

PowerPlex® 16 Training and Troubleshooting Guide

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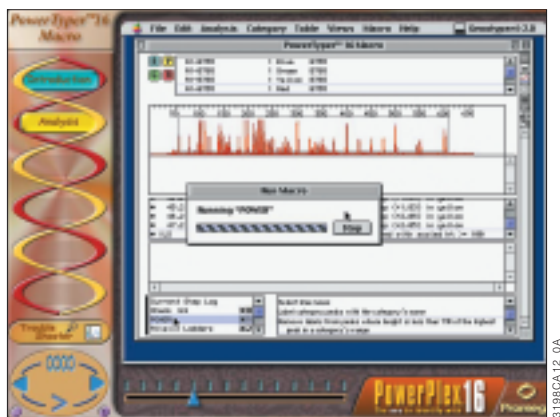
The PowerPlex® 16 System^(a,b) is an STR megaplex designed to amplify 15 STR loci plus Amelogenin in one reaction. We are introducing the new PowerPlex® 16 Training and Troubleshooting Guide on CD-ROM to assist those using the PowerPlex® 16 System on the ABI PRISM® 310 Genetic Analyzer or the 377 DNA sequencer. This CD takes a sequential approach, starting with an introduction to the system followed by a step-by-step tutorial. We have also included a troubleshooting section with electropherograms representing common problems one may encounter using the system. References are also included that may be useful to the analyst. The CD is compatible with both Macintosh® and Windows® formats.

The CD begins with an introduction to the loci and the internal lane standard included with the PowerPlex® 16 System. This introduction is followed by a section on DNA extraction and amplification. A step-by-step protocol for setting up amplification reactions is included in the DNA amplification section. Different thermal cycler conditions are also addressed. The next section discusses matrix generation. Both ABI PRISM® 310 Genetic Analyzer and the 377 DNA sequencer protocols follow a general introduction on why and when a matrix is generated. Instructions on instrument preparation, matrix sample preparation, electrophoresis and detection, and matrix generation are presented for both platforms, including use of the ABI PRISM® collection software and the GeneScan® analysis software.



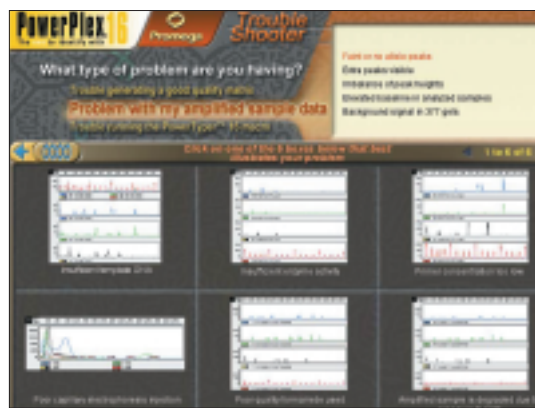
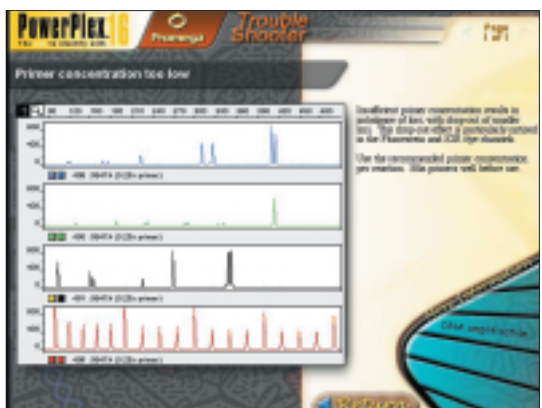
Once a matrix is generated and the samples have been amplified, the next step is sample detection on the instrumentation. Demonstrations of sample detection on both instrument platforms are presented on the CD, including instrument preparation, sample preparation and sample electrophoresis. For the ABI PRISM® 310 Genetic Analyzer, software examples demonstrate how to set up the sample sheet and modify the injection list. For the ABI PRISM® 377 DNA sequencer, videos showing the pouring of a gel as well as instrument setup are included, in addition to the collection software examples.

Following sample detection, it is necessary to analyze the raw sample data. The PowerPlex® 16 CD demonstrates the use of the GeneScan® analysis software. Software demonstrations take the user step-by-step through the process of reviewing raw data, setting analysis parameters, assigning a size standard and analyzing the sample files. A discussion of relative fluorescence unit variations between different detection instruments is included.



To facilitate analysis of the data generated with the PowerPlex® 16 System, we have created a macro to allow automatic assignment of genotypes using the ABI Genotyper® software. After samples have been amplified using the PowerPlex® 16 System, detected using the ABI PRISM® 310 Genetic Analyzer or 377 DNA sequencer, and analyzed using the GeneScan® analysis software, the sample files can be imported into the Genotyper® program and analyzed using the PowerTyper™ 16 Macro. The CD demonstrates the steps necessary for successful use of the PowerTyper™ 16 Macro.

A troubleshooting section is also included on the CD. This contains representative electropherograms to assist in troubleshooting problems that may occur. A prompt for the troubleshooting section is available from each section within the CD. Once a description of the problem is selected, representative electropherograms are displayed. Clicking on an electropherogram displays an enlarged view of the image, as well as an explanation of the problem and discussion of potential solutions. When applicable, the troubleshooting section will also refer the user to portions of the instructional section of the CD that may assist in addressing the problem.



The PowerPlex® 16 CD uses digital video movies to demonstrate the use of the PowerPlex® 16 System. In order to play these movies, QuickTime™ must be installed. QuickTime™ version 4, can be installed from this CD. Earlier versions of QuickTime™ may need to be upgraded. The CD (Cat.# CD002) is available free of charge by contacting your local Promega Branch or Distributor.

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(a,b) Refer to the patent and disclaimer statements on page 2.