

TRUPCR® NRAS Mutations Detection Kit

NEED

NRAS is a member of the RAS family of GTPases and plays a central role in the MAPK signaling pathway and also plays a role in the pathogenesis in various cancers. Activating mutations in exon 2 (codon 12/13), exon 3 (codon 61) and exon 4 (codon 146) have been found in various cancers, including melanoma (13-25%), colorectal cancer (1-6%), lung cancer (1%), hepatocellular carcinoma (10%), myeloid leukaemias (14%), and thyroid carcinoma (7%). The mutation status of NRAS gene is relevant to drug resistance of non-small cell lung cancer treated with tyrosine kinase inhibitors and drugs such as panitumumab. As a result, NRAS mutations detection supplies evidence for targeted clinical therapy of tumor patients.

NRAS mutations are now regularly identified in the clinical treatment of mCRC as part of routine RAS testing prior to EGFR inhibitor therapy. KRAS mutations have been associated with right-sided colon tumors, while NRAS mutations have been associated with left-sided primary tumors and female gender, suggesting a distinct biology for KRAS and NRAS mutant molecular subsets of mCRC.

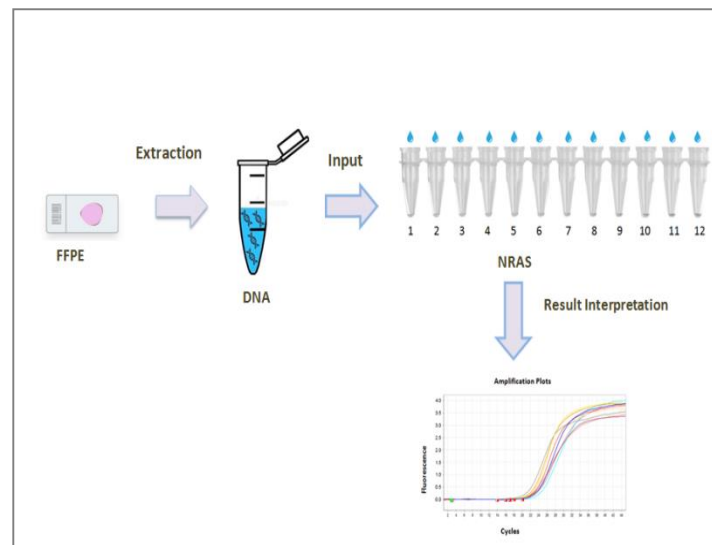
SOLUTION BY TRUPCR®

The TRUPCR® NRAS Mutations Detection Kit is intended for the qualitative detection of NRAS somatic mutations in the genomic DNA extracted from fresh, frozen or formalin fixed paraffin-embedded (FFPE) tissue using Real Time PCR. The kit is based on allele specific amplification and is achieved by ARMS PCR. It is composed of 11 assays for the detection of NRAS mutations and a reference control gene of NRAS region without any known polymorphism/mutation.

The kit is designed to selectively amplify mutant specific sequences in samples that contain a mixture of wild-type and mutated DNA. The kit can detect 24 different mutations in a single run that are found in codons 12, 13, 59, 61, 117 & 146.

The kit contains primers and probes for the detection of the all target (FAM) as well as endogenous control gene as internal control (VIC/HEX). Internal control is included to verify the extraction procedure and also the possible presence of inhibitors, which may cause false negative results.

TEST PROCEDURE



PRODUCT HIGHLIGHTS:

- Detects 24 different mutations in a single run and differentiate all relevant biomarker recommended in guidelines
- Sensitive to detect up to 1% - 5% mutation in NRAS gene

TECHNICAL SPECIFICATIONS

- Selective Amplification of DNA containing mutation with ARMS Technology
- Endogenous Internal control included to avoid false-negative results
- Compatible Instruments – Applied Biosystems™ 7500 series, Applied Biosystems™ StepOne series, Applied Biosystems™ QuantStudio® series, Rotor-Gene Q, Bio-Rad CFX96, CFX384, AriaMx Real-Time PCR, Roche - LightCycler® 480 –II, Line gene K Real-Time PCR

LIST OF DETECTABLE MUTATIONS

Mutation	Nucleotide Change	Remarks
G12A	c.35G>C	It detects 3 mutations but does not distinguish between them.
G12C	c.34G>T	
G12D	c.35G>A	
G12R	c.34G>C	It detects 3 mutations but does not distinguish between them.
G12S	c.34G>A	
G12V	c.35G>T	
G13A	c.38G>C	It detects 3 mutations but does not distinguish between them.
G13C	c.37G>T	
G13D	c.38G>A	
G13R	c.37G>C	It detects 3 mutations but does not distinguish between them.
G13S	c.37G>A	
G13V	c.38G>T	
A59T	c.175G>A	It detects 2 mutations but does not distinguish between them.
A59D	c.176 C>A	
Q61H	c.183A>T	It detects 3 mutations but does not distinguish between them.
Q61H	c.183A>C	
Q61P	c.182A>C	
Q61K	c.181C>A	
Q61L	c.182A>T	
Q61R	c.182A>G	
K117R	c.350A>G	It detects 3 mutations but does not distinguish between them.
K117N	c.351G>T	
K117N	c.351G>C	
A146T	c.436G>A	
NRAS Reference	Detects NRAS region without any polymorphism/mutation	

ORDERING INFORMATION

Cat. No.	Description	Size
3B1296	TRUPCR® NRAS Mutations Detection Kit	24 Reactions
3B1273	TRUPCR® NRAS Mutations Detection Kit	48 Reactions
3B1274	TRUPCR® NRAS Mutations Detection Kit	96 Reactions

