SureSeq myPanel

A Sysmex Group Company

NGS custom Melanoma panel

Features

Hybridisation-based enrichment delivering unparalleled coverage uniformity

- Detect low frequency melanoma variants consistently with confidence

Bespoke panels with pre-optimised content

- Create your ideal panel and sequence only what's relevant for your research

Panel content designed with experts and from current literature

- Get the most comprehensive insight into disease-driving mutations

Complimentary Interpret NGS data analysis software

- Easy-to-use analysis solution for accurate detection of all variants

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Introduction

Cutaneous melanoma (CM) is the most dangerous form of skin tumour and causes 90% of skin cancer mortality[1]. With recurrent somatic mutations in *BRAF, NRAS, KIT* and *NF1* among the most common genetic aberrations underlying pathogenesis of melanoma, next generation sequencing (NGS) has been an invaluable tool in helping to characterise the overall genomic landscape of melanomas.

Choose your ideal melanoma NGS panel from our range of fully tested and optimised NGS panel content. Simply mix and match the genes or individual exons you require and get the most out of your sequencing runs. Use in conjunction with the SureSeq™ FFPE DNA Repair Mix* for improved NGS library yields, %OTR and mean target coverage from challenging FFPE derived samples.

Superior Coverage Uniformity

The most frequently activated pathway in melanoma is the mitogen-activated protein kinase (MAPK) pathway, often activated through mutations in the V600 codon of *BRAF* (in 35–50% of melanomas) and the Q61 codon of *NRAS* (10–25%)[2], with mutations being mutually exclusive (Figure 1).

Mutations of *KIT* are found in particular subsets of melanoma, where the mutations activate signal-transduction pathways (MAPK and PI3K) that ultimately lead to cell proliferation. Approximately 70% of *KIT* mutations identified in melanoma are found in exon 11, most commonly L576P.

Neurofibromatosis type 1 (*NF1*) is a relatively common tumour predisposition syndrome related to germline aberrations of *NF1*, a tumour suppressor gene. Recent studies have additionally shown *NF1* to play a critical role in somatic events in a wide range of tumours, including melanoma. The tumour suppressor function of neurofibromin is largely attributed to a small central region which comprises 360 amino acids encoded by exons 20-27a[3]. OGT's expert bait design offers excellent uniformity for all of these key genes associated with melanoma (Figure 2).

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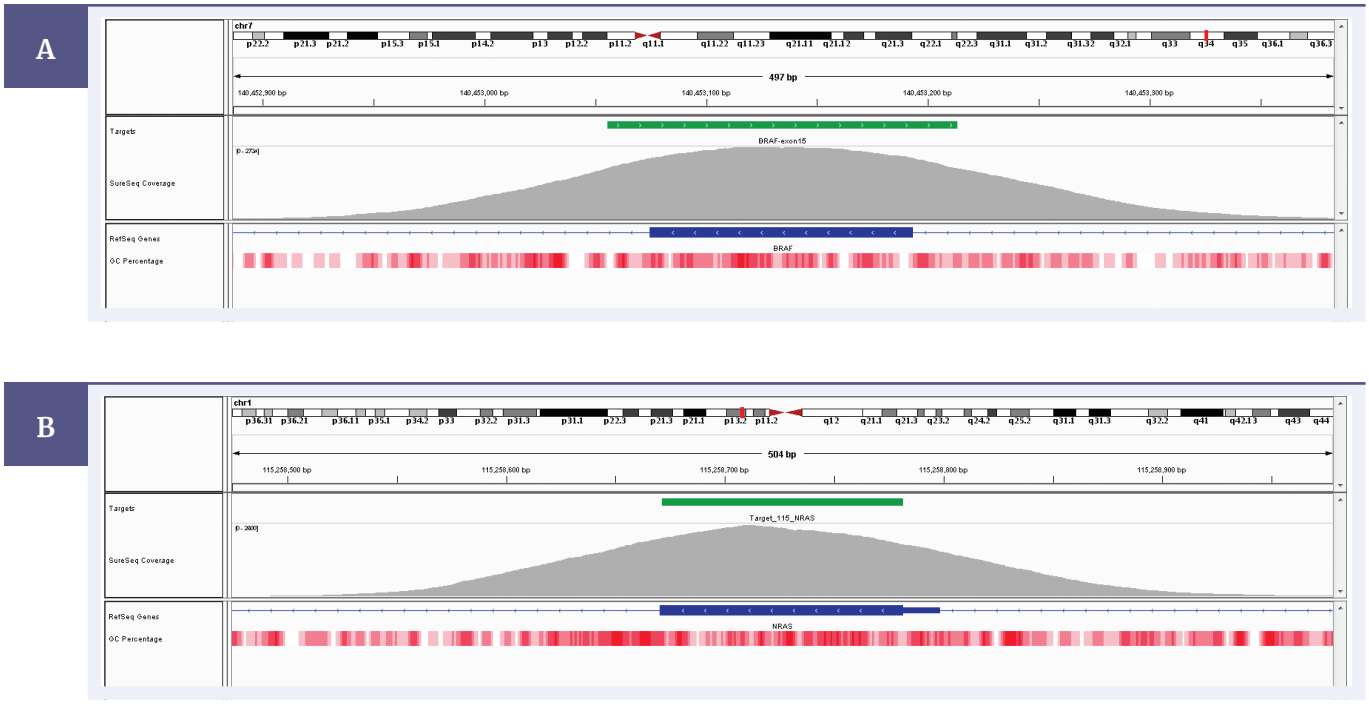

Figure 1: Illustration of the exceptional uniformity of coverage of A *BRAF* exon 15, B *NRAS* exon 2 with a SureSeq melanoma panel. Depth of coverage per base (grey). Targeted region (green). Gene coding region as defined by RefSeq (blue). GC percentage (red).

