



Showcasing research from Professor Matej Butala's laboratory, Biotechnical Faculty, University of Ljubljana, Slovenia and the Marcin Nowotny's Laboratory of Protein Structure, International Institute of Molecular and Cell Biology in Warsaw, Poland.

Data storage based on the absence of nucleotides using a bacteriophage abortive infection system reverse transcriptase

DNA molecules are a promising data storage medium for the future; however, effective de novo synthesis of DNA using an enzyme remains a challenge. We demonstrate that the polymerase AbiK from *Lactococcus lactis* facilitates such an approach. Using surface plasmon resonance and AbiK, DNA with segments of random length and a sequence consisting of only three of the four natural nucleotides can be synthesized. The information is encoded using the absence of one nucleotide in each segment. Our setup holds great potential for synthesizing DNA for data storage. *Artwork design by Ella Maru Studio.*

As featured in:



See Matej Butala *et al.*,
Lab Chip, 2025, **25**, 113.