

METHOD FOR MINIMAL RESIDUAL DISEASE DETECTION IN CANCER PATIENTS

DESCRIPTION OF THE TECHNOLOGY

Minimal residual disease (MRD) indicates the presence of cancer cells during or after cancer treatment that are not visible by imaging tests. The detection of MRD has become a specialised test to assess the risk of relapse and to establish more effective treatment.

It is currently performed using flow cytometry, polymerase chain reaction (PCR) and next-generation sequencing (NGS) techniques. These traditional methods based on reported tumour profiles or customised panels tend to underestimate tumour heterogeneity and clonal evolution, thus reducing their ability to identify MRD in patients who subsequently experience recurrences.

Although detection of MRD by **circulating DNA (ctDNA) analysis** has proven to be crucial in identifying patients at high risk of relapse, current methods show significant limitations in sensitivity, especially in patients after surgery.

Researchers of INCLIVA and Valencia University have developed a **tumour-diagnostic method** for the highly sensitive **detection of minimal residual disease** (MRD) in cancer patients by analysis of circulating tumour DNA (ctDNA) with high sensitivity that allows for better clinical decision-making (Fig.1).

STATE OF DEVELOPMENT

The methodology is validated in colon cancer with an external cohort and is currently being validated in other cancers.

ADVANTAGES

- ✓ Higher sensitivity than conventional methods.
- ✓ Early detection of MRE.
- ✓ Follow-up of tumour evolution.
- ✓ Possibility of personalised treatments.
- ✓ Reduction of the risk of over- or under-treatment.
- ✓ Broad clinical applicability (tumour-diagnosis).

APPLICATION

Biotechnology and molecular diagnostics for detection of minimal residual disease and treatment of cancers.

INTELLECTUAL PROPERTY RIGHTS

Patent application EP25382212 with priority date 7 March 2025.

COLABORATION SOUGHT

Biotech or pharmaceutical companies interested in licensing agreements or co-development of this technology.

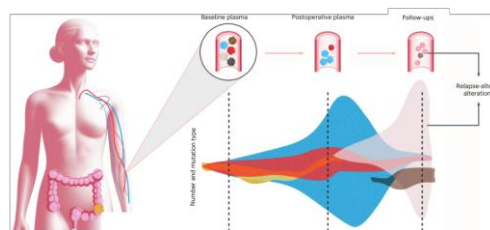


Fig.1. Study design for the detection of MRD.

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