

Source BioScience launches new tests for activating mutations of the *NRAS* and *BRAF* genes

Using our in-house expertise in genomics, Source BioScience has developed and validated pyrosequencing assays for the major activating mutations of the *NRAS* and *BRAF* genes, suitable for use in archival (FFPE) material. The *NRAS* test is the first of its kind commercially available in the UK.

These assays add to the growing portfolio of molecular tests that Source BioScience offers for analysis of cell signalling pathways, facilitating cancer drug development and patient stratification in clinical trials, and as companion diagnostics for patient selection for new targeted therapies.

NRAS

The RAS proteins are encoded by three closely related genes; *HRAS*, *KRAS*, and *NRAS*. These three genes are mutated in approximately 20% of human tumours, although mutations in *KRAS* account for 85% of these.

While *KRAS* mutations are common in cancers of the pancreas, colon and lung, mutations of the *NRAS* gene occur more frequently in melanoma and myeloid leukaemias.

Acquired mutations of the *NRAS* gene are found in approximately 20% of melanomas. These mutations, all of which activate their protein product constitutively, occur in codons 12, 13, and 61, those of codon 61 being by far the most frequent.

The cellular consequences of activating mutations of *NRAS* are well understood; constitutive activation of the MAPK and PI3K/AKT pathways leads to melanoma growth and progression. However, in melanoma, the impact of *NRAS* mutations on clinical parameters, such as overall survival, remains unclear.

Source BioScience now offers testing for *NRAS* mutations occurring in codons 12, 13, and 61, using proprietary pyrosequencing assays. These tests are suitable for FFPE material, which can be submitted as blocks or sections. All samples are evaluated for tumour burden prior to testing, and macrodissection carried out if required.

BRAF

The *BRAF* gene encodes another important signalling molecule B-raf, which plays a key role in the MAPK pathway. A single point mutation of the *BRAF* gene, referred to as the V600E mutation, is found in a variety of cancers. While the frequency of this mutation is around 10% in colorectal cancer, some reports suggest a frequency as high as 60-70% in cutaneous melanoma. Various studies indicate that the presence of mutant *BRAF* may impact adversely on prognosis in melanoma. In colorectal cancer, the presence of a *BRAF* mutation, like those of *KRAS*, is also thought likely to impact negatively on response to EGFR-targeted therapies such as cetuximab and panitumumab.

Source BioScience offers a pyrosequencing test for the V600E mutation in *BRAF*

For further information on our range of molecular diagnostic tests, as well as our Immunohistochemistry and *In Situ* Hybridisation capabilities, please contact us at enquiries@sourcebioscience.com.