RAPID GENOMICS

FLEX-SEQ® EX-L

Fast, Focused, Flexible.

About Flex-Seq® Ex-L

Flex-Seq® Ex-L is an ultra high-throughput targeted genotyping platform for commercial, next-generation sequencing applications. Focusing on scalability paired with data accuracy, reproducibility, and completeness allows Flex-Seq® Ex-L to deliver industry-scale solutions for industry-scale genotyping.

Capable of targeting upwards of 20,000 DNA markers, Flex-Seq® Ex-L solutions are suitable for plant and animal breeding objectives including genomic selection, imputation, marker-assisted selection and parentage analysis.

Flex-Seq® Ex-L genotype data matches genotyping array (SNP chip) technology, ensuring consistency between legacy datasets. Genotyping data from other technologies can also be incorporated into Flex-Seq® Ex-L panels and novel, customer-specific genotyping markers can be developed for any species.

Flex-Seq® Ex-L is also applicable to large-scale population genetics research.

Full-service Flex-Seq® Ex-L genotyping solutions are delivered at Rapid Genomics starting from tissue or DNA to genotyping results, with custom data formatting options available for routine applications.

The ultra specific, ultra efficient, ultra high-throughput targeted genotyping solution for:

- Genomic selection
- Genome edit verification
- Marker-assisted selection & backcrossing
- Parentage testing
- Assessing population genetics & structure
- Traceability

Flex-Seq® Ex-L At A Glance

Fast
- Up to 2-week turnaround time – Tissue/DNA to SNPs

Focused
- Up to 98% marker recovery.
- Up to 99% on-target sequencing.
- 99% agreement between technical reps
- 98% agreement with array technology

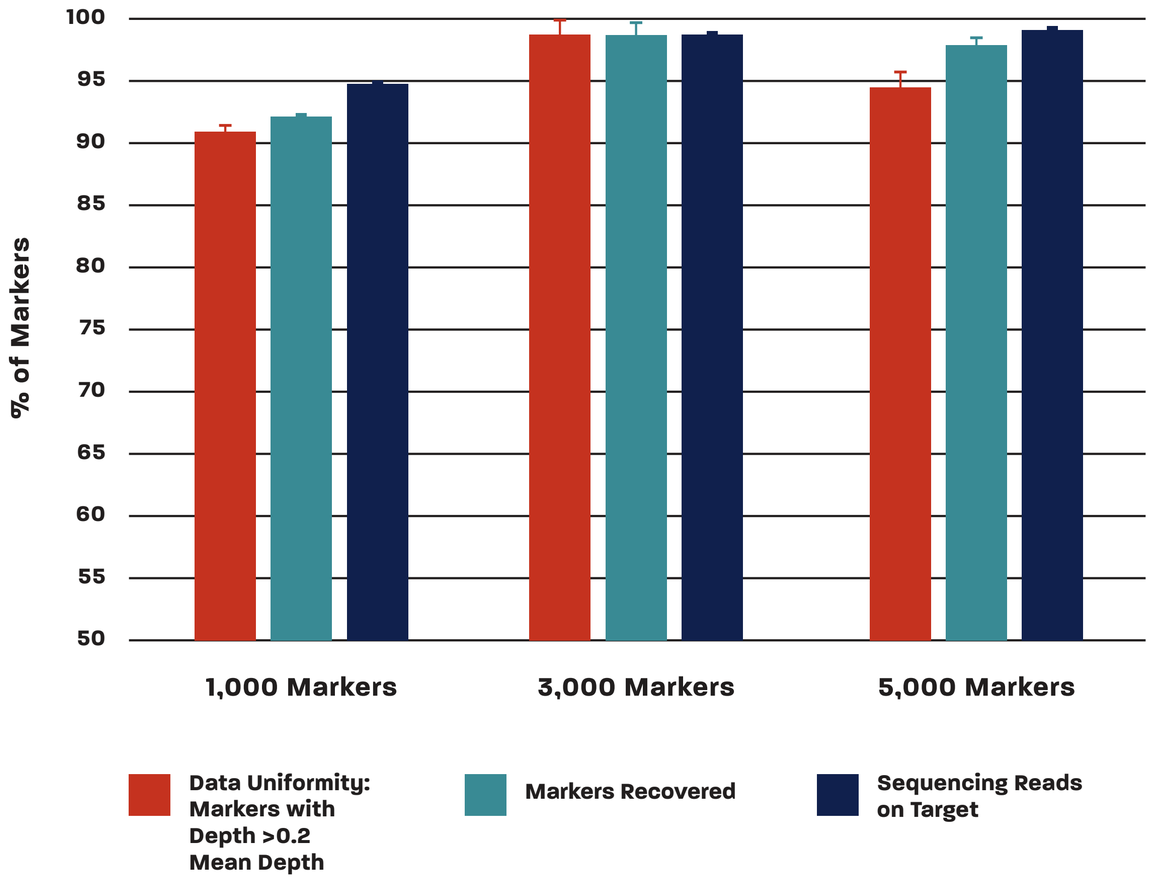
Flexible
- Update Flex-Seq® Ex-L marker panels for evolving needs
- Multiple sample types accepted
- Leaf tissue, TSUs, DNA & more

