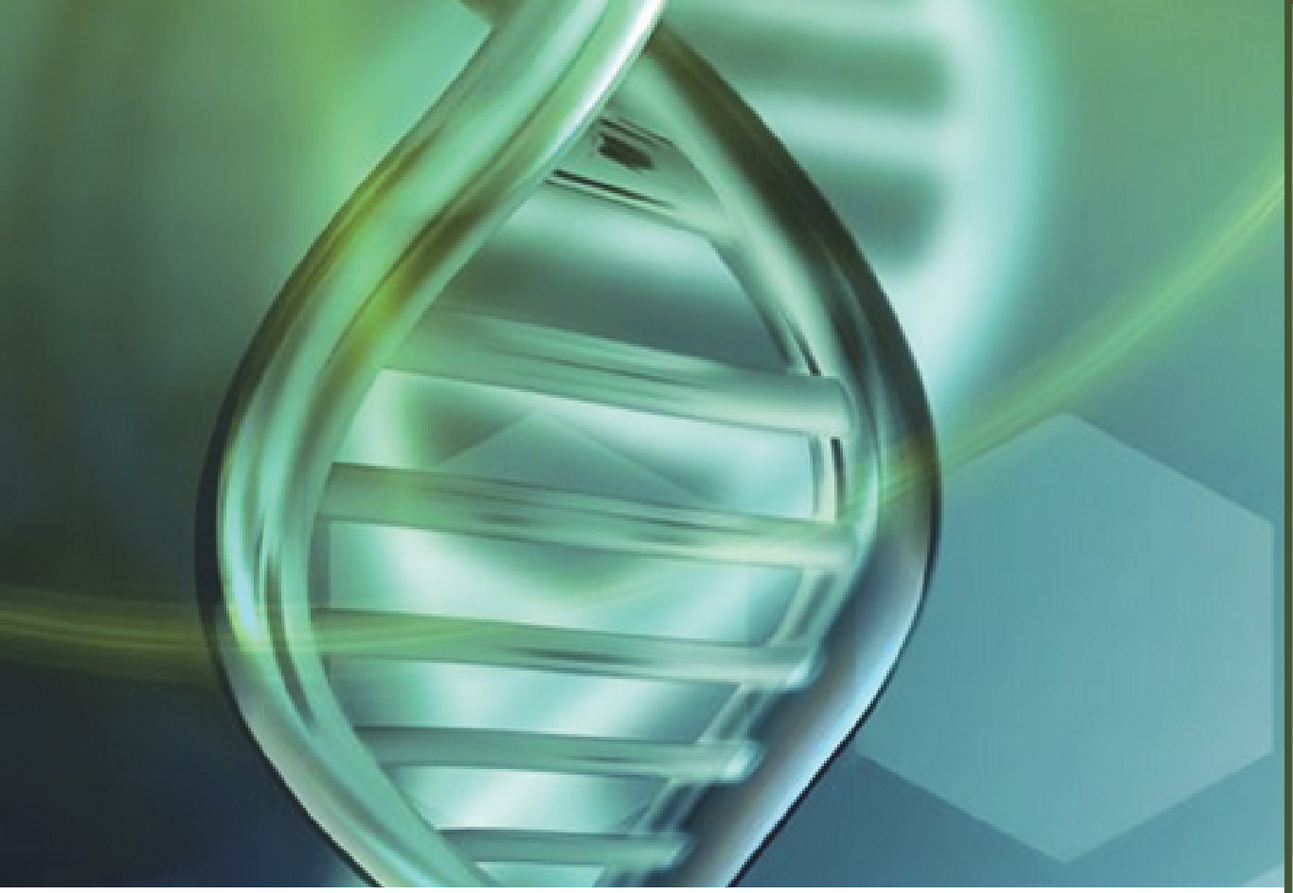

HIGHLY INTERDISCIPLINARY CONSORTIUM

Seven partners with expertise in molecular biology, biophysics, nanomaterials, chemistry and condensed matter physics.

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Contact us. We would like to hear your proposals.
Project Coordinator: Prof. Electra Gizeli, *gizeli@imbb.forth.gr*

CATCH-U-DNA

A new concept in biophysics and molecular diagnostics

Towards a new diagnostic method
WITHOUT PCR AMPLIFICATION

Research Project funded by the European Commission Horizon 2020 Research and Innovation. Programme H2020-FETOPEN

WHAT IS CATCH-U-DNA?

CATCH-U-DNA project aims to replace the labor-intensive, occasionally biased and costly PCR method with a simple non-PCR DNA quantification method by exploiting, for the first time, hydrodynamic properties of DNA chains. It is a novel sensing concept that uses acoustic wave sensors.

WHY CATCH-U-DNA?

Detection of circulating-tumor DNA (ctDNA) is the Holy Grail of cancer diagnosis, prognosis and treatment. Existing techniques to detect ctDNA in human samples are expensive and involve laborious multi-step methods. The future lays in new detection concepts and innovative technologies for providing simple, highly sensitive and cost-effective methods for ctDNA detection.

HOW WILL IT WORK?

CATCH-U-DNA will apply an integrated acoustic platform to the detection in serum of common mutations occurring in colorectal and lung cancers: KRAS, EGFR and BRAF. The results will be compared with the state-of-the art methods: next-generation sequencing (NGS) and real-time PCR (rtPCR) of tumor tissue and serum samples from the same patients.

Analysis of free circulating tumor DNA – a major breakthrough in individualized cancer diagnosis

Reliable
>95% detection success

Affordable
Inexpensive system

Highly sensitive
aM range

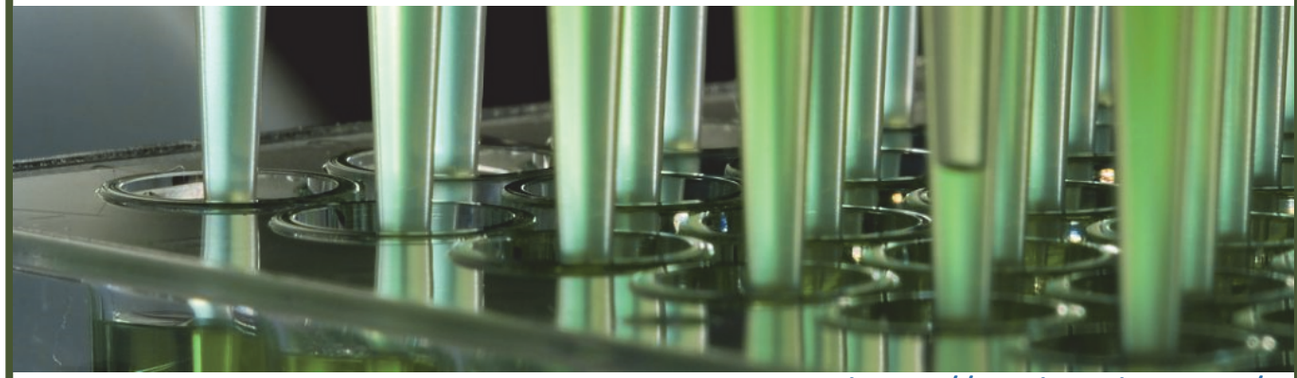
Simple
User-friendly method

Improved diagnostic

CATCH-U-DNA will simplify the detection of DNA mutations associated with colorrectal and lung cancers. Thus, it will facilitate more accurate diagnostics and reduce the need for tissue biopsies.

Simplified Monitoring

CATCH-U-DNA will render easier teh continous and more cost-effective and reliable monitoring of patients afflicted with these diseases, therefore, making feasible a more personalized treatment.



https://catch-u-dna.com/