Abstract 8

PERFORMANCE OF THE AMPFℓSTR® MINIFILER™ PCR AMPLIFICATION KIT WITH DNA RECOVERED FROM ENVIRONMENTALLY EXPOSED TISSUES

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In 1999 Frank and Llewellyn used the AmpFℓSTR® Profiler Plus® PCR Amplification Kit in a time course study. Paired human rib samples were placed on the surface of the ground or buried at a depth of 30 cm for periods of time ranging from 2 weeks to 17 months. Muscle and soft tissue were then collected from each sample. Each bone was cut open and marrow collected as a second tissue. Cleaned bone was the third tissue collected from each sample in the study. DNA was isolated from the three tissue fractions for each environmentally exposed sample and quantified using the QuantiBlot® kit. When available, approximately 2 ng was targeted for Profiler Plus® amplification.

DNA from the 1999 exposed tissue study was maintained at -20C. Samples with sufficient volume were quantified a second time using the Quantifiler® Human DNA Quantification Kit. Applied Biosystems provided the AmpFℓSTR® MiniFiler™ PCR Amplification Kit to the Illinois State Police Research and Development Laboratory for evaluation of the exposed tissue DNAs. Precision, sensitivity, reproducibility, mixture and specificity studies were completed before amplifying the exposed tissue DNA. Results were defined using the ABI PRISM® 310 Genetic Analyzer with Genemapper® *ID* version 3.2 software. The number of loci defined using the MiniFiler™ assay increased for environmentally exposed tissues in each treatment set.

Two samples were exposed for 8 weeks. Of ten exposed tissue extracts available for analysis two increased from Profiler Plus® results not detected (ND) to a partial MiniFiler™ profile. One extract increased from Profiler Plus® ND results to a complete MiniFiler™ profile. One extract increased from partial Profiler Plus® results to a complete MiniFiler™ profile. No gain was recorded for the other six sample extracts tested.

Two samples were exposed for 10 weeks. Eight extracts were available from the ten week exposure. One extract increased from Profiler Plus® ND results to a partial MiniFiler™ profile. Four extracts increased from partial Profiler Plus® results to a complete MiniFiler™ profile including one extract which increased from 1 locus defined by Profiler Plus® to a complete MiniFiler™ profile. No gain was recorded for the other three sample extracts tested.

Two samples were exposed for 17 months. Of the eight extracts available for study in this set three extracts increased from Profiler Plus® ND results to a partial MiniFiler™ profile. One extract increased from Profiler Plus® ND results to a complete MiniFiler™ profile. One extract increased from partial Profiler Plus® results to a complete MiniFiler™ profile. No gain was recorded for the other three sample extracts tested.