SureSeq

A Sysmex Group Company

Core MPN Panel

Features

Unparalleled uniformity and high depth of coverage

- Detect low-frequency SNVs and indels with confidence

Time savings

- Replace multiple single gene assays with a focused NGS panel

1 day from sample to sequencer

- Streamlined library preparation and rapid 30-minute hybridisation

Additional *BCR-ABL* fusion gene detection

- Customise your panel by adding *BCR-ABL* translocation content

Complimentary Interpret NGS data analysis software

- Easy-to-use analysis solution for accurate identification of all variants and translocations

Introduction

Myeloproliferative neoplasms (MPNs) are a heterogeneous group of diseases characterised by the overproduction of one or more types of blood cells. The SureSeq™ Core MPN Panel has been designed in collaboration with recognised cancer experts to detect somatic variants in 3 clinically relevant MPN-associated genes; *JAK2*, *MPL* and *CALR* (Table 1). The SureSeq Core MPN Panel provides researchers with a single, 1-day NGS workflow for studies into the diagnosis, aetiology and prognosis of MPNs.

Gene	Exon	Key variants
MPL	10	W515
CALR	9	insertions / deletions
JAK2	12	insertions / deletions, amino acid substitutions
JAK2	14	V617F

Table 1: The SureSeq Core MPN Panel targets 4 exons in 3 genes implicated in MPNs, covering various key MPN driver mutations.

The hybridisation-based SureSeq Core MPN Panel is able to consistently detect SNVs and indels down to 1% variant allele frequency (VAF), using a streamlined 1-day workflow. Facilitated by OGT's expert bait design, the panel delivers the turn-around time of an amplicon-based protocol with the superior coverage uniformity of a hybridisation-based panel, enabling confident detection of key MPN variants including a 52 bp deletion in *CALR* exon 9 and a 6 bp deletion in *JAK2* exon 12 (Figures 1 and 2).

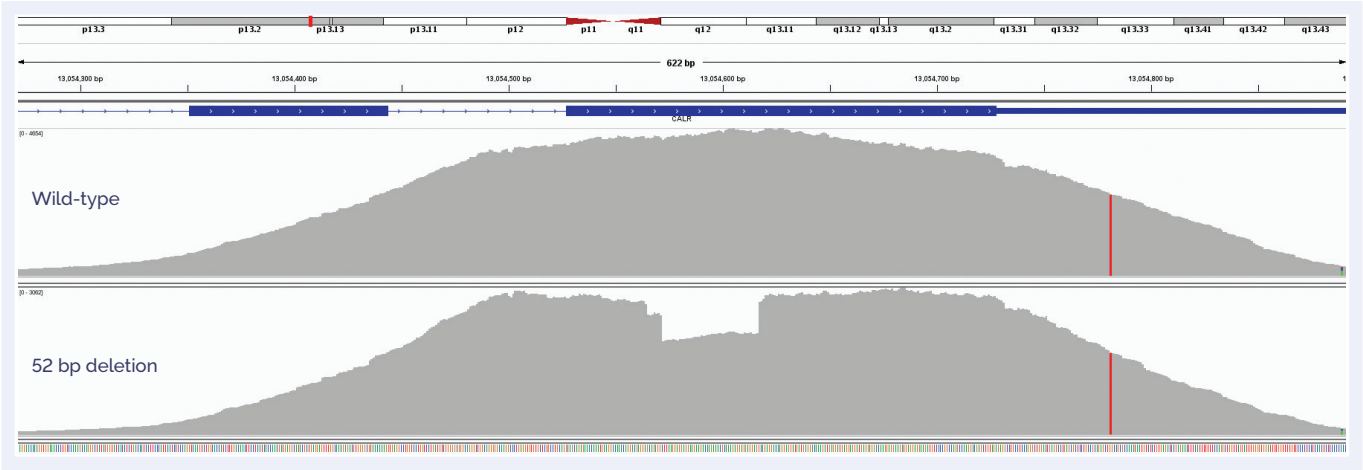

Figure 1: Detection of a 52 bp deletion (type 1) in exon 9 of *CALR* (bottom panel), compared to a wild-type sample (top panel).