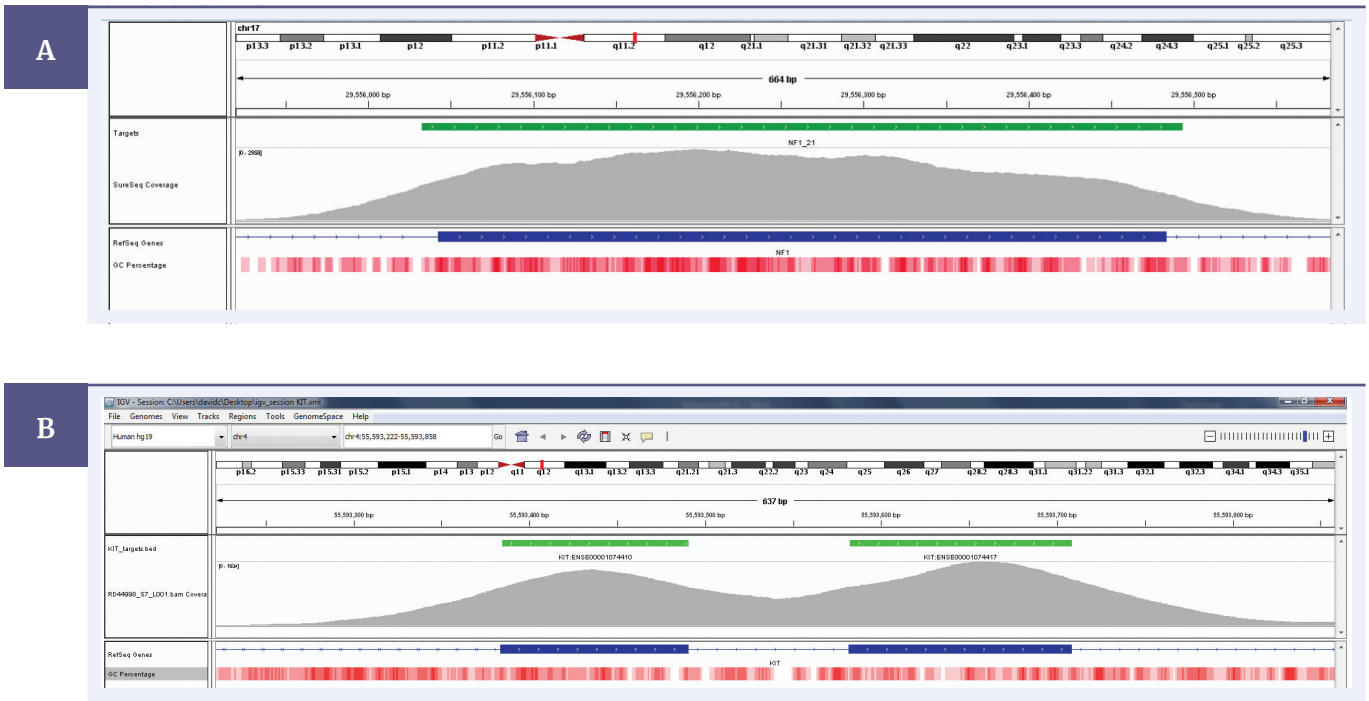

Figure 2: Even coverage of A *NF1* exon 21 and B *KIT* exons 10 and 11 with a SureSeq melanoma panel. Depth of coverage per base (grey). Targeted region (green). Gene coding region as defined by RefSeq (blue). GC percentage (red).

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Select from any of the following myPanel melanoma whole gene or exonic content below

BRAF	*KIT*	*NF1*[†]	*NRAS*

Getting started with your next SureSeq myPanel™ NGS Custom Cancer panel could not be simpler

Talk to us about your custom melanoma NGS panel requirements and let our expertise work in helping you to advance your cancer research

Ordering information

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Product	Contents	Cat. No.
SureSeq myPanel NGS Custom Melanoma Panel	Enrichment baits; Interpret Software	Various
SureSeq FFPE DNA Repair Mix*	Enzyme, mix and buffers sufficient for 16 FFPE DNA samples	500079
SureSeq NGS Library Preparation Complete Solution (16)	Bundle of 1x SureSeq NGS Library Preparation Kit (16), containing adaptors, PCR primers and enzymes, 1x SureSeq NGS Index Kit – Collection A, 1x SureSeq NGS Hyb & Wash Kit (16), 1x Dynabeads M270 Streptavidin (2ml) and 1x AMPure XP beads (10ml). Sufficient for 16 samples	500084
SureSeq NGS Library Preparation Complete Solution (48)	Bundle of 1x SureSeq NGS Library Preparation Kit (48), containing adaptors, PCR primers and enzymes, 1x SureSeq NGS Index Kit – Collection B, 3x SureSeq NGS Hyb & Wash Kit (16), 3x Dynabeads M270 Streptavidin (2ml) and 3x AMPure XP beads (10ml). Sufficient for 48 samples	500085

References

1. Garbe *et al.*, European Journal of Cancer 63 (2016) 201-217
2. Tsao *et al.*, Genes & Dev. 2012. 26: 1131-1155
3. Yap *et al.*, Oncotarget, 2014, Vol. 5, No. 15

*The SureSeq FFPE DNA Repair Mix can only be purchased in conjunction with SureSeq NGS panels, not as a standalone product.
†Due to the presence of pseudogenes in NF1, it is recommended that an orthogonal technique is used to verify any mutations detected.

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What binds us, makes us.

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