



## Twist Bioscience Synthetic DNA Stores New Netflix Original Series 'BIOHACKERS'

August 20, 2020

-- World's First Series Stored in DNA --

SOUTH SAN FRANCISCO, Calif.--(BUSINESS WIRE)--Aug. 20, 2020-- Twist Bioscience Corporation (Nasdaq: TWST) today announced that for the first time, an episode of a Netflix Original Series has been stored in Twist's synthetic DNA.

This press release features multimedia. View the full release here: <https://www.businesswire.com/news/home/20200820005290/en/>



DNA is an incredibly dense storage media (Graphic: Business Wire)

to storage," said Emily M. Leproust, Ph.D., CEO and cofounder of Twist. "It's exciting to ground the fictional series, which expounds beyond the boundaries of what is possible with DNA today, with the reality of preserving groundbreaking cultural media in synthetic DNA. The ability to store digital data in DNA seems futuristic, but the future is now."

DNA is the oldest coding system known to science, and we are only now beginning to explore the possibilities available to advance science through synthetic biology. The new show, BIOHACKERS, investigates some current opportunities as well as future possibilities, engaging imagination and creativity.

Released today exclusively on Netflix (NASDAQ: NFLX) and starring Luna Wedler and Jessica Schwarz, BIOHACKERS is a gripping science thriller. The six-part series by showrunner and director Christian Ditter ("How to be Single", "Love, Rosie", "Girlboss") deals with biological interventions, genetic modifications and the exciting possibilities in the field of engineering biology. In connection with the launch the new Netflix Original Series, scientists at ETH Zurich encoded the first episode of BIOHACKERS from ones and zeros into a sequence of the four nucleic bases adenine (A), guanine (G), cytosine (C) and thymine (T) - the building blocks of DNA. This code is then built, base by base into strands of synthetic DNA by Twist Bioscience to store the series for thousands of years.

Dr. Leproust continued, "DNA is an incredible molecule that, by its very nature, provides ultra high density storage for thousands of years. In fact, the DNA contained within all cells in a human body could store all the movies created to date in the 21<sup>st</sup> century three billion times over. That, indeed, illustrates the magic of bringing biology and technology together to create synthetic (inert) DNA."

Today, Twist manufactures more than one million small pieces of DNA on a single silicon chip using semiconductor technology. The company is now working toward the next generation of silicon chip that will allow the company to synthesize or write 10 gigabytes of DNA on each silicon chip, reducing the cost of digital data storage significantly for broad accessibility and commercialization.

### How to Store Digital Data in DNA

To store data in DNA, first, a data file is converted from its digital sequence of 0's and 1's into a DNA sequence of A's, C's, T's and G's; for example, 00 = A, 01 = C, 10 = G and 11 = T. Twist Bioscience then encodes the DNA data file into short segments of DNA (200 to 300 bases long) that can be synthesized ("written") and stored. In addition to storing part of the data file, each short segment contains an index to indicate its place within the overall data file. To retrieve the data, the segments are sequenced ("read") and then decoded back into the original file. One feature of the indexing system is it allows part of the file to be biologically recovered ("random access") before sequencing, so only data of interest is sequenced. And, all data is recovered error-free because error-correcting algorithms are used during the encode/decode process. Watch a [visual illustration](#) of how digital data is converted into DNA.

### About BIOHACKERS

Mia started her medical studies at the renowned University of Freiburg, but it soon became clear that her interest in revolutionary biohacking technology had more than just scientific reasons: she wants to win the trust of star lecturer Professor Tanja Lorenz, with whom she has a dark secret. In order to clear up her brother's death, she enters a dangerous world full of illegal genetic experiments. When she meets the brilliant biology student Jasper and his mysterious roommate Niklas, she has to make a decision: Between her feelings and her principles, between revenge for her family and protecting her new friends.

In addition to the leading roles Luna Wedler and Jessica Schwarz, Caro Cult, Adrian Julius Tillmann, Thomas Prenz, Sebastian Doppelbauer and Jing Xiang as well as Benno Fürmann play in the new genre mix, which promises high tension, high speed and young adult entertainment.

### About Twist Bioscience Corporation

Twist Bioscience is a leading and rapidly growing synthetic biology and genomics company that has developed a disruptive DNA synthesis platform to industrialize the engineering of biology. The core of the platform is a proprietary technology that pioneers a new method of manufacturing synthetic DNA by "writing" DNA on a silicon chip. Twist is leveraging its unique technology to manufacture a broad range of synthetic DNA-based products,

including synthetic genes, tools for next-generation sequencing (NGS) preparation, and antibody libraries for drug discovery and development. Twist is also pursuing longer-term opportunities in digital data storage in DNA and biologics drug discovery. Twist makes products for use across many industries including healthcare, industrial chemicals, agriculture and academic research.

Follow us on [Twitter](#) | [Facebook](#) | [LinkedIn](#) | [YouTube](#)

### **Legal Notice Regarding Forward-Looking Statements**

This press release contains forward-looking statements. All statements other than statements of historical facts contained herein are forward-looking statements reflecting the current beliefs and expectations of management made pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. Such forward-looking statements involve known and unknown risks, uncertainties, and other important factors that may cause Twist's actual results, performance, or achievements to be materially different from any future results, performance, or achievements expressed or implied by the forward-looking statements. Such risks and uncertainties include, among others, the risks and uncertainties of the duration, extent and impact of the COVID-19 pandemic, including any reductions in demand for our products (or deferred or canceled orders) globally or in certain regions; the ability to attract new customers and retain and grow sales from existing customers; risks and uncertainties of rapidly changing technologies and extensive competition in synthetic biology could make the products Twist is developing obsolete or non-competitive; uncertainties of the retention of a significant customer; supply chain and other disruptions caused by the COVID-19 pandemic or otherwise; risks of third party claims alleging infringement of patents and proprietary rights or seeking to invalidate Twist's patents or proprietary rights; and the risk that Twist's proprietary rights may be insufficient to protect its technologies. For a further description of the risks and uncertainties that could cause actual results to differ from those expressed in these forward-looking statements, as well as risks relating to Twist's business in general, see Twist's risk factors set forth in Twist's Quarterly Report on Form 10-Q filed with the Securities and Exchange Commission (SEC) on August 12, 2020 and subsequent filings with the SEC. In addition, many of the foregoing risks and uncertainties are, and could be, exacerbated by the COVID-19 pandemic and any worsening of global or regional business and economic environment as a result. We cannot at this time predict the extent of the impact of the COVID-19 pandemic and any resulting business or economic impact, but it could have a material adverse effect on our business, financial condition, results of operations and cash flows. Any forward-looking statements contained in this press release speak only as of the date hereof, and Twist Bioscience specifically disclaims any obligation to update any forward-looking statement, whether as a result of new information, future events or otherwise.

View source version on [businesswire.com](https://www.businesswire.com/news/home/20200820005290/en/): <https://www.businesswire.com/news/home/20200820005290/en/>

**Investor Contact:**

Argot Partners  
Maeve Conneighton  
212-600-1902  
[maeve@argotpartners.com](mailto:maeve@argotpartners.com)

**Media Contact:**

Angela Bitting  
925- 202-6211  
[media@twistbioscience.com](mailto:media@twistbioscience.com)

Source: Twist Bioscience Corporation