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Genotyping of Polymorphisms in Alcohol and Aldehyde Dehydrogenase Genes by Direct Application of PCR-RFLP on Dried Blood without DNA Extraction

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We have developed a simple, labor-saving, inexpensive, and rapid single nucleotide polymorphism (SNP) genotyping method that works directly on whole human blood. This single-tube genotyping method was used to successfully and reliably genotype *ADH1B* and *ALDH2* polymorphisms without DNA isolation using a 1.2-mm disc of dried blood and the KOD FX PCR enzyme kit. SNP genotyping was performed by a polymerase chain reaction–restriction fragment length polymorphism (PCR-RFLP) method. In addition to the labor and expense advantages, the possibility of sample contamination was considerably decreased, since the DNA extraction step was eliminated. In the post-genome era, a simple and inexpensive method for diagnostic analysis is in high demand, and this method will be very useful for genetic diagnoses in biological and medical laboratories.

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