

BRAF Mutation Detection

FOR DETERMINING PATIENT ELIGIBILITY FOR EGFR-PATHWAY TREATMENT

Clinical Background

- *BRAF* is a kinase-encoding gene in the RAS/RAF/MAPK pathway.
- Oncogenic mutations have been identified in codon 600, including the V600E mutation.

Indications for Ordering

- *BRAF* mutation status may be useful in determining patient eligibility for therapies that target the *EGFR* pathway.

Interpretation

- A positive result indicates the presence of a mutation within codon 600 of the *BRAF* gene.
- The presence of a *BRAF* mutation in a patient with melanoma suggests a positive response to therapy with *BRAF* inhibitors.
- For patients with metastatic colorectal cancer, the presence of a *BRAF* mutation contraindicates specific therapies, such as anti-*EGFR* therapies.

Limitations

- Mutations in other locations within the *BRAF* gene or in other genes will not be detected.
- Limit of detection for this assay is 10 percent mutant alleles.

Methodology

- Tumor tissue is microdissected and DNA extracted from sections of paraffin-embedded tissue blocks.
- A region of the *BRAF* gene, including codon 600, is amplified using polymerase chain reaction (PCR). Mutations status is determined by pyrosequencing.

Related Test

- [KRAS Mutation Detection with BRAF Reflex \(2001932\)](#)

References

1. Loupakis F, et al. KRAS codon 61, 146 and BRAF mutations predict resistance to cetuximab plus irinotecan in KRAS codon 12 and 13 wild-type metastatic colorectal cancer. *Br J Cancer* 2009;101:715–21.
2. Wellbrock C, Hurlstone A. BRAF as therapeutic target in melanoma. *Biochem Pharmacol* 2010;80(5):561–7.

Test Information

2002498 *BRAF* Codon 600 Mutation Detection by Pyrosequencing

For specific collection, transport, and testing information, refer to the ARUP website at www.aruplab.com.

For information on test selection, ordering, and interpretation, refer to ARUP Consult[®] at www.arupconsult.com.