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## Huge Amounts Of Data Can Be Stored In DNA

**Every film and television programme ever made could be stored in HD quality in a cupful of artificial DNA, say scientists.**

4:38pm UK, Wednesday 23 January 2013



DNA can be stored indefinitely

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By Thomas Moore, Health and Science Correspondent

Scientists have used DNA to store an mp3, a jpeg photo, a pdf file - and every one of William Shakespeare's sonnets.

Just as a computer stores digital files as a unique code of 'ones' and 'zeros', scientists wrote information into a strand of synthetic DNA made from a sequence of four chemical 'letters'.

They say data can be written so efficiently that every film and TV programme ever made could be stored in HD quality in just one cupful of DNA.

Currently data is archived on magnetic tape in huge vaults. But the tape degrades and the information on it needs to be copied onto a new tape every few years.

But Nick Goldman of the [European Molecular Biology Laboratory](#) (EMBL) says DNA could be stored indefinitely.

"We already know that DNA is a robust way to store information because we can extract it from bones of woolly mammoths, which date back tens of thousands of years, and make sense of it," he said.

"It's also incredibly small, dense and does not need any power for storage, so shipping and keeping it is easy."

Normally DNA contains the code to make life.

But scientists at Agilent Technologies Inc in California made a synthetic string of DNA that encoded an mp3 of Martin Luther King's "I have a dream" speech, a jpeg photo, a pdf of Watson and Crick's DNA research paper and a text file of every one of Shakespeare's sonnets.

"The result looks like a tiny piece of dust," said Emily Leproust of Agilent.

The company then couriered the DNA to the EMBL scientists near Cambridge, who then 'read' the DNA code and reconstructed the digital files without any errors.

Anybody with the correct software key could use a standard DNA reading machine to decode the information,

the scientists say.

The research is described in the journal Nature.

Currently the high cost and slow speed of writing and reading DNA is a major barrier.


But within a decade the technique is expected to be cheap and fast enough to make DNA data storage viable.

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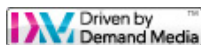


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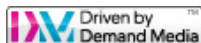


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