KRAS

London Health Sciences Centre
St JOSEPH'S HEALTH CARE LONDON
Pathology and Laboratory Medicine

Orderable - KRAS NGS

Turnaround Time: 15 days

Laboratory:
Molecular Diagnostics Lab

Requisition:
Refer to Pathology

Method of Analysis:
Mutation screening was performed by next generation sequencing (NGS) on the Ion Torrent technology using the Ion PGM™ System (ThermoFisher). Library preparation was performed as per manufacturers instructions using the Ion AmpliSeq™ Cancer Hotspot Panel v2 (ThermoFisher), which screens approximately 2800 COSMIC mutations of 50 oncogenes and tumor suppressor genes, including COSMIC mutations in KRAS (63), NRAS (35) and BRAF (76) and EGFR (123). Only findings in the clinically indicated genes are reported; currently BRAF for melanoma, EGFR for lung cancer, and KRAS,

Alternate Name(s):

ERAS
NRAS

Specimen:

FFPE

Collection Information:

Send blocks to pathology lab for cutting

Reference Ranges:

See report

Interpretive Comments:

The presence of K-ras gene (KRAS) and N-ras gene (NRAS) mutation has been shown to be associated with lack of clinical response to therapies targeted at EGFR, such as cetuximab and panitumumab. While clinical guidelines for RAS mutational analysis are evolving, recent evidence and guidelines suggest that all patients with stage IV colorectal carcinoma who are candidates for anti-EGFR antibody therapy should have their tumor tested for KRAS and NRAS mutations. Anti-EGFR antibody therapy is not recommended for patients whose tumors show mutations in KRAS codons 12, 13, 59, 61, 117 or 146, or NRAS codons 12, 13, 59 or 61. Current evidence suggests that the presence of BRAF mutation is suggestive of poor prognosis in colorectal cancer; however whether or not it is predictive of lack of clinical response to anti-EGFR monoclonal antibody therapies remains controversial. (PMID:2402483, 24687833, 25115304, 24996433)

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Storage and Shipment:

Deliver to lab at room temperature.

NRAS and BRAF for colon cancer. This assay has been internally validated to meet >99% sensitivity and specificity for mutations that are at 5% mutant allele frequency in the assessed DNA sample. Rarely, mutations are detected at <5% mutant allele frequency and these are confirmed using alternate methodology, including real-time quantitative PCR.

Test Schedule:
As required,
Monday to Friday 0800-1600 hours