



A multiplex panel of short-amplicon insertion-deletion DNA polymorphisms for forensic analysis

V.R.D. Santos^{1,2}, H.B. Pena¹ and S.D.J. Pena^{1,3}

¹GENE - Núcleo de Genética Médica, Belo Horizonte, MG, Brasil

²Polícia Civil de Minas Gerais, Instituto de Criminalística de Minas Gerais, Belo Horizonte, MG, Brasil

³Departamento de Bioquímica e Imunologia, Universidade Federal de Minas Gerais, Belo Horizonte, MG, Brasil

Corresponding author: S.D.J. Pena

E-mail: spena@gene.com.br

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ABSTRACT. We have previously developed a panel of 40 insertion-deletion (INDEL) human DNA polymorphisms that was proven to adequately cover the span of global human genetic diversity. The panel was found to have very low matching probabilities with respect to both the global and Brazilian populations. To optimize the panel for application with degraded DNA samples, which are commonly encountered in forensic analysis, we have significantly reduced the amplicon size of the INDELs and developed a new multiplex panel. The panel has an amplicon size ranging from 50 to 153 base pairs, with a mean of 93 base pairs. It could be amplified by polymerase chain reaction in two multiplex reactions, which were then combined for electrophoretic separation and identification of the individual products in the ABI3130 four-color DNA analyzer. The results of the new panel were fully validated.

Key words: Forensic DNA; Insertion-deletion polymorphisms; DNA; INDELs