

APPLIED BIOSYSTEMS IDENTIFILER® MULTIPLEX STR KIT'S ACCURACY AND RELIABILITY AS COMPARED TO EXTENSIVE RFLP METHODS IN PATERNITY TESTING: A CASE STUDY

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Very few studies comparing STR and RFLP testing in application to paternity casework have been published. We have carried out a DNA paternity comparison study between STR and RFLP testing. This study compares the Identifiler® Multiplex STR kit's loci accuracy and reliability to extensive RFLP methods in paternity testing; namely:

1. In its ability to exclude non-fathers
2. In its ability to achieve probability of paternity and power of exclusion of greater than 99.9% in cases when the alleged father is not excluded

ARM I:

The goal of this portion of the study was to determine Identifiler's® loci ability to exclude non-fathers as compared to the RFLP method of testing (as defined above).

Samples from 300 cases involving Caucasian, Black, and Hispanic alleged fathers that were shown to be excluded from paternity on at least two independent VNTR loci by RFLP methodology were analyzed using Identifiler's® STR loci. Average number of exclusionary loci per case and residual Combined Paternity Index for non-exclusionary loci were determined. In cases where STR testing failed to exclude a non-father, Combined Paternity Indices were calculated.

ARM II:

The goal of this portion of the study was to determine Identifiler's® loci ability to achieve probability of paternity and power of exclusion of 99.9% or higher in cases when the alleged father is not excluded.

Samples from 300 cases involving Caucasian, Black, and Hispanic alleged fathers that were not excluded and the above outlined criteria were met using independent VNTR loci by the RFLP method of testing were analyzed with Identifiler® STR loci. Combined Paternity Indices and Power of Exclusion achieved by STR loci were determined for each case. Values were compared with values obtained by VNTR loci testing by the RFLP method.