

EVALUATION OF AmpF/STR® PCR AMPLIFICATION KITS FOR USE WITH THE ABI PRISM® 3100-AVANT GENETIC ANALYZER

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The ABI PRISM® 3100-Avant Genetic Analyzer is a medium-throughput four-capillary electrophoresis system that is capable of automatically processing hundreds of samples per day. This instrument provides laboratories performing DNA fragment analysis and sequencing analysis with throughput capabilities that surpass a single capillary instrument. The 3100-Avant Genetic Analyzer can quadruple the data generated in a 24-hour period from a single capillary instrument. Additionally, the 3100-Avant Genetic Analyzer automatically imports the plate name, sample information, and sample-well location in the system's software, thereby saving time and minimizing duplicate input of identical information. Furthermore, the data generated from the 3100-Avant Genetic Analyzer is compatible with already existing software applications such as GeneScan® software and Genotyper® software. If the throughput needs in a laboratory increase, the 3100-Avant Genetic Analyzer can be upgraded to the 16-capillary 3100 Genetic Analyzer, which is a validated instrument system for DNA fragment analysis using the AmpF/STR® kits. The 3100 Genetic Analyzer and the 3100-Avant Genetic Analyzer share a number of the same components including the CCD camera and consumables, thereby facilitating the upgrade pathway to 16 capillaries.

The 3100-Avant Genetic Analyzer can separate and detect both 4-dye and 5-dye AmpF/STR® kit products. Data from both dye-combination kits will be presented to include the AmpF/STR® Profiler Plus® (4-dye), AmpF/STR® SGM Plus® (4-dye), and the AmpF/STR® Identifiler® (5-dye) PCR Amplification Kits. The ABI PRISM® 3100-Avant Genetic Analyzer system can separate, detect, and analyze the fluorescently labeled DNA fragments in four (4) parallel capillaries in one run of 45 minutes. Experiments were performed on the 3100-Avant Genetic Analyzer using the AmpF/STR® kits to evaluate the following: sizing precision, peak resolution, sensitivity, and mixtures. The additional parameters evaluated were injection time, run temperature, and run voltage.

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