Cquence
Colorectal Cancer Mutation Panel

Test type

NGS panel test

Background

It is well established that EGFR-targeted therapies such as cetuximab and panitumumab are ineffective against colorectal cancers harboring mutations in codons 12, 13 or 61 of *KRAS*. Recently, several studies have shown that other mutations in *KRAS* and *NRAS* can also indicate the resistance of EGFR-targeted therapies[1-3]. In addition, multiple studies have shown that BRAF mutation V600E correlates with a significantly worse prognosis and resistance to cetuximab and panitumumab[4-5]. Cquence Colorectal Cancer Mutation Panel is designed to screen all of these mutations. The panel has an estimated sensitivity of at least 15% mutant allele and an estimated specificity of >99%.

This panel delivers information on EGFR-targeted therapies against colorectal cancer in the three genes listed below.

Test specifications

Test code	Methodology	Specimen requirements	Turnaround time
OKC	Next-generation sequencing	10 FFPE unstained sections (6 µm) with at least 20% tumor content	10-14 days

Genes targeted (3 genes)

BRAF, KRAS and *NRAS*

References

1. *Douillard et al. Panitumumab-FOLFOX4 treatment and RAS mutations in colorectal cancer. N Engl J Med. 2013 Sep 12;369(11):1023-34.*
2. *Oliner et al. Analysis of KRAS/NRAS and BRAF mutations in the phase III PRIME study of panitumumab (pmab) plus FOLFOX versus FOLFOX as first-line treatment (tx) for metastatic colorectal cancer (mCRC). Journal of Clinical Oncology, 2013 ASCO Annual Meeting Abstracts. Vol 31, No 15_suppl (May 20 Supplement), 2013: 3511*
3. *Stintzing et al. Analysis of KRAS/NRAS and BRAF mutations in FIRE-3: A randomized phase III study of FOLFIRI plus cetuximab or bevacizumab as first-line treatment for wild-type (WT) KRAS (exon2) metastatic colorectal cancer (mCRC) patients. European Cancer Congress. Abstract 17. September, 2013.*
4. *Lochhead et al. Microsatellite instability and BRAF mutation testing in colorectal cancer prognostication. J Natl Cancer Inst. 2013 Aug 7;105(15):1151-6.*
5. *Toon et al. BRAFV600E immunohistochemistry in conjunction with mismatch repair status predicts survival in patients with colorectal cancer. Mod Pathol. 2013 Oct 25. [Epub ahead of print]*