

عنوان مقاله:

HER-2 V777L mutation detection using HRMA based Real-Time PCR in Breast Cancer

محل انتشار:

یازدهمین کنگره بین المللی سرطان پستان (سال: 1394)

تعداد صفحات اصل مقاله: 2

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خلاصه مقاله:

Introduction: The development of targeted therapies has created a need for the rapid molecular characterization of cancers. We describe here the usefulness of high-resolution melting analysis (HRM) to screen for HER-2 mutations in clinical cancer samples. In Breast cancer, HER-2 mutations have been shown to identify a group of patients that do not respond to SERMs and the identification of these mutations is thus clinically important. **Methods:** HER-2 DNA sequence was extracted from NCBI Gene data bank. Primer set specific for HER-2 gene was designed by Beacon designer software. Then, the specificity of primers was confirmed using BLAST tool. We developed a high-resolution melting (HRM) assay to detect somatic mutations in exon 20, notably codon 777 of the HER-2 gene using the intercalating dye EVA Green. We tested 20 Breast paraffin-embedded tissue samples and then examined the sensitivity of mutation detection with bidirectional DNA sequencing. **Results:** We found that three samples were positive for V777L mutation which was readily detectable using HRM. The validation of HRMA assay with DNA sequencing and dye-probe based technologies showed that the sensitivity and specificity of PCR/HRMA were 100% and 100%, respectively. **Discussion:** These findings show that HRMA is a highly sensitive, simple and low-cost designed assay to detect human disease-associated mutations, especially for samples with mutations of low incidence. As a result, the use of DNA sequencing and dye-probe based technologies could be significantly declined by the implementation of HRMA.

کلمات کلیدی:

HER-2, Breast cancer, HRMA, PCR

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