

## Molecular In My Pocket™ ...

# ONCOLOGY: *Molecular Biomarkers in Cutaneous Melanoma*

**Samples to Test:** Primary or recurrent tumors; formalin fixed paraffin embedded tissue (FFPE).

Biomarker	Specific alterations Alternative terms	Indications	Result Interpretation Significance	Assays Techniques
<b>BRAF</b>	Mutations at codon 600 (eg. V600E, V600K)	Therapeutic	Associated with sensitivity to BRAF and/or MEK inhibitors	NGS, pyrosequencing, Sanger sequencing, genotyping, PCR-based assays
<b>KIT</b>	Mutations in exon 11 and 13 (eg. codons W557, V559, L576, K642), mutations in exon 17 (eg D816H); and amplification	Therapeutic	Exon 11 and 13 mutations are associated with sensitivity to KIT inhibitors  D816H mutation is associated with resistance to KIT inhibitors  KIT amplification is associated with resistance to KIT inhibitors	NGS, pyrosequencing, Sanger sequencing, PCR-based assays, microarray
<b>NRAS</b>	Mutations in codon 12, 13, 61	Prognosis Therapeutic	Associated with poor survival  May be associated with response to MEK inhibitors in some patients	NGS, pyrosequencing, Sanger sequencing, PCR-based assays

### Abbreviations:

**NGS:** Next Generation Sequencing

**Where to test:** Testing should be performed in the laboratories that are certified under clinical laboratory improvement amendments of 1988 (CLIA-88) as qualified to perform high complexity (molecular pathology) testing.

**References:** 1) National Comprehensive Cancer Network. Clinical Practice Guidelines in Oncology. Cutaneous Melanoma. Version 2.2021. April 4, 2021.

2) Elder DE, Massi D, Scolyer RA, et al, eds. WHO Classification of Skin Tumours, 4th ed. Vol. 11. Lyon, France: IARC; 2018.