COLORECTAL CANCER

Real-time PCR assays

KRAS Mutation Analysis Kit
KRAS/BRAF Mutation Analysis Kit
NRAS Mutation Analysis Kit
RAS Mutation Screening Panel
PIK3CA Mutation Detection Kit
Cell-Free RAS Mutation Detection Kit
Colorectal Cancer Mutation Detection Panel

EntroGen
Predictive • Preventive • Personalized

COLORECTAL CANCER

SOMATIC MUTATIONS IN CRC

Colorectal cancer (CRC) develops through a progressive accumulation of genetic alterations that code for proteins involved in pathways downstream of the epidermal growth factor receptor (EGFR). Given the activating nature of these mutations, currently available anti-EGFR treatments such as cetuximab and panitumumab are ineffective in patients with tumors that harbor mutations in KRAS, NRAS, BRAF, PIK3CA and AKT1. The prevalence of KRAS, NRAS, BRAF, PIK3CA and AKT1 mutations in CRC are approximately 40%, 3%, 8%, 15% and 6%, respectively.

AVAILABLE KITS FOR CRC

PRODUCT NAME	CAT NO.	INTENDED USE
KRAS Mutation Analysis Kit (exons 2, 3 and 4)	KRAS-RT50	RUO, CE-IVD
KRAS/BRAF Mutation Analysis Kit (KRAS exons 2, 3, 4 & BRAF V600E)	KRBR-RT50	RUO, CE-IVD
NRAS Mutation Analysis Kit (exons 2, 3 and 4)	NRAS-RT50	RUO, CE-IVD
RAS Mutation Screening Panel (exons 2, 3, and 4 of KRAS & NRAS genes)	RAS-RT50	RUO, CE-IVD
PIK3CA Mutation Detection Kit (exons 9 and 20)	PI3K-RT48	RUO, CE-IVD
Cell-Free RAS Mutation Detection Kit (KRAS & NRAS exon 2 codons 12/13 + NRAS exon 3 codon 61)	CTRAS-RT40	RUO*
Colorectal Cancer Mutation Detection Panel (detects all mutations from above kits plus AKT1 E17K mutation)	CRC-RT48	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 KRAS, NRAS, BRAF, PIK3CA and/or AKT1 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 kit).
2. Amplification using the provided reagents in the kit.
3. Data analysis and interpretation using the real-time PCR software or provided analysis worksheet‡.

EQUIPMENT AND MATERIALS

All kits require a real-time PCR instrument capable of detecting FAM and VIC fluorescent probes, while the Colorectal Cancer Mutation Detection Panel requires an instrument able to additionally 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.

* Coming soon

‡ Automated analysis available for specific instruments; please contact support@entrogen.com for more information.