



# MELANOMA

## **Real-time PCR assays**

BRAF Mutation Analysis Kit II

NRAS Mutation Analysis Kit

c-Kit Mutation Detection Kit

Cell-free BRAF Mutation Detection Kit



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# MELANOMA

## MUTATIONS IN MELANOMA

Melanoma is the fifth most common malignancy in the United States. Approximately 70% of melanoma cases harbor recurrent somatic mutations that aberrantly activate growth and proliferation pathways and lead to tumorigenesis. The most common mutations found in melanoma are BRAF mutations occurring at codon 600 in approximately 40-60%, followed by NRAS mutations in 15-25% and c-Kit in 2-8% of cases. BRAF mutations have been associated with increased sensitivity to BRAF inhibitors. While there are no approved anti-NRAS targeted therapies, NRAS-mutated melanomas have demonstrated increased sensitivity to various RTK and MEK inhibitors.

## AVAILABLE KITS FOR MELANOMA

PRODUCT NAME	CAT NO.	INTENDED USE
BRAF Mutation Analysis Kit II (V600E/K/D/R/M/G)	BRAF-X-RT64	RUO, CE-IVD
NRAS Mutation Analysis Kit (exons 2, 3 and 4)	NRAS-RT50	RUO, CE-IVD
c-Kit Mutation Detection Kit	CKIT-RT44	RUO, CE-IVD
Cell-free BRAF Mutation Detection Kit	CTBRAF-48	RUO, CE-IVD

The above kits are polymerase chain reaction (PCR)-based assays that use allele-specific primers in a multiplex reaction to identify the presence of BRAF, NRAS, and c-Kit mutations. The assays work by amplifying mutant-specific sequences in samples that contain a mixture of mutant and wild-type DNA and rely on fluorescent probes for detection. Each reaction contains primer sets and probes for detection of the mutations, as well as an endogenous control gene.

The testing procedure involves three (3) simple steps:

1. Isolation of DNA from tumor biopsies, paraffin-embedded sections (FFPE), fresh frozen tumors, or plasma (for cell-free kits).
2. Amplification using the provided reagents in the kit.
3. Data analysis and interpretation using the real-time PCR software or provided analysis worksheet<sup>†</sup>.

<sup>†</sup> Automated analysis worksheets available for certain kits and instruments; please contact [support@entrogen.com](mailto:support@entrogen.com) for more information.

## EQUIPMENT AND MATERIALS

All kits require a real-time PCR instrument capable of detecting FAM and VIC fluorescent probes. Additionally, the c-Kit Mutation Detection Kit requires capability to detect ROX and CY5 fluorescent probes.

All reagents required for PCR amplification/detection, as well as validated reaction controls are included. Columns and reagents for DNA isolation are not included.

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