

STRboost™ Protocol

STRboost™ is a novel reagent that substantially enhances multiplex PCR amplification reactions used for human identification applications, resulting in improved accuracy, sensitivity and precision. Including STRboost in amplification reactions helps resolve stochastic effects typically associated with sample degradation or inhibition (e.g. peak balance issues, allele dropout, and suboptimal peak height definition). STRboost is ideal for generating DNA profiles from difficult samples, such as those containing inhibitors (e.g. humic acid, hemetin), degraded samples, or derived from limited sources (e.g. trace evidence and low copy number).

STRboost is easy to incorporate into existing workflows. Analysts can continue use of their own cycling conditions and equipment. The reagent is compatible with commercially available genetic identification kits such as ABI's Identifiler™ and Promega's PowerPlex 16™ Systems and does not interfere with automated detection systems (e.g. ABI 3100 PRISM Genetic Analyzer).

Kit Components

- STRboost, 300 reactions, catalog #63401-011; 50 reactions, catalog #63401-001 or 5 reactions catalog #63400-001
- Protocol

Storage

Use within 6 months of purchase date for optimal product performance.

Enhancing STR reactions

When using STRboost, there is no change to your standard multiplex STR analysis protocol. Simply add STRboost to amplification reactions.

The following is an example of a multiplex PCR amplification reaction containing STRboost using the AmpF λ STR® Identifiler kit (ABI).

Example: Multiplex PCR Amplification

<u>Reaction</u>	
Genomic DNA (1 ng)	5 μ l
PCR reaction mix	10 μ l
Primer F set	5 μ l
AmpliTaq® Gold polymerase	0.5 μ l
STRboost	2.5 μ l
Water	+ 2.5 μ l
<hr/>	
FINAL VOLUME	25 μ l

Example: PCR Cycling Protocol

95°C	11 min	} x28 cycles
94°C	1 min	
59°C	1 min	
72°C	1 min	
60°C	60 min	
4°C	∞	

The resulting PCR product can be used directly in downstream applications without further purification.

Example: Sample preparation for ABI PRISM 310 Genetic Analyzer

1. Combine the necessary amount of the following reagents in a single microfuge tube as shown:

(number of samples+2) x 24.5 µl Hi-Di Formamide
(number of samples+2) x 0.5 µl GeneScan-500 LIZ Size Standard

2. Vortex the tube to mix. Spin the tube briefly in a microcentrifuge.
3. Aliquot 25 µl of Hi-Di Formamide/GeneScan-500 LIZ solution into Genetic Analyzer sample tubes.
4. Add 1.5 µl PCR product containing STRboost per tube.
5. Mix by pipetting up and down.
6. Seal each tube with a septum.
7. Continue with standard sample preparation protocol.

Samples can be used with all the major human identification kits, including:

- AmpF λ STR[®] Identifiler PCR Amplification Kit¹
- AmpF λ STR[®] Profiler Plus[®] ID PCR Amplification Kit¹
- AmpF λ STR[®] Profiler Plus[®] COfiler[®] PCR Amplification Kit¹
- AmpF λ STR[®] MiniFiler[™] PCR Amplification Kit¹
- AmpF λ STR[®] Yfiler[®] PCR Amplification Kit¹
- PowerPlex[®] 16 System²
- PowerPlex[®] Y System²
- GenePrint[®] Fluorescent STR Systems FFFL Multiplex²

¹Applied Biosystems, Inc. (Life Technologies); ²Promega Corp.

For more information, please contact technical services at
contact@biomatrica.com or
866-379-6879