



GenoProof Mixture 3

Your expert system for complex forensic DNA mixtures



Our quality management is certified to ISO 9001:2015.

GenoProof Mixture 3 is a complete solution for analysis of forensic DNA mixtures in high-throughput. It covers the whole analytic workflow from DNA profil analysis, the statistical evaluation of mixtures with exclusionary and common probabilistic approaches to genotype deconvolution. It analyses several hundreds of thousands forensic DNA traces, reference samples and DNA mixtures per year worldwide.

INCLUDES: fully continuous model

All-in-one

Experienced: developed with forensic scientists and proved itself in more than 1 million real crime cases within the last years

State-of-the-Art: Use of fully continuous approach for likelihood ratio calculation

Use all information from the DNA profile with the fully continuous model

Deconvolution of the genotypes of all mixture components

Direct comparison of results of LR calculation via binary, semi-continuous and fully continuous approach and comprehensive quality control

User-friendly operation and project management including report functionality

Faster than other: optimized algorithms for faster calculations

1

Perform raw data analysis

2

Create projects

3

Perform calculations

4

Quality control & Export results

The Simple Solution for Difficult Cases



Probabilistic genotyping

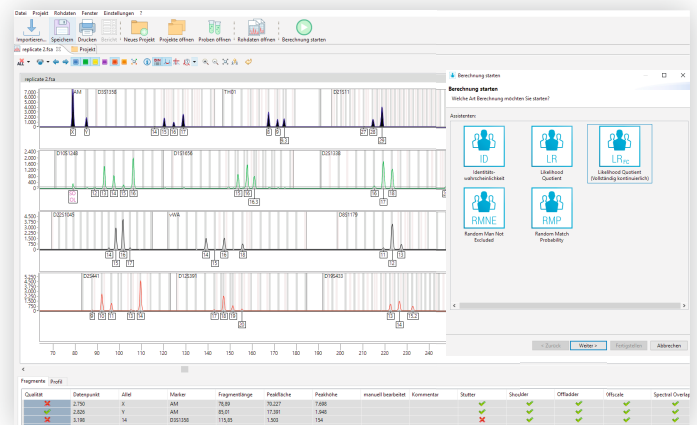
The fully continuous approach of GenoProof Mixture 3 enables you to resolve complex DNA mixtures. The software is modelling allele peak heights of genotype constellations based on parameters like template DNA, strength of degradation, allele size, amplification efficiency, replicate multipliers and homo-/heterozygosity depending on contributors, marker, test kit and device. GenoProof Mixture 3 provides a statistical weighting of all possible genotype constellations, which can explain the given DNA mixture, using Markov Chain Monte Carlo (MCMC) simulations. All algorithms were optimized to deliver an excellent run-time behaviour also on ordinary desktop computers. It is also possible to calculate an LR for a mixture when a contribution from a genetic relative of the suspect is proposed.

To simplify your analyses, a comprehensive reference database consisting of allele frequencies of various populations, commercial test kits and size standards is included in GenoProof Mixture 3 and can be adopted by the user.

In addition to results calculated using the fully continuous approach, the results of the binary and semi-continuous model are displayed for a direct comparison. A separate LR calculation using the binary or the semi-continuous model is possible. Doing so, subpopulations can be considered optionally. Also other biostatistic calculations like probability of identity, RMP or RMNE are implemented. GenoProof Mixture 3 provides tools for convergence diagnostics during MCMC to assess the quality of the calculation. This transparency helps you to rightly adjust relevant parameters such as to double burn-in accepts and iteration steps.

Raw data analysis with EasyRead

GenoProof Mixture 3 offers a direct import of fsa/hid files from your sequencer, so no additional software or data is needed. qualitytype EasyRead technology provides highly sophisticated size and allele calling algorithms for high-throughput raw data



analysis. This genotyping tool supports the automated analysis of commercial and in-house multiplex PCR kits for autosomal and gonosomal markers. Additionally, import of CODIS-files and analyzed raw data from third party software is possible.

Validation

GenoProof Mixture 3 has been validated in cooperation with forensic laboratories based on test and case samples to verify the functionality of the software and to determine limitations. We performed our validation according to SWGDAM guidelines for validation of probabilistic genotyping systems.

Reporting

Results, project data and raw data can be exported in csv format. Additionally, direct print of projects, samples, results and electropherograms is possible. Profile data can be exported in CODIS format.

Established and approved

Since 2008 GenoProof Mixture has been used in different certified legal medicine institutes, forensic DNA police labs as well as state or private labs worldwide. To ensure a high quality of your daily work according to ISFG or SWGDAM recommendations, it additionally offers artifact filters and a developmental validation.

The banner features a background image of a female scientist in a white lab coat and glasses, smiling. On the left, there is a white box with the text 'Test now!' in blue, followed by 'Get a free trial version of GenoProof Mixture 3 for 60 days.' in black. To the right of the text is a large blue QR code.