# PREDICTION OF HUMAN PIGMENTATION USING SINGLE NUCLEOTIDE POLYMORPHISMS (SNPs) MARKERS

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Current methods for forensic DNA analysis require identification of a suspect for comparison purposes. The ability to determine the physical characteristics of the source of a crime scene sample would provide important investigative information. Forensic DNA profiling is a rapidly evolving field and in the last few years the concept of Forensic Molecular Photofitting has emerged. This new area seeks to obtain additional information from a DNA sample regarding the physical appearance of a person, such as skin, eye and hair pigmentation, as well as facial morphology.

To date most work in this area has concentrated on pigmentation, since the genetic basis of hair, skin and eye colour is quite well understood. The goal of this study is to identify a set of single nucleotide polymorphisms (SNPs) involved in normal pigmentation and craniofacial variation and use these to develop a robust, phenotypically informative forensic assay.

We have developed a SNP assay and genotyped this set of candidate SNPs using samples of known pigmentation phenotypes as well as US population group samples. The SNP panel was evaluated for statistically significant associations with pigmentation phenotypes. The panel has also been assessed for its predictive ability. The results of these analyses will be discussed. ⌘