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Review

The ideal reporting of *RAS* testing in colorectal adenocarcinoma: a pathologists' perspective

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Summary
RAS gene mutational status represents an imperative predictive biomarker to be tested in the clinical management of metastatic colorectal adenocarcinoma. Even if it is one of the most studied biomarkers in the era of precision medicine, several pre-analytical and analytical factors may still impasse an adequate reporting of *RAS* status in clinical practice, with significant therapeutic consequences. Thus, pathologists should be aware on the main topics related to this molecular evaluation: (i) adopt diagnostic limit of detections adequate to avoid the interference of sub-clonal cancer cell populations; (ii) choose the most adequate diagnostic strategy according to the available sample and its qualification for molecular testing; (iii) provide all the information regarding the mutation detected, since many *RAS* mutation-specific targeted therapeutic approaches are in development and will enter into routine clinical practice. In this review, we give a comprehensive description of the current scenario about *RAS* gene mutational testing in the clinic focusing on the pathologist's role in patient selection for targeted therapies.

Key words: colorectal cancer, precision medicine, *RAS*, biomarkers

Introduction

In the era of precision medicine, the implementation of testing for established predictive biomarkers has become a crucial step of therapeutic management of patients with advanced colorectal cancer (CRC) [1].