

GeneMapper® Software v3.7

GeneMapper® Software is a flexible, high-performance genotyping software package that provides quality allele calls for all Applied Biosystems electrophoresis-based genotyping systems. This updated version adds amplified fragment length polymorphism (AFLP®) analysis and relative quantitation solutions to the suite of applications previously available.

Whether you are performing analysis using ABI PRISM® Human Linkage Mapping Set v2.5, SNPLex™ Genotyping System, ABI PRISM® SNaPshot® Multiplex Kit, AFLP® kit, custom microsatellites, or a combination of these approaches, you can generate results quickly and accurately. Finally, integration with BioTrekker™ Software, a genotype management system, significantly reduces the time and effort in the genotyping process.

One Software Application, Many Solutions

GeneMapper Software v3.7 is a versatile software package for genotyping applications from microsatellite to SNP analysis. As a result, you can mix-and-match genotyping solutions as your studies move from discovery to mapping and screening, while maintaining one consistent and accurate allele-calling application. Additionally, GeneMapper Software v3.7 has sample file compatibility



with a range of Applied Biosystems electrophoresis-based genotyping systems, meeting all throughput and budget needs.

Easy Genotype Scoring, Quality Control

With easy-to-use tools for data management and quality control, GeneMapper Software facilitates the accurate and reproducible genotyping of samples with highly automated analysis. Moreover, the software includes process quality values (PQVs) to aid in finding and fixing problems in sample preparation and analysis. With PQVs, you define quality values that allow the software to identify high, medium, and low quality data. This automatic analysis saves time by facilitating quick data review and simplifies data reduction.

Amplified Fragment Length Polymorphism Analysis

GeneMapper® Software v3.7 includes new features for AFLP® and other DNA fingerprinting analyses. The software rapidly and accurately identifies common and polymorphic peaks among large numbers of samples, while Genotype Quality (GQ) scores flag low quality sample data. When analysis is complete, the data is converted into a standard binary format (Figure 1), which can be exported as a tab-delimited text file for further analysis. Other features include the ability to generate panel data from sample files that have been added to a project and a custom plot functionality that facilitates the discrimination of DNA fragments with the same dye using custom plot colors.

Samples	Genotypes													
	Sample File	Panel	Dys	Allele 1	Allele 2	Allele 3	Allele 4	Allele 5	Allele 6	Allele 7	Allele 8	Allele 9	Allele 10	
1	AFLP_corn_F1	AFLP Tutorial Pan	B	0	1	0	1	0	0	0	0	0	0	
2	AFLP_corn_P1	AFLP Tutorial Pan	B	1	1	0	0	1	0	0	1	1	0	
3	AFLP_corn_P2	AFLP Tutorial Pan	B	1	0	1	1	1	1	1	0	1	1	

Figure 1. Obtain binary scoring of alleles with the new AFLP® analysis.

	Sample File	Analysis Me...	Size Standard	Marker	Allele 1	Height 1	Allele 2	Height 2	Peak Height ...	LOH	LOH candid...
1	Healthy1_A0...	Microsatellite...	GS500(-250)...	4	134	372	149	176	2.1136363		
2	Tumor1_B01...	Microsatellite...	GS500(-250)...	4	134	247	149	112	2.205357	1.0433948	
3	Healthy1_A0...	Microsatellite...	GS500(-250)...	1	120	529	122	356	1.485955		
4	Tumor1_B01...	Microsatellite...	GS500(-250)...	1	120	288	122	161	1.7888199	1.2038183	
5	Healthy1_A0...	Microsatellite...	GS500(-250)...	5	162	687	171	453	1.4223803		
6	Tumor1_B01...	Microsatellite...	GS500(-250)...	5	162	454	171	186	2.4408803	1.7160633	Candidate
7	Healthy1_A0...	Microsatellite...	GS500(-250)...	8	147	714	149	452	1.579546		
8	Tumor1_B01...	Microsatellite...	GS500(-250)...	8	147	511	149	203	2.5172415	1.5935478	Candidate

Figure 2. Identify LOH candidates with the new Report Manager functionality.

Relative Quantitation

Scoring samples for microsatellite instability and loss of heterozygosity (LOH) is easier than ever due to GeneMapper Software's new, convenient Report Manager feature that can be used to perform calculations for relative fluorescent quantitation using peak heights across samples.

The Report Manager feature facilitates the typical multi-step, user-defined calculations necessary to determine values for peak-height ratios, and performs a final analysis to identify LOH candidates (Figure 2). These complex calculations can be saved as a report setting and applied to data for all subsequent assays facilitating an easy and streamlined workflow for even large amounts of data.

