

**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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