



DNA album record

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INTERNATIONAL MUSIC ALBUM STORED FOREVER AS DNA

 TELECOMMUNICATIONS

Scientists have found a way to store a music album as DNA using a technique developed in Zurich.

Twenty years ago, the British band Massive Attack released their international breakthrough album Mezzanine. The album featured their pioneering trip-hop style of electronic music and remains their most successful. To mark the album's 20th anniversary, a team at [ETH Zurich's Department of Chemistry and Applied Biosciences](#) is storing the album in the form of DNA. The method is described by Professor Robert Grass capable of storing information error-free for hundreds of years. In comparison, CDs typically last for around 30 years.

The information in DNA is stored as a sequence of nucleotides, which contain adenine, guanine, cytosine and thymine. To store the album, Grass and his colleagues first compressed it down to a music file of 15 megabytes. A US company will then produce 920,000 short DNA strands which code the music into nucleotide sequences. The DNA strands will then be enclosed in 5,000 nanometre-sized glass spheres. The entire process will take around two months. According to Grass, "What is new about the project with Massive Attack is that this technology is now also being used commercially." Additionally, according to ETH, the 15-megabyte music album is the second largest file ever stored on DNA.

The 5,000 glass beads which will contain the Massive Attack album will be invisible to the naked eye. They will be stored in a tiny bottle of water, which has a self-life which is "practically eternal". To read the DNA, it is removed from the glass beads using a fluoride solution. The stored music file can then be read using DNA sequencing techniques, and the album can be played back on a computer.

Once read, millions of copies can be made quickly and cheaply, simply by copying the data files. We have previously seen innovations in secure information storage, such as using [blockchain](#) to store online identities and new types of [cryptography](#). This is the first innovation that promises eternal storage. What other types of information might be stored using DNA?

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