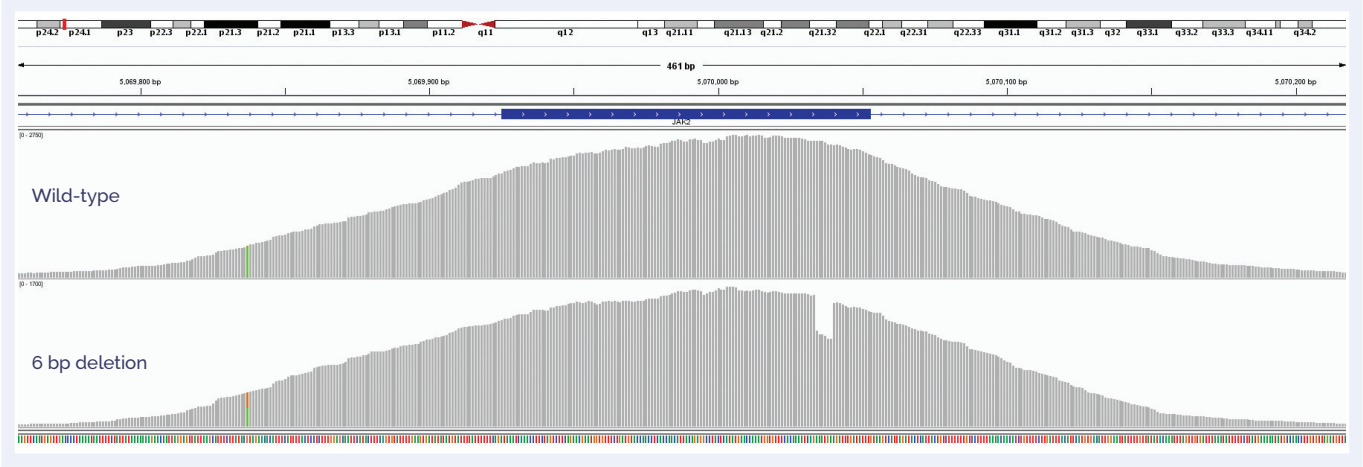

Figure 2: Detection of a 6 bp deletion in exon 12 of *JAK2* (bottom panel), compared to a wild-type sample (top panel).

Bespoke panel content including *BCR-ABL* fusion detection

The *BCR-ABL* gene fusion is formed following a balanced translocation of chromosome 9 and 22, generating the Philadelphia chromosome. Most MPNs are negative for *BCR-ABL*, however this translocation is a hallmark of chronic myeloid leukaemia (CML) (Figure 3).

