

STR Capillary Electrophoresis Training – Lessons from Our Experience

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The CA Department of Justice has recently completed validation of the Profiler Plus™ short tandem repeat (STR) system on the ABI 310 capillary electrophoresis instrument for casework and data bank analysis (Perkin-Elmer Applied Biosystems, Foster City, CA). In order to implement the system into both our casework and data bank programs, an STR CE training program was developed.

The goals of the STR training were:

1. To provide a foundation for understanding the biology, genetics and forensic applications of STRs,
2. To provide training so students can Amplify STRs, set up the CEs for detection, and perform STR data analyses using GeneScan® and Genotyper® software, and
3. To provide training for a sub group of the students so they can review data bank STR results as technical reviewers.

A series of lectures/assignments and laboratories included topics on:

1. The biology of STRs,
2. PCR and amplification set-up,
3. Introduction to CE,
4. CE set-up and collection software,
5. Gene Scan,
6. Genotyper, and
7. Secondary and technical review.

Training included assignments that were collected and reviewed. The formal lectures/lab demos were conducted every two weeks by the appropriate trainers. Reading and assignments with demonstration of knowledge in the form of presentations, written assignments, practical exercises in the laboratory and completion of all needed runs and analyses of the practice samples were scheduled over a 10 week period. A group of instructors was set up as a help desk for students during their training.

The technical outlines of the STR training, and results and feedback will be presented. Furthermore, future strategies on STR training will be outlined. Any laboratory representatives that have STR training guidelines are encouraged to visit this poster to provide an electronic mail address to distribute any training outlines/experiences that may be useful for other laboratories.