

BRAF Codon 600 Mutation Analysis Kit

ONCOLOGY

BRAF Mutations and Cancer

The *BRAF* gene encodes a serine/threonine protein kinase, which plays a role in regulating the MAP Kinase/ERK signaling pathways, affecting cell growth and proliferation. Somatic mutations in this gene have been found in cancers, including non-Hodgkin lymphoma, colorectal cancer, malignant melanoma, papillary thyroid carcinoma, non-small cell lung carcinoma, and adenocarcinoma of lung.

The most common mutations in *BRAF* occur in codon 600, where an amino acid substitution in the activation segment of the kinase domain creates a constitutively active form of the protein. *BRAF* mutations are generally found in tumors that are wild-type for K-Ras, N-Ras, and EGFR.

Testing Procedure and Analysis

The table below lists the mutations detected by this kit and the approximate frequencies found in various cancers.

Mutation Name	Nucleotide Change	Amino Acid Change	Frequency
V600E	c.1799T>A	Valine (V) to glutamic acid (E)	70-90%
V600K	c.1798_1799GT>AA	Valine (V) to lysine acid (K)	10-15%
V600D	c.1799_1800TG>AT	Valine (V) to aspartic acid (D)	<5%

EntroGen's *BRAF* codon 600 mutation analysis kit is a polymerase chain reaction (PCR)-based assay that uses allele-specific probes to identify the presence of the *BRAF* V600E, V600K, and V600D mutations. The testing procedure involves three (3) simple steps:

- Isolation of DNA from tumor biopsies, paraffin-embedded sections (FFPE), or fresh frozen tumors
- Amplification of regions of the *BRAF* gene using allele-specific probes
- Detection of amplification product on a Real-Time PCR instrument.

This test can be completed in approximately 2 hours from isolation of DNA to test result.

Equipment and Materials

EntroGen's *BRAF* codon 600 mutation analysis kit requires a real-time PCR instrument capable of detecting FAM and VIC fluorescent probes.

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

Intended Use

EntroGen's *BRAF* codon 600 mutation analysis kit is available for Research Use Only (RUO). Not for use in diagnostic procedures.

Ordering Information

Product Name	Cat. No.
B-Raf Codon 600 Mutation Analysis Kit for Real-Time PCR (V600E/K/D)	BRAFM-RT64