

## Abstract 16

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### **SIMPLIFIED LOW COPY NUMBER DNA ANALYSIS BY POST PCR PURIFICATION**

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Frequently evidentiary items contain an insufficient quantity of DNA to obtain complete or even partial DNA profiles using standard forensic genotyping techniques. Here, various methods of post PCR purification were evaluated for their effects on the sensitivity of fluophore-based allelic detection. A method of post PCR purification is described which increases the sensitivity of standard 28 cycle PCR such that low copy number DNA templates (<100 pg DNA) can be analyzed. Full profiles were consistently obtained with as little as 20 pg template DNA without increased cycle number. In mock case type samples with dermal ridge fingerprints, genetic profiles were obtained by amplification with 28 cycles followed by post-PCR purification whereas no profiles were obtained without purification of the PCR product. Allele drop-out, increased stutter, and contamination (allele drop-in) typical of LCN analysis were observed. A single incident of contamination was observed in a reagent blank (not duplicated upon re-amplification) however, no contamination was observed in negative amplification controls.