and artificial intelligence innovator with a long standing collaborative relationship with its clients at MD Anderson Cancer Center, Johns Hopkins School of Medicine, and the National Cancer Institute.

With this acquisition, Kiromic will bring in-house a team of experts in bioinformatics and AI in order to lengthen its lead in the race for an AI technology with the capability to select the optimal bio-markers needed for cutting edge immunotherapeutics such as CAR-T cell therapy.

Many CAR-T developers are still developing their CAR-T with biomarkers from decade old target libraries with known poor clinical outcomes.

Chief Executive Officer of Kiromic, Maurizio Chiriva-Internati, DBSc, PhDs, commented

We are pleased to have officially closed this long awaited acquisition of InSilico

Solutions, <http://bioinformatics.mdanderson.org/main/SpliceSeq/Overview> (Graphic: Business Wire)

Solutions.

The InSilico Solutions is another testament to our commitment to developing the very best possible CAR-T. And the very best CAR-T will start with having the best possible bio-markers by employing cutting edge bio-informatics and AI technologies.

Our CAR-T will be outpatient, off-the-shelf allogeneic.

The amount of information that oncologists and scientists gather from cancer patients continues to grow exponentially.

The number of scientists and the time those scientists have to analyze those billions of data point have not grown exponentially.

It makes sense that bioinformatics and artificial intelligence are brought to bear on the tasks of going through the mountains of data to select biomarkers in a few hours which would have required decades of human labor to do.

Best bio-informatics and AI.

Better biomarkers.

Better Manufacturing.

Better CAR-Ts.

Better Clinical Outcomes.

Chief of Bioinformatics and Research Computing Officer, Michael Ryan, PhD commented :

Over the past 3 years we have had an amazingly productive collaboration with Kiromic.

Together we produced a highly effective system that allows Kiromic to identify the needles in the haystack of genomic data – small sections of protein that are specific to the surface of cancer cells and that can be targeted by immunotherapy.

The entire InSilico staff is extremely energized by the acquisition by Kiromic.

We believe we can have an immediate, significant impact on accelerating delivery of effective treatment to patients.

Our next focus will be on utilizing AI methods to optimize response to allogeneic T cell therapy.

In particular, we are developing models using WGS, RNASeq, scRNASeq, cytometry, and cytokine panels to assist in selecting donor T cells with the strongest therapeutic potential.

Similar data from clinical trials will be used refine our understanding of efficacy and toxicity to improve treatment protocol and patient selection.

We will continually evaluate, implement, and improve our industry leading systems that will accelerate therapeutic development, manufacturing, and clinical testing of Kiromic's off-the-shelf allogeneic CAR-T for solid tumors.

Chief Medical Officer of Kiromic, Scott Dahlbeck, MD commented:

World-wide, patients with advanced cancer conditions are in great need of effective treatment solutions that can be added to the clinical armamentarium of medical providers.

However, in order to achieve significant gains in patient survival, innovative discoveries in biomarker discovery, selection, and validation are critical to facilitate the development of the next generation of immunotherapeutics that can truly make a difference.

The acquisition of InSilico Solutions is a major step forward in this process, and we are looking forward to the breakthroughs that will result from this expansion of Kiromic's AI capabilities and subsequently its CAR-T.

Chief of Strategy and Innovation Officer, Mr. Gianluca Rotino commented:

The acquisition of InSilico will allow significant advancement in the use of computational technologies throughout the development process, from discovery to manufacturing and in clinical trials.

This places Kiromic among the pioneers in innovative cell therapy and makes the upcoming clinical trial a critical milestone not only for the company, but for all the Cell Therapy Space.

Under the agreement terms, Kiromic acquires InSilico through a stock-swap operation, hiring the entire staff of InSilico and their material and immaterial assets.

The deal was followed up by the Strategy and Corporate Development department of Kiromic Biopharma

BEVILACQUA LLP served as Legal Counsel.

ThinkEquity served as financial advisors. ThinkEquity, a division of Fordham Financial Management, Inc.

Chief Financial Officer, Mr. Tony Tontat commented:

InSilico Solutions was a great find for the company 3 years ago when the collaboration started.

It's an even better find today with the closing of this acquisition.

InSilico in-house will mean that our bio-informatics department will have the continuous attention of developers as new developments evolve.

The InSilico acquisition will not impact the company's cash runway post the recent follow-on financing which closed on July 2021.

About InSilico Solutions

<http://insilico.us.com/>

Overview

InSilico Solutions is a bioinformatics company with a stellar 10-year track record of developing innovative software for cancer researchers.

InSilico staff includes an even mix of PhD scientists and senior engineers who specialize in building applications for analysis of diverse, large-scale genomics data.

InSilico's skills in machine learning, modeling, visualization, and intuitive interface design allows them to present complex data to researchers in an interpretable fashion, laying the groundwork for faster and more thorough discovery.

InSilico's Tools

<http://insilico.us.com/services.html>

InSilico designs and develops sophisticated analytical software tools that assist in extracting biological insights from vast quantities of genomic data.

InSilico builds custom bioinformatics applications that perform complex analysis but that provide users with intuitive, visual interfaces that make exploring the data much easier.

Our applications are robust and user friendly.

