The Storage Capacity of DNA

COMPUTER users generate enormous amounts of digital data that has to be stored for access as needed. Scientists are hoping to revolutionize current methods for digital storage by imitating a far superior data-storage system found in nature—DNA.

Consider: DNA, found in living cells, holds billions of pieces of biological information. “We can extract it from bones of woolly mammoths . . . and make sense of it,” says Nick Goldman of the European Bioinformatics Institute. “It’s also incredibly small, dense and does not need any power for storage, so shipping and keeping it is easy.” Could DNA store man-made data? Researchers say yes.

Scientists have synthesized DNA with encoded text, images, and audio files, much as digital media stores data. The researchers were later able to decode the stored information with 100 percent accuracy. Scientists believe that in time, using this method, 0.04 ounce (1 g) of artificial DNA could store the data of some 3,000,000 CDs and that all this information could be preserved for hundreds if not thousands of years. Potentially, this system could store the whole world’s digital archive. DNA has thus been dubbed “the ultimate hard drive.”

What do you think? Could the storage capacity of DNA have come about by evolution? Or was it designed? ■