STRmix™ is expert forensic software that can resolve previously unresolvable mixed DNA profiles. Developed by global leaders in the field, it uses a fully continuous approach for DNA profile interpretation, resolving complex DNA mixtures worldwide.

FAST
STRmix™ interprets complex DNA results in minutes.

ACCESSIBLE
STRmix™ software runs on a user’s PC, without the need for high-speed computing.

ENABLING
STRmix™ can easily be understood and explained in court by DNA analysts. STRmix™ is a breakthrough for forensic analysts as it can assist investigations using DNA evidence that was previously considered too complex to interpret. The software has been developed by New Zealand Crown research institute ESR, with Forensic Science South Australia (FSSA).

WITH STRmix™ YOU WILL BE ABLE TO:
- interpret DNA results faster
- combine DNA profiles from different kits in the same interpretation
- compare profiles against a person of interest and calculate a likelihood ratio
- resolve previously unresolvable, complex DNA mixtures with no restriction on the number of contributors
- use more of the information in a DNA profile, and model any type of stutter
- search complex, mixed DNA profiles against a database.

RESOLVE MIXED DNA PROFILES without reference to known contributors.
ENTER contributor number range when performing a deconvolution.
MODEL any type of stutter observed within your STR profiling kit.
COMPARE REFERENCE DNA PROFILES to single source and mixed DNA profiles and provide a statistical weighting.
INTERPRET DNA PROFILING DATA generated by any autosomal STR profiling kit.
INTERPRET DNA PROFILES from a range of starting template DNA concentrations.
USE LABORATORY-SPECIFIC SETTINGS to perform calculations suited exactly to that laboratory’s results.
SEARCH A DECONVOLUTED DNA PROFILE directly against a database without the need to interpret a single source component.
CALCULATE multiple LRs from multiple reference inputs to a previously run deconvolution (LR Batch tool).
PERFORM a large number of in-silico specificity tests on a profile-by-profile basis (Hd True Tester tool).

BATCH multiple deconvolutions or other STRmix™ functions (such as interpretation, LR from Previous, and Database Search) in a queue, allowing the user to run them sequentially.

COMBINE multiple amplifications of the same DNA extract - even when generated with different multiplexes – into one interpretation.

ACCOMMODATE DATA generated by protocols demonstrating increased stochastic variation and nonzero allelic drop-in rates, for example elevated PCR cycle number and enhanced CE injection methods.

INCLUDE RELATED INDIVIDUALS as alternate propositions in the likelihood ratio.

CARRY OUT FAMILIAL SEARCHES against a database, searching for close relatives of contributors to mixed DNA profiles.

GENERATE fully configurable (and if required, retrospective) reports including a CODIS report.

PASSWORD PROTECT default settings and kit settings.
HOW DOES STRmix™ WORK?

STRmix™ combines biological modelling and mathematical processes to interpret a wide range of complex DNA profiles. Using well-established statistical methods, the software builds millions of conceptual DNA profiles. It grades them against the evidential sample, finding the combinations that best explain the profile. A range of Likelihood Ratio options are provided for subsequent comparisons to reference profiles. Using a Markov Chain Monte Carlo engine, STRmix™ models any types of allelic and stutter peak heights as well as drop-in and drop out behaviour. It does this rapidly, accessing evidential information previously out of reach with traditional methods.

PUBLISHED DATA

The following papers describing the biological model, mathematics, performance and validation of STRmix™ have been published:


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INSTITUTE OF ENVIRONMENTAL SCIENCE AND RESEARCH (ESR)
ESR uses the power of science to solve complex problems with the potential to affect the lives of all New Zealanders. It is the sole source provider of forensic services to the New Zealand Police while its comprehensive knowledge of the presence and interpretation of DNA is utilised across the country and around the world.

FORENSIC SCIENCE SOUTH AUSTRALIA (FSSA)
FSSA provides independent, objective expert scientific opinions and evidence to the justice system and community of South Australia undertaking a comprehensive range of forensic case work in pathology, biology, toxicology and chemistry.

STRmix LIMITED
STRmix Limited is a newly formed subsidiary of ESR, and was founded to better serve international customers of STRmix™.