InSilico has experience developing custom tools for a variety of different types of data:

- Next Generation Sequencing (DNA and RNASeq)
- Microarrays (Expression, Methylation, Copy Number, SNPs)
- 3D Protein Structures

External Data (UCSC Tracks, Ensembl, NCBI, TCGA, dbSNP, 1000 Genome, COSMIC, etc)

InSilico employs state of the art design methods, code reviews, formal documentation, and automated testing to deliver high quality software applications.

InSilico's Data Interface

<http://insilico.us.com/portfolio.html>

In collaboration with Dr. Weinstein's BCB Group at MD Anderson, InSilico developed a Next Generation Heat Map Tool with an advanced JavaScript architecture utilizing WebGL for accelerated graphical rendering.

The NGCHM tool handles very large-scale clustered heat maps and brings them to life with pan, zoom, and link-out features delivering a strong platform for exploratory genomics discovery.

InSilico data analytic tools can be run on a web server or stand-alone and has been packaged as a Galaxy tool and a Docker image for easy installation and use in a variety of environments including cloud-based pipelines.

The small square shows in detail the expression of 50 genes on 50 The Cancer Genome Atlas (TCGA) samples.

Smoker (level) and Age.

The genome cancer atlas (TCGA) molecularly characterized over 20,000 primary cancer and matched normal samples spanning 33 cancer types.

TCGA generated over 2.5 petabytes of genomic, epigenomic, transcriptomic, and proteomic data.

InSilico data analytic tools like the above help to navigate in these data.

InSilico's World-Class Collaborations

InSilico has a long-term collaborative relationship with its clients at MD Anderson Cancer Center, Johns Hopkins School of Medicine, and the National Cancer Institute.

Through these collaborations, InSilico has developed many published, open-source cancer research tools that are in broad use by multiple research communities. The team plans to continue these highly productive relationships post-merger.

"InSilico has been a fantastic partner and provided the engineering muscle behind many of our popular cancer research tools.

"Their disciplined, rapid development approach combined with strong skills in software architecture, machine learning, and interface design have been invaluable to our work," said Dr. Rachel Karchin, Professor, Johns Hopkins University. Institute for Computational Medicine, Department of Biomedical Engineering, Department of Oncology, Department of Computer Science.

InSilico and Kiromic CancerDiff

Kiromic has engaged InSilico to develop several of its critical systems for therapeutic target selection including CancerDiff, and the automated Protein Research Assistant.

The algorithms identify tumor specific isoforms with targetable peptides on surface proteins with low probability of off target effects.

Target selection transcends tissue of origin to identify cross-tumor sub-populations with shared, targetable molecular characteristics.

Research functions automate, improve, and shorten previously labor-intensive steps of deep dive target investigation.

See Kiromic's AACR 2021 Poster: CancerDiff by InSilico ([Link to AACR 2021 Press Release](#))

Mesothelin isoform 2 is a novel target for allogenic CAR γ T cell therapy in solid tumors

Kiromic 3D, isoform prediction engine which examines billions of data points to select the best targets.

InSilico and Kiromic's Bioinformatics

The InSilico and Kiromic teams have proven to work effectively together in a highly synergistic manner.

Merging InSilico into Kiromic as its Bioinformatics Department will allow the formation of a fully integrated organization with enhanced capability to apply the latest machine learning methods to reduce therapy design timelines and more efficiently deliver effective treatment to patients.

InSilico's Publications

<http://insilico.us.com/publications.html>

Previous Kiromic Press Release

June 16, 2021: [KIROMIC BIOPHARMA PROVIDES UPDATE ON IND FILINGS ON ITS OFF-THE-SHELF ALLOGENEIC CAR-T FOR SOLID TUMORS](#)

About Kiromic

Kiromic BioPharma, Inc. (Nasdaq: KRBP) is an emerging clinical stage biopharmaceutical company focused on advancing the cellular therapy field, for solid tumors utilizing a state-of-the-art artificial intelligence (AI) platform focused on unleashing the power of the patient's own immune system to fight cancer.

Kiromic's pipeline development is leveraged through the Company's proprietary target discovery Artificial Intelligence engine called "DIAMOND." Kiromic's DIAMOND is big data science meeting target identification, dramatically compressing the man-years and the millions of drug development dollars needed to develop a live drug.

Forward-Looking Statements

This press release contains "forward-looking statements" that are subject to substantial risks and uncertainties. All statements, other than statements of historical fact, contained in this press release are forward-looking statements. Forward-looking statements contained in this press release may be identified by the use of words such as "anticipate," "believe," "contemplate," "could," "estimate," "expect," "intend," "seek," "may," "might," "plan," "potential," "predict," "project," "target," "aim," "should," "will" "would," or the negative of these words or other similar expressions, although not all forward-looking statements contain these words. Forward-looking statements are based on our company's current expectations and are subject to inherent uncertainties, risks and assumptions that are difficult to predict. Further, certain forward-looking statements are based on assumptions as to future events that may not prove to be accurate. These and other risks and uncertainties are described more fully in the section titled "Risk Factors" in the Company's annual report on Form 10-K for the most recently completed fiscal year and subsequent reports filed after the date of the annual report with the Securities and Exchange Commission. Forward-looking statements contained in this announcement are made as of this date, and our company undertakes no duty to update such information except as required under applicable law.

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