

## TRUPCR® KRAS Mutations Detection Kit

### NEED

The KRAS gene encodes a small GTPase that plays a key role in transducing signals from the epidermal growth factor receptor (EGFR) to downstream effectors and thereby affects fundamental cellular processes, including proliferation, apoptosis, and differentiation. KRAS mutations are particularly common in colon cancer, lung cancer, and pancreatic cancer. In total, activating mutations in the KRAS genes occur in 15~30% of lung cancer and 20~50% of colorectal cancer, mainly in exons 2, 3 or 4. The most common mutations are found in codons 12, 13 and 61. The American Society of Clinical Oncology (ASCO) recently released its first Provisional Clinical Opinion (PCO) suggesting that KRAS gene mutation testing should be performed in patients with metastatic colorectal carcinoma to predict response to anti-EGFR monoclonal antibody such as cetuximab or panitumumab. The European Drug Administration Organization and US-FDA recommend the employment of a KRAS gene mutation test prior to the usage of targeted medicine cetuximab and sotorasib in the treatment of colorectal cancer. The updated guidelines now recommend testing tumors, both primary and metastatic, from all patients with stage IV disease (metastatic colon cancer) for the KRAS gene.

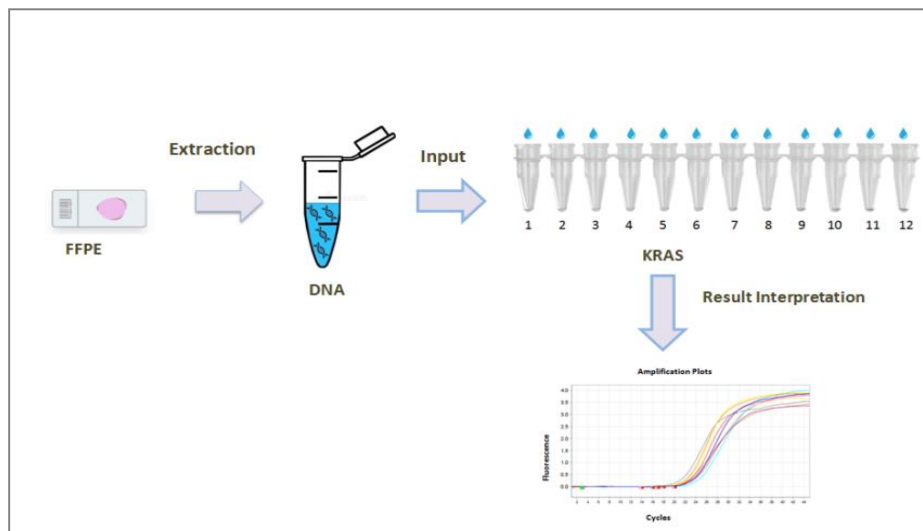
### SOLUTION BY TRUPCR®

The TRUPCR® KRAS Mutations Detection Kit is intended for the qualitative detection of KRAS 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 the KRAS mutations and a reference control gene of KRAS 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 22 different mutations in a single run that are found in codons 12, 13 and 61.

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 22 different mutations in a single run including differentiation of all relevant biomarkers recommended in guidelines.
- Sensitive to detect up to 1% - 5% mutation in KRAS 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   |
|----------------|---|---|
| KRAS G12C      | 34G>T   |   |
| KRAS G12S      | 34G>A   |   |
| KRAS G12R      | 34G>C   |   |
| KRAS G12V      | 35G>T   |   |
| KRAS G12D      | 35G>A   |   |
| KRAS G12A      | 35G>C   |   |
| KRAS G13D      | 38G>A   |   |
| KRAS A59x      | A59T (175G>A)   | It detects 3 mutations but does not distinguish between them. |
|                | A59E (176C>A)   |   |
|                | A59G (176C>G)   |   |
| KRAS Q61x      | Q61K (181C>A)   | It detects 5 mutations but does not distinguish between them. |
|                | Q61L (182A>T)   |   |
|                | Q61R (182A>G)   |   |
|                | Q61H (183A>C)   |   |
|                | Q61H (183A>T)   |   |
| KRAS K117x     | K117E (349A>G)  | It detects 4 mutations but does not distinguish between them. |
|                | K117R (350A>G)  |   |
|                | K117N (351A>T)  |   |
|                | K117N (351A>C)  |   |
| KRAS A146x     | A146T (436G>A)  | It detects 3 mutations but does not distinguish between them. |
|                | A146P (436G>C)  |   |
|                | A146V (437C>T)  |   |
| KRAS Reference | Detects KRAS region without any polymorphism/mutation |   |

**ORDERING INFORMATION**

| Cat. No. | Description                          | Size         |
|----------|--------------------------------------|--------------|
| 3B1295   | TRUPCR® KRAS Mutations Detection Kit | 24 Reactions |
| 3B1261   | TRUPCR® KRAS Mutations Detection Kit | 48 Reactions |
| 3B1262   | TRUPCR® KRAS Mutations Detection Kit | 96 Reactions |

