Customized High-Throughput Genotyping Panel

Plant and animal research

DESCRIPTION

For molecular breeding, the availability and easy accessibility of genomic resources is a prerequisite. Although technological advances have provided a range of resources like molecular markers, genetic linkage maps, whole genome sequences, and transcriptomes, agricultural genomics has faced many challenges. Celemics provides the solution with the High-Throughput Genotyping Panel. We have utilized NGS methods, whereby a high number of regions of interest are simultaneously enriched using specifically designed probe, to provide new insights into different agricultural genomics research.

KEY FEATURES

1. NGS-based target enrichment sequencing assay	Utilize NGS-based target enrichment method for higher accuracy and cost-effectiveness compared to conventional methods such as conventional GBS, PCR, and microarray
2. Comprehensive analysis with high accuracy	Perform comprehensive assay of 100 to 10,000 markers with minimized false-negatives and false-positives Discover novel SNPs
3. Cost-effective analysis	Benefit from Celemics' library preparation kits, target capture technology, and multiplexing indices specifically designed for high-throughput genotyping
4. Outstanding performance regardless of various origins	Receive high-quality results enabled by species-specifically designed blocking oligos across all types of origins

PACKAGE COMPOSITION

Package name	Compositions		
Target Enrichment	Target capture Probe	-	
Standard	Target Enrichment reagents	Library prep Kit	-
All-In-One			Beads / Polymerase

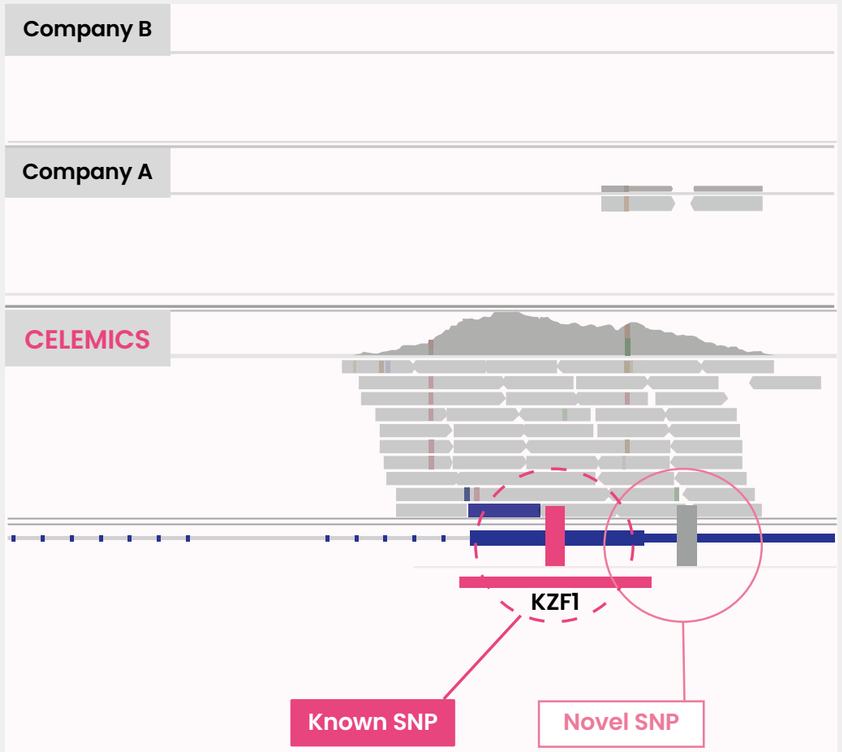
Package option	Options	
Pooling method	Single Reaction	Pre-capture Pooling
Library Preparation kits	Standard Kit	EP-kit
Hybridization Enhancer	Included	Not included

COMPARISON WITH CONVENTIONAL TECHNOLOGIES

	Advantages	Disadvantages
Conventional GBS	1. Sequencing of multiple samples due to lower amount of data required compared to WGS	1. Limited biomarkers available due to limited conserved regions, reducing overall resolution 2. Unable to detect SNPs in the restriction sites
Microarray	1. Higher reproducibility than conventional GBS	1. Hard to customize new targets (novel biomarkers) 2. Low flexibility to meet various kinds of genotyping
PCR	1. Cost-effective for low number of samples 2. Easy and fast analysis	1. Limited number of biomarkers to analyze at once 2. Inappropriate for mass-analysis of biomarkers
Celemics TE NGS	**1. Cost saving** : Highly cost-effective when assessing multiple samples **2. Flexible customization** : Novel biomarkers can be added or removed **3. Comprehensive analysis** : Including novel SNP discovery **4. Exceptional performance** : Celemics proprietary blocking oligo design technology **5. Wide compatibility** : Compatible with a wide range of number of samples and sample types	

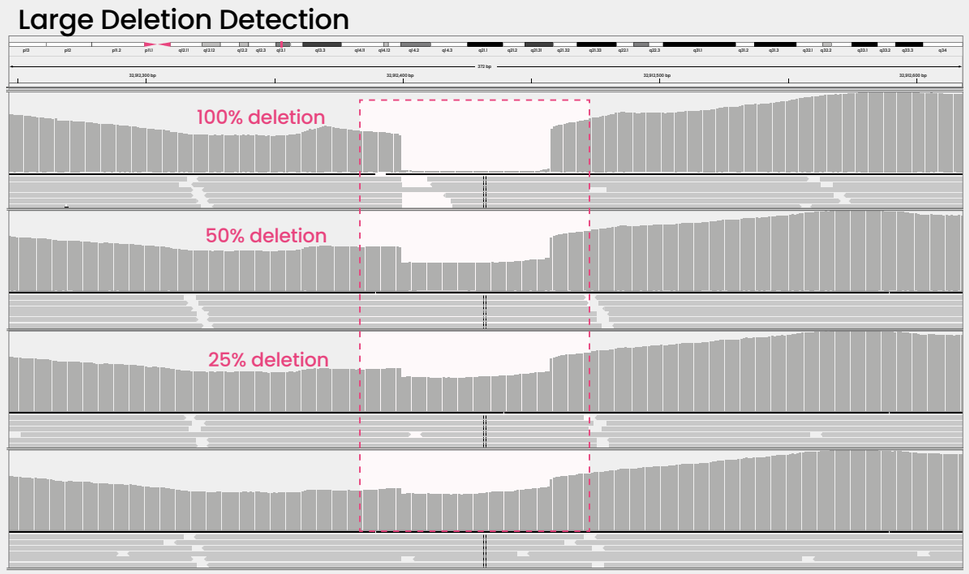
PERFORMANCE

Hybridization-based NGS target enrichment enables discovery of novel SNPs near target region



PERFORMANCE

Hybridization-based NGS target enrichment enables accurate analysis of all mutation types including large deletion and rearrangement.



**Artificially generated data used*

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