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Establishment of paternity in a Sri Lanka population by DNA typing at three short tandem pepeat (STR) loci THO1,TPOX,and CSF1PO

Establishment of paternity is of crucial importance in court cases involving maintenance of children. Current methods employed in Sri Lanka, Which are based upon blood group analysis, are unable to positively identify the father, and can only be used for

exclusion of paternity. This has resulted in a large number of children in Sri Lanka being left destitute, due to inadequate proof of paternity. DNA profiling methods have been successfully employed in many countries to accurately establish paternity.

Increasingly, short tandem repent (STR) Loci are becoming the method of choice for such analyses. STR loci are composed of highly polymorphic tandemly repeated sequences of 1-7 base pair in length. Assignment of alleles at such loci can be performed with a high degree of accuracy, due to the use of allelic ladders.

Here we report the use of three polymorphic short tandem repeat (STR) loci, CSF1PO, TPOX, and Th01 to establish the genotype of nine Sri Lankan children and their parents. DNA samples were amplified at the three loci by Polymerase Chain Reaction using primers for the three loci, and analyzed by poly acrylamide gel electrphoresis. Genetic analysis accurately revealed the paternity of the nine Sri Lanka children.
We also report the Paternity Index (PI) for the three STR loci CSF1PO, TPOX, and TH01 for the Sri Lanka population as being 7.94, calculated by analyzing the three STR loci in 118 unrelated Sri Lankans. The Paternity Index reveals how many times more likely it is that the man being tested is the father, rather than a randomly selected individual.