

## **Liquid biopsy for monitoring of ras status in metastatic colorectal cancer**

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### **Abstract**

**Background:** The absence of RAS gene mutations in metastatic colorectal cancer (mCRC) allows the administration of targeted anti-EGFR antibody therapy. However, little evidence is available on the loss of the RAS mutation in the primary mutant disease and conversion to a wild-type RAS mCRC. Recently, liquid biopsy has emerged as a valuable tool for serial monitoring of RAS status during mCRC treatment, offering a non-invasive and rapid assessment approach.

**Objective:** The goal of this study is the evaluation of RAS status change based on liquid biopsy after disease progression.

**Methods:** Patients aged > 18 years and recently diagnosed with metastatic colorectal cancer were prospectively enrolled. RAS/BRAF status was tested at baseline using tissue and liquid biopsies, and upon progression on first-line therapy using liquid biopsy with the Idylla/Biocartis system.

**Results:** The study included 100 mCRC patients. Mean age was 65 years, and 54% were male. Among patients who progressed on first-line therapy, 20% showed a shift from RAS-mut to RAS-wild type, while 11% developed RAS mutations after initially being RAS-wild type. There was no correlation between the presence of liver metastases and the observed shifts in RAS status during progression.

**Conclusion:** These findings suggest that liquid biopsy could be a promising tool for tracking RAS mutational changes in mCRC patients after first-line treatment, serving as a non-invasive approach to monitoring disease progression and guiding personalized treatment decisions. Additional studies are needed to refine liquid biopsy techniques and establish comprehensive monitoring strategies for RAS status in mCRC management.

### **Do you have any conflicts of interest?**

No, I do not have a conflict of interest.