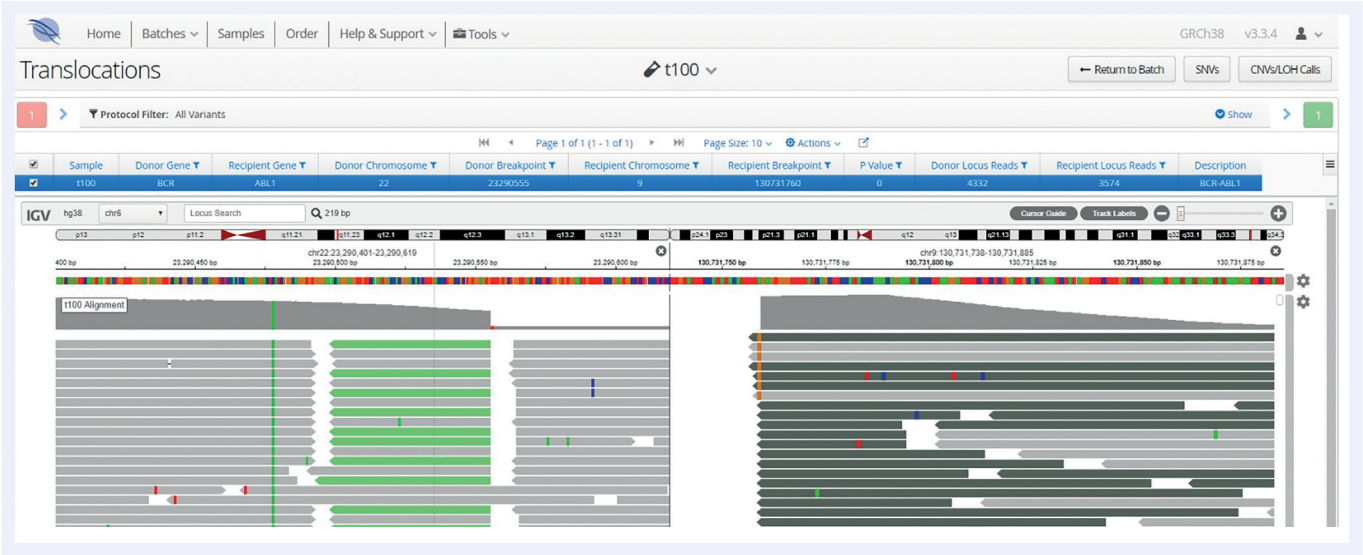

Figure 3: *BCR-ABL* translocation reported in Interpret. Split-reads covering both BCR (left panel) and *ABL1* (right panel) are detected, indicative of the *BCR-ABL* gene fusion.

With SureSeq myPanel™, our regularly updated, expert-curated library of pre-optimised cancer content, you can customise your SureSeq Core MPN Panel and add *BCR-ABL* fusion gene detection, as well as other myeloid content, to create your ideal custom SureSeq myPanel MPN Panel. Combine SNV and indel detection with translocation content and replace multiple assays with a single streamlined NGS workflow for a more comprehensive picture of all your MPN samples.

Complimentary Interpret NGS analysis software

Interpret is OGT's powerful and easy-to-use data analysis solution, facilitating analysis and visualisation of a wide range of somatic variants and structural aberrations. Designed to work seamlessly with all SureSeq panels, Interpret perfectly complements the SureSeq Core MPN Panel, delivering fast and accurate detection of SNVs and indels, as well as *BCR-ABL* and other translocation events for customised panels. Following detection, all variants can be readily visualised in the user-friendly variant browser, for an effortless translation of all your MPN data into meaningful results.

The Core MPN Panel in numbers

Feature	Specification
Target regions	*JAK2* exons 12 and 14
	CALR exon 9
	MPL exon 10
Panel size	1 kb
Mean target coverage	>1000x
Coverage uniformity	100% of bases at >20% of mean target coverage
DNA input recommended	>500ng high quality DNA
Limit of detection	SNVs / indels: 1% VAF
Workflow	30 minutes hybridisation, 1-day sample-to-sequencer
Samples per MiSeq® v2 run	48 samples / run

If you are looking for an extended myeloid panel or want to create your own custom SureSeq myPanel, talk to us and let our expertise help you advance your cancer research.

For more information about the SureSeq Core MPN Panel or customisation queries, visit ogt.com/CoreMPN or email contact@ogt.com.

Ordering information

UK +44 (0) 1865 856800

US +1 914 467 5285

contact@ogt.com

ogt.com

Product	Contents	Cat. No.
SureSeq Core MPN Panel (16)	Enrichment baits sufficient for 16 samples; Interpret Software	602002
SureSeq Core MPN Panel (96)	Enrichment baits sufficient for 96 samples; Interpret Software	602001
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

Acknowledgements

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What binds us, makes us.

Oxford Gene Technology Ltd., Begbroke Science Park, Woodstock Road, Begbroke, Oxfordshire, OX5 1PF, UK