



MI-DNA DISC

The first *in vivo* system to store and edit DNA-based data

MI-DNA Disc aims to bring a **low-cost**, **energy-efficient**, and **fast data driven** that can write, edit, store, and retrieve DNA-based data, more efficiently compared to current technologies.

MI-DNA Disc features the first *in vivo* system combining simple and easily available hardware components with ability of **bacterial cells** to store and edit DNA-based data.



MI-DNA Disc Advantages



POSITIVE ENVIRONMENTAL IMPACT

The cultivation of bacteria requires little energy, no rare-earth elements, and other toxic compounds.



INTEGRITY

Writing and storage cartridges can be used independently from each other. The two cartridge types can be combined with other DNA writing and storing concepts due to the simple inlet and outlet interfaces.



SCALABILITY

MI-DNA Disc uses data drive that are mass products. Displays and filter cartridges are essential in several sectors such as the biotech, pharma, food, and beverage industry.



RELIABILITY

Introduction of checksum and hashing function elements into the DNA data in combination with a data duplicate encoded as reverse complementary sequence will allow to perform *in silico* data corrections necessary due to mutations during DNA replication and amplification.



SUSTAINABILITY

Bacteria can use an almost infinite reservoir of organic and inorganic compounds as power and nutrition source. They can be even autotrophic meaning that the power themselves directly from sunlight. Compared to *in vitro* DNA synthesis systems, there are not required chemicals, plasticware (e.g., pipette tips, tubes), and sophisticated liquid handling instruments.

MI-DNA Disc novel approach could change the way we store data and bring relevant benefits to the following sectors



Pharma and medical data



Digital legacy documents



Cultural heritage digital documents



Corporate data centres



Get in touch with MI-DNA Disc



www.midnadisc.eu

Partners



European Innovation Council



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