# WHEN RFLP AND STR ANALYSIS WORK TOGETHER

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## The Case

The relatives of a young woman, who was deaf and presented mental handicap manifestations, filed a suit against a man of 41 years old. He was the alleged father of a child after forcing her to have sexual relationships. The young woman was not able to express her feelings and thoughts during the trial.

## The Analysis

Biological samples were obtained from the mother, the child and the alleged father. STR analysis was carried out with a commercially available Silver Stain kit in order to visualize their genetic patterns. The STR markers used for this case were CSF1PO, TPOX, TH01, F13AO1, FESFPS, vWA, D16S539, D7S820, D13S317, F13B and LPL. The results supported an inclusion with a Paternity Index (PI) of 73.971 and a Probability of Paternity (PP) of 98.666%.

The fact that the PP was below to the expected value to be considered like a "practically proven paternity", prompted us to study an additional locus, the HPRTB, because the child was a girl. The alleged father and the child alleles did not match. To determine if this fact was because of a point mutation or due to an exclusion result, we expanded the number of markers to be analyzed. The additional five markers were studied by RFLP. D5S110 (LH1 probe), D4S139 (PH30 probe), D1S7 (MS1 probe), D8S358 (CEB42 probe) and D2S44 (YNH24 probe) loci demonstrated a clear exclusion pattern that rejects undoubtedly the paternity of the alleged father.

## Conclusion

This peculiar case shows that RFLP is a very robust technique and sometimes the STR analysis needs to be complemented with it, specially in cases when PP is close but do not reach the 99.9 % value. Probably the threshold for STR analysis should be considered much higher than for RFLP, to achieve the same specificity. This fact should be accomplished by using a larger number of STR markers.