DOMESTIC CAT HAIRS: DNA YIELD FROM SINGLE HAIRS (WOOL AND GUARD/SHED AND PLUCKED), SUCCESS RATE IN AMPLIFYING STR AND mtDNA TARGETS, ESTIMATING DNA YIELD USING MULTICOPY TARGET

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One third of households in the United States provide homes to about 65 million cats. Domestic cat hairs are often associated with crime scenes. The development of cat specific STR loci and their incorporation into a genetic linkage map of *Felis catus* creates enormous forensic potential for the genetic individualization of a species integral to our daily lives. The success of genotyping single hair animal specimens will largely be dependent on DNA yield. Previous estimates from a small sample set of high quality hairs with visible roots yielded 15-30 nanograms DNA/hair. Animal hairs fall into 3 morphological categories: guard, intermediate, and wool hairs, with graded potential for genotyping. To estimate the success rate of STR and mitochondrial DNA genotyping, DNA was isolated from 10 guard and 10 wool hairs, both with and without visible roots, from each of 5 different cats. DNA yield and the success rate of genotyping STR and mitochondrial targets was estimated by quantitative PCR/TaqMan assay. The potential of predicting STR genotyping success by quantitative PCR of a multicopy mitochondrial DNA sequence is also reported.