

## DNA-based Parentage Testing: How useful is it for Sri Lanka?

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Polymerase Chain Reaction (PCR) based typing of highly polymorphic short tandem repeat (STR) loci is widely used overseas for parentage testing. Objective of this study was to assess how useful DNA-based parentage testing is for Sri Lanka.

Twenty nine cases of parentage testing were done in our unit during the first year of its existence (May 2002 – May 2003). Of these cases, 27 were for legal purposes on court orders. The other two were requests from families wanting to resolve disputes over parentage amicably. In each case, genomic DNA was extracted from blood or from buccal mucosal cells taken from the (putative) mother, child and putative father. DNA was then amplified by PCR targeting at least nine STR loci of CSF1PO, TPOX, THO1 (CTT triplex), F13A01, FESFPS, vWA (FFv triplex), D16S539, D7S820, D13S317 (Silver III triplex), F13B, and LPL. PCR products were visualized by polyacrylamide gel electrophoresis followed by silver staining. DNA profiles of mother, child and the putative father were obtained from at least 9 STR loci by comparing with an allelic ladder marker for each locus. They were then matched to determine the parentage relationships.

In 20 (74.0%) of the legal cases, STR typing established the putative father as the biological father of the child. In the remaining seven (26.0%), the claim for accused to be the biological father of the child was disproved. In both parentage cases to resolve family disputes, STR typing established the putative father/ mother as the biological father/mother of the child. In the 29 cases done so far, the youngest child was 2 months old whereas the oldest was 23 years. The age distribution of the mothers who underwent parentage testing ranged between 12-57 years. The above indicates that the availability of a DNA-based parentage testing service is useful for early settlement of family disputes over parentage in Sri Lanka.

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