

SDPD Forensic Science Section – Forensic Biology Unit

Validation of the Genemapper ID-X v1.4 Software

Comparison to GMID-X v1.1.1

Introduction

GeneMapper ID-X Software version 1.4 can process data from .fsa files generated on 3130 Genetic Analyzers as well as .hid data files generated on 3500 Genetic Analyzers. It is capable of processing six-dye fragment analysis, which is necessary for the Applied Biosystems GlobalFiler PCR Amplification kit.

A new feature includes a Y-marker check box in the Panel Manager. This checkbox is defaulted for DYS391 and the Yindel in the GlobalFiler kit. There is a new Amelogenin Cross Check PQV (ACC) that functions to cross reference Amelogenin and any Y-maker results and flag concordance. Refer to the Life Technologies User Bulletin (Part Number 4477684 Rev. A) for additional features such as disabling spike detection for samples and controls, modified allele number PQV, modified mixture analysis functionality, and modified duplicate homozygous allele label functionality.

Materials and Methods

To determine whether GeneMapper ID-X Software version 1.4 produces comparable results to GeneMapper ID-X Software version 1.1.1, which has been in use in the Forensic Biology Unit since 2009, a comparison of .fsa raw data was interpreted with the two versions. Raw data from 20 (prior case work) samples was imported into each version and an evaluation of allele call, peak height, base pair size, and data point size was performed.

Results

Raw data from 20 (prior case work) samples (previously analyzed with Identifiler Plus) was imported into each version of the software. The data was analyzed with the default Identifiler Plus Panels and Bins. An evaluation of allele call, peak height, base pair size, and data point size was performed. This information was equivalent between version 1.1.1 and 1.4. Results can be observed in attached table.

Conclusions

The algorithms and coding used in the two versions of the software were demonstrated to produce equivalent data. Given the equivalence of the software versions, GMID-X v1.4 should be considered as a valid software package for analyzing all previous data from the 3130s.