

FUN WITH MIXTURES

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EU countries that joined the Prüm Treaty are now using new STR chemistry that employ new European Standard Set (New ESS) loci. These New ESS kits are in comparison to the previous generation more sensitive and effective. Therefore DNA analysts all around the forensic world have to tackle with the interpretation of more highly complex mixtures in everyday routine.

This time consuming and sometimes quite difficult process could be solved by the use of various software programs available on the market today that help with interpretation of complex DNA mixtures and statistical calculation.

Our lab decided to test the ArmedXpert™ (NicheVision Inc., USA) software that seems to be a possible tool for simplifying the evaluation of DNA mixtures. This software solution is without a hassle able to calculate statistics including Random Match, Likelihood Ratios, CPE/CPI (RMNE), Single Source and relatedness and displays possible genotypes from all the potential individuals (including up to three contributors) and more than that, all the equations that are used for calculations are shown during the process. Moreover to this the use of the ArmedXpert™ software is in concordance with the ISFG guidelines for the mixture interpretation (Gill et al. 2006).

Although the work with the ArmedXpert™ requires more “human effort”, the hardware requirements are way less demanding than as it is usual with other software on the market.

We present results of the statistical calculation/interpretation of a complex DNA mixture retrieved from the rape case that have been processed by the ArmedXpert™ software.