**AmpF™STR® Identifiler® Plus PCR Amplification Kit**

- Amplifies the same loci as the Identifiler® kit* with enhanced performance, data quality, and efficiency for casework samples
- Helps improve performance on severely inhibited casework samples through the use of a high-performance PCR buffer system and optimized thermal cycling parameters
- Yields higher peak heights from low-level samples and minor contributors in mixtures to facilitate interpretation
- Enables analytical flexibility by utilizing fully validated 28- and 29-cycle protocols
- Maintains the small amplicon size range of the Identifiler® kit (<360 bp) for recovery of information from degraded samples; works in conjunction with the Quantifiler® HP and Trio DNA Quantification kits as well as the MiniFiler® kit* to help maximize recovery from heavily degraded samples
- Available in four convenient kit sizes: 50, 100, 200, and 1,000 reactions to meet laboratory workflow needs

**Introduction**

The AmpF™STR® Identifiler® Plus PCR Amplification Kit was developed specifically to address the needs of forensic casework laboratories. The Identifiler® Plus kit utilizes the same primers and allelic ladder as the Identifiler® kit, and harnesses robust PCR amplification technology to enable a new level of performance, data quality, and efficiency. Since its introduction in 2009, the Identifiler® Plus kit has helped forensic analysts recover interpretable results from a wide range of DNA evidence samples with confidence.
Improved performance on inhibited samples
The Identifiler® Plus kit has been designed to overcome high levels of PCR inhibition and promote more robust and efficient amplification. The formulation enables results from samples that could not be analyzed using the previous Identifiler® kit (Figure 1).

Greater sensitivity
The buffer and master mix enhancements in the Identifiler® Plus kit promote robust amplification—even in samples that do not contain PCR inhibitors. Purified samples amplified with the Identifiler® Plus kit yield peak heights 40–100% higher than those of the Identifiler® kit, without any increase in the number of PCR cycles or injection times (Figure 2). In addition, the validation of two different cycle number protocols (28 and 29) enables the laboratory to adapt the amplification to standard input samples and those containing low levels of DNA.

Mixture analysis and interpretation
The Identifiler® Plus kit facilitates the analysis of casework mixtures, which often contain PCR inhibitors, and where the minor component may be present at a very low level. The sensitivity, capability to overcome inhibition, and heterozygote and intracolor balance afforded by the Identifiler® Plus kit allow easier and more reliable analysis and interpretation of mixtures than was previously possible (Figure 3).

Data recovery power
The Identifiler® Plus kit maintains the Identifiler® kit’s allelic ladder and 5-dye configuration. This configuration allows for optimal locus spacing and amplicon size ranges no greater than 360 bp, enabling better data recovery from degraded samples as compared to multiplex systems with significantly larger amplicon size ranges. For heavily degraded samples, as detected by the Quality Index available in the Quantifiler® HP and Trio DNA Quantification Kits, the MiniFiler® kit has been designed to work in conjunction with the Identifiler® Plus kit, utilizing miniSTR technology to help maximize recovery of information. The Identifiler® Plus kit maintains primer sequences to help ensure genotyping concordance for samples previously typed using the Identifiler®, Identifiler® Direct, Profiler Plus®, COfiler®, SGM Plus®, NGM®, NGM SElect®, NGM SElect® Express, and recently introduced GlobalFiler® and GlobalFiler® Express PCR Amplification kits, and facilitate comparison with existing DNA databases.
Complete validated solution

The Identifiler® Plus kit is part of the most comprehensively validated systems for STR-based human identification. The PCR reaction components, primer sequences, and amplification protocols have been developed, optimized, and validated together with Applied Biosystems® instrumentation and software to provide specific, robust amplification. Validation experiments for the Identifiler® Plus kit were performed by Thermo Fisher Scientific scientists according to the DNA Advisory Board and the Scientific Working Group on DNA Analysis Methods (SWGDAM) Revised Validation Guidelines for use in human identification testing. However, each laboratory using the Identifiler® Plus kit should perform its own internal validation studies to ensure that the products and services it obtains from Thermo Fisher Scientific satisfy or will satisfy the applicable guidelines used by the forensic community and are fit for the laboratory’s human identification applications.

The Identifiler® Plus kit is subjected to rigorous quality control testing to help ensure consistent performance. Thermo Fisher Scientific develops and manufactures its products in accordance with ISO 9001 quality system requirements. Additionally, a Certificate of Analysis is available upon request that confirms that the specific combination of components within each lot meets quality assurance testing specifications.

Figure 3. An example of a casework sample that yielded no profile when analyzed with the Identifiler® kit but yielded a high-quality, interpretable mixture profile with the Identifiler® Plus kit. For both kits, 1 ng of input DNA and 28 cycles of amplification were used.
Packaging options
The Identifiler® Plus kit is available in four convenient sizes of 50, 100, 200, and 1,000 reactions to support a wide variety of laboratory throughput requirements and Green Packaging initiatives.

The 1,000-reaction kit contains identical reagents to the 200-reaction Identifiler® Plus kit. To help laboratories control for and minimize the potential of reagent contamination, as well as to minimize waste, the AmpFl STR® Identifiler® Plus PCR Amplification 1,000-reaction kit packaging features include:

- Five sets of the 200-reaction kit, individual-use screw cap tubes packaged together in one box:
  - AmpFl STR® Identifiler® Plus Master Mix, 10 tubes, 1 mL/tube
  - AmpFl STR® Identifiler® Plus Primer Set, 5 tubes, 1 mL/tube
  - AmpFl STR® Control DNA 9947A, 5 tubes, 0.3 mL

- Five individual boxes of allelic ladder:
  - AmpFl STR® Identifiler® Plus Allelic Ladder, 1 tube each in 5 boxes; 0.05 mL/tube

Materials provided with the AmpFl STR® Identifiler® Plus PCR Amplification Kits

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<tr>
<th>Product</th>
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<tr>
<td>AmpFl STR® Identifiler® Plus Master Mix (contains enzyme)</td>
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<td>AmpFl STR® Identifiler® Plus Primer Set</td>
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<tr>
<td>AmpFl STR® Identifiler® Plus Control DNA 9947A (0.1 ng/μL) of a known genotype</td>
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<td>AmpFl STR® Identifiler® Plus Allelic Ladder</td>
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Ordering information

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<td>GeneScan™ 500 LIZ® Size Standard</td>
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<td>GeneScan™ 600 LIZ® Size Standard v2.0</td>
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<tr>
<td>Matrix Standard Set DS-33 [d-FAM®, VIC®, NED®, PET®, LIZ® dyes] for use with 3100, 3100-Avant, 3130, 3130xl, and 3500 systems</td>
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Validation Support and Training for AmpFl STR® Kit Implementation  
Contact sales representative

Reference:  

Find out more at lifetechnologies.com/hid

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