

Powerful discrimination plus optimal performance with the Yfiler Plus PCR Amplification Kit

The Applied Biosystems™ Yfiler™ Plus PCR Amplification Kit enables multiplex amplification of the 17 Y-STR marker set included in Applied Biosystems™ AmpFℓSTR™ Yfiler™ kits, as well as 10 new Y-STRs. Powered by 6-dye Chemistry™ technology, the Yfiler Plus kit was designed for optimal performance and unprecedented discrimination power, helping you obtain accurate results for challenging samples in less time. In particular, the inclusion of seven rapidly mutating Y-STRs with mutation rates above 1×10^{-2} helps to improve resolution of paternal lineages and discriminate between closely related males.

The kit also enables direct PCR amplification with single-source samples.

The Yfiler Plus kit is approved for use by laboratories generating DNA profiles for inclusion in the US National DNA Index System (NDIS) CODIS database.



Y-STR applications

- Sexual assault
- Mixture analysis
- Missing persons and mass disaster identification
- Biogeographic ancestry
- Male lineage
- Familial searching

Why choose the Yfiler Plus PCR Amplification Kit?

- Improved discrimination capacity through new, highly discriminating markers
- Enhanced performance with degraded samples and PCR inhibitors
- Improved genotyping accuracy through expanded allelic ladder and virtual bins
- Concordant with existing data in reference haplotype databases
- Increased workflow efficiency with faster time-to-results

Yfiler Plus PCR Amplification Kit performance for casework samples

Discrimination capacity of haplotypes

The inclusion of 10 additional Y-STRs in the Yfiler Plus kit provides an increased discriminatory capacity (DC) and number of unique haplotypes (UH). The discriminatory capacity was determined by dividing the number of different haplotypes by the number of samples in that population. A unique haplotype is defined as one that occurs only once in a given population. The number of unique haplotypes is usually less than the number of individuals tested in any given population (Table 1).

Increased workflow efficiency

The Yfiler Plus kit is designed to process complex casework samples, even with trace quantities of male DNA in the presence of a high level of female DNA (Figure 1). The kit can also process single-source reference samples using direct PCR amplification from buccal cells (Figure 2) and blood samples on treated paper substrates, without the need for sample purification; blood samples collected on untreated paper substrates and treated with Applied Biosystems™ Prep-n-Go™ Buffer; and buccal samples collected on swab substrates and treated with Prep-n-Go Buffer (data not shown).

Table 1. Discriminatory capacity and number of unique haplotypes for four US populations.

Y-STR kit	African American n=557		Caucasian n=553		Hispanic n=391		Asian n=340	
	DC(%)	UH	DC(%)	UH	DC(%)	UH	DC(%)	UH
Yfiler kit	98.2	547	95.7	510	95.9	374	91.5	311
Yfiler Plus kit	99.6	555	98.5	525	98	383	94.4	321

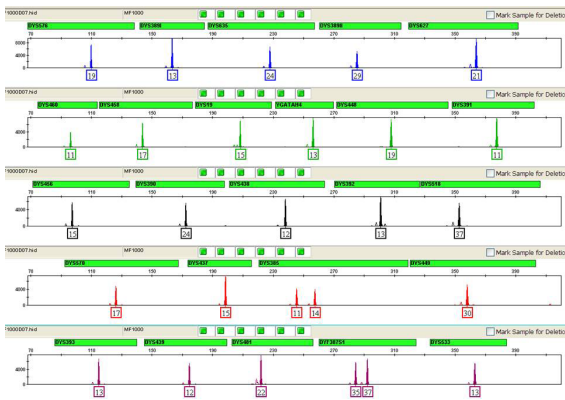


Figure 1. A 1:1,000 male/female mixture, using the Yfiler Plus PCR Amplification Kit and 30 cycles on an Applied Biosystems™ 3500 Series Genetic Analyzer.

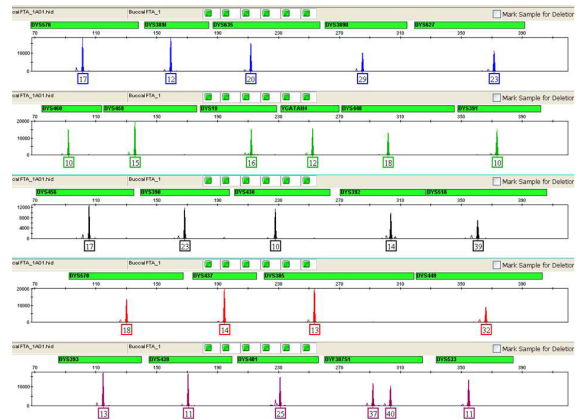


Figure 2. Direct amplification using the Yfiler Plus PCR Amplification Kit on a 1.2 mm FTA™ card punch of buccal cells and 27 cycles on a 3500 Series Genetic Analyzer.

Ordering information

Product	Size	Cat. No.
Yfiler Plus PCR Amplification Kit	100 rxns	4484678
	500 rxns	4482730

Find out more at thermofisher.com/yfilerplus