Optimized for Analysis of SNPlex™ System Data

To expedite analysis of SNPlex™ System data, GeneMapper® Software offers intuitive graphical tools and user-defined quality-control settings to streamline analysis and interpretation. This updated GeneMapper Software provides allele calling in a cluster-plot

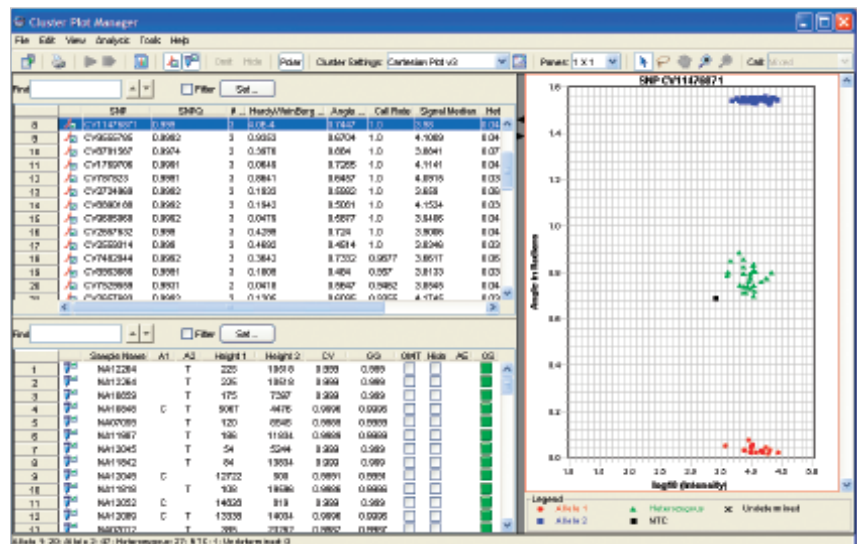


Figure 3. Cluster plot analysis and display for SNPlex™ System genotyping data provides easy-to-interpret visualization of allele calls.

view, making it easy to survey large volumes of data (Figure 3).

A new clustering algorithm improves calling accuracy by normalizing data to account for sample and SNP variation. The software contains SNPlex System-specific PQVs for easy data review and troubleshooting. Using default or custom settings give you full control over your data set, and lets you apply your own criteria for data exclusion.

Integrated Genotype Management

BioTrekker™ Software from Applied Biosystems allows multiple users of GeneMapper® Software to download finished genotyping data into a single results database. Also, distributed computing is achieved through GeneMapper Software's remote auto-analysis and BioTrekker Software's marker genotype download functionalities. This distributed computing

System Requirements

Component	Optimum Requirements	Minimum Requirements
Genotype Analysis Workstation	<ul style="list-style-type: none"> - Intel Pentium® IV processor, 2.4GHz - 1 GB of RAM - Two 120-GB hard drives - 20/48x IDE CD-ROM - 10/100 NIC with RWU (internal) 	<ul style="list-style-type: none"> - Intel Pentium® IV processor, 733MHz - 512 MB of RAM - 20/48x IDE CD-ROM - 10/100 NIC with RWU (internal)
Monitor	<ul style="list-style-type: none"> 800 x 600 pixels size 17-inch color monitor 	<ul style="list-style-type: none"> 800 x 600 pixels size 17-inch color monitor
Operating System	<ul style="list-style-type: none"> One of the following operating systems: - Microsoft Windows® 2000 Professional operating system, Service Pack 4 or higher - Microsoft Windows® XP Professional operating system, Service Pack 1 or higher 	<ul style="list-style-type: none"> - Microsoft Windows® 2000 Professional operating system, Service Pack 3 or higher

allows you to collect data on one computer and analyze data on any workstation within your network, facilitating more efficient analysis.

Once you download your genotyping data to BioTrekker Software, you can create and manage consensus genotypes, perform concordance and quality-control tests, archive data, and export data to text files for further analysis. BioTrekker Software can also export data for linkage analysis and import marker genotypes from external sources via an XML file.

Security Features

Applied Biosystems understands that data integrity and security is important. GeneMapper Software was designed with security and audit features, providing three levels of access, to assist in meeting 21CFR11 requirements. The updated version is compatible with Windows® XP, allowing you to utilize the latest security features of that operating system.

Platforms with Sample File Compatibility

Platform	Configuration
ABI PRISM® 310 Genetic Analyzer	1 capillary
Applied Biosystems 3130 Genetic Analyzer	4 capillaries
ABI PRISM® 3100- <i>Avant</i> Genetic Analyzer	4 capillaries
Applied Biosystems 3130 <i>xI</i> Genetic Analyzer	16 capillaries
ABI PRISM® 3100 Genetic Analyzer	16 capillaries
Applied Biosystems 3730 DNA Analyzer	48 capillaries
Applied Biosystems 3730 <i>xI</i> DNA Analyzer	96 capillaries
ABI PRISM® 3700 DNA Analyzer	96 capillaries
ABI PRISM® 377 DNA Sequencer	gel-based, 24 lanes

Ordering Information

Description	Quantity	P/N
GeneMapper Software v3.7	Initial License	4363138
GeneMapper Software v3.7	Additional License	4363137
GeneMapper Software v3.7	Upgrade	4363136
GeneMapper Software v3.7	Conversion*	4363135
GeneMapper Software v3.7	30 Day Demo	4324610
GeneMapper Analysis Workstation		4319551

*Conversion from GeneScan® Software or Genotyper® Software to GeneMapper® Software v3.7.

For software packages with new and or upgraded instrument orders, contact your sales representative.



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GeneMapper Software has not undergone specific developmental validation for human identification applications. Human identification laboratories analyzing single-source or parentage samples which choose to use GeneMapper Software for data analysis should perform their own developmental validation studies.

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