Sample Input Requirements	Flex-Seq® Ex-L Assays	Turnaround Time
25 mg tissue 100 ng DNA	>20,000 markers	2-3 Weeks

Flex-Seq® Ex-L Panel Performance

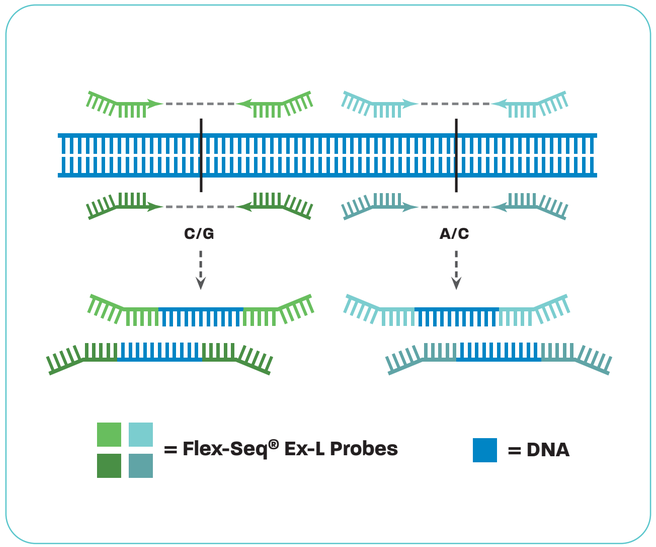
Summary metrics of genotyping results from three Flex-Seq® Ex-L marker panels. Data Uniformity displays the percentage of markers with >0.2x mean sequence depth (91% – 98%). Markers Recovered shows the percentage of markers (92% – 98%) with sufficient sequencing depth for accurate genotyping (i.e. 10X per haploid genome). Sequencing Reads on Target reflects the reaction specificity, with 95 – 99% of all aligned sequencing data mapping to the intended targets.

The combination of high marker recovery, data uniformity and reaction specificity ensures efficiency and overall completeness of genotyping results for any marker panel.

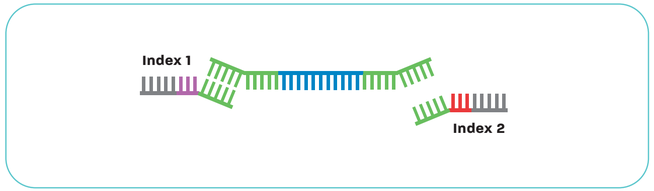


Flex-Seq® Ex-L Technology

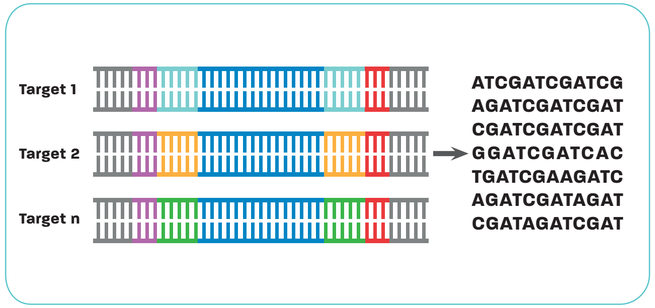
1 Design and Hybridize Probes to Sample DNA



2 Incorporate Next-Generation Sequencing Adapters and Sample Indexes



3 Sequence Flex-Seq® Ex-L Libraries



4 Process Data for Marker Identification and Additional Analysis

Sample 1	1 0 2 2 0
Sample 2	2 2 1 1 0
Sample 3	0 2 1 2 2
Sample n	1 2 0 1 2

Parentage Testing | Diagnostics | Genomic Selection

Using Flex-Seq® Ex-L

Flex-Seq® Ex-L genotyping follows 3 easy steps:

1 Panel Design & Planning

- Genotyping markers & goals
- Bioinformatic design service
- Design review & consultation

2 Panel Design Validation

- Validate genotyping results
- Data pipeline optimization
- Finalize panel design

3 Panel Design & Planning

- Genotyping markers & goals
- Bioinformatic design service
- Design review & consultation

LEADING A NEW ERA OF GENOMICS

At Rapid Genomics, the key to improving the future is within the secrets of the genome. Our mission is to expand global access to the technologies required for uncovering those secrets with the highest standards of accuracy and reliability. We provide flexible solutions to a range of commercial and research interests focused on agriculture, veterinary genomics, healthcare, and evolutionary biology. Our customers partner with us to advance their goals and, ultimately, strengthen the industries that do everything from producing our food to curing disease.

RAPID GENOMICS

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