

Biochips at the CEA

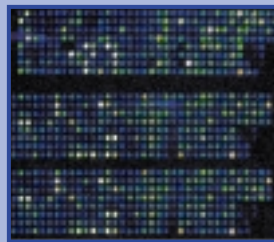
What is a BioChip ?

Symbiosis between Biology and Micro-Electronics has created the BioChip family: a field of microsystems dedicated to revolutionary biological analyses with high throughput performances.

On a few cm² of glass or silicon, biochips can manipulate and analyze thousands of different DNA sequences, as many proteins or even individualized living cells.

Various types of BioChips

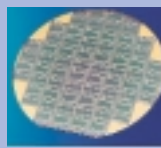
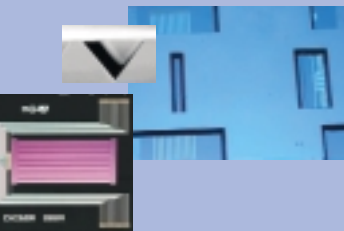
DNA chips are functionalized with thousands of specific genetic sequences. They are used to analyze gene mutations and gene expression in response to a number of stimuli (environment, drugs, stress, cancer, development...). On a single chip, all human genes can be analyzed in a single experiment.



La référence: La puce à ADN sur verre pour l'analyse globale d'un génome (densité typique de 12 000 gènes sur cm²).



Partners : 



The Point-of-Care chip : integration of DNA sample amplification and analysis by hybridization

LabOnChips are miniaturized laboratories automating complex sample preparation and high throughput analysis.

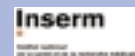
Partners : 

Cell-On-Chips are microsystems integrating live cells and offer researchers revolutionary ways to monitor and manipulate individually thousands of cells.



The MeDICS chip for Individualized Cell Sorting and Analysis

Partners :



Scope

- Fundamental research
- Pharmaceutical and medical research
- Diagnostics & Therapeutics
- Biotechnology
- Health, Environment and Food Control

Some partners of the CEA

Industrials: BioMérieux, Protéus, STMicroelectronics, Silicon Biosystems, Sanofi-SynthéLabo, ApiBio, Genset, Yamataké, NeuroTech

Academia: INSERM, CNRS, INRA, ANRS (AIDS Research), AFM (French muscular dystrophy association), Université Libre de Bruxelles, Università di Bologna

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