



PowerPlex® Fusion 6C System

Performance Packed.



Performance Packed.

The PowerPlex® Fusion 6C System offers rapid-cycling, direct-amplification capabilities and superior sensitivity along with SE33 and three Y-STR loci for improved mixture interpretation and unbeatable performance with challenging casework samples.

Additionally, the system is optimized and QC-tested to work at full- or half-volume reactions with some protocol modifications recommended depending on sample type.

This six-color system allows co-amplification and fluorescent detection of the new 20 CODIS Core Loci: CSF1PO, D3S1358, D5S818, D7S820, D8S1179, D13S317, D16S539, D18S51, D21S11, FGA, TH01, TPOX, vWA, D1S1656, D2S441, D2S1338, D10S1248, D12S391, D19S433 and D22S1045 (1) plus Amelogenin and DYS391 for gender discrimination. Penta D, Penta E and SE33 also are included to increase discrimination and allow searching of databases that contain profiles with these loci. Eleven loci are less than 250bp, making them ideal for working with degraded samples. Finally, two rapidly mutating Y-STR loci, DYS570 and DYS576, are included in the multiplex to help determine the number of contributors in a mixture.

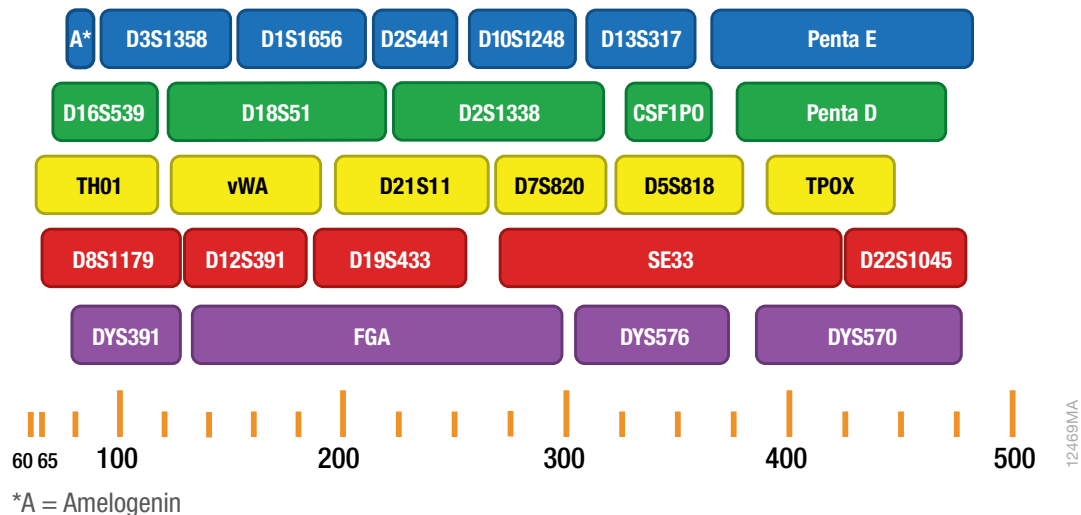


Figure 1. Configuration of the PowerPlex® Fusion 6C System. The PowerPlex® Fusion 6C System allows co-amplification and fluorescent detection of 27 loci, including all CODIS and ESS loci: D3S1358, D1S1656, D2S441, D10S1248, D13S317, D16S539, D18S51, D2S1338, CSF1PO, TH01, vWA, D21S11, D7S820, D5S818, TPOX, D8S1179, D12S391, D19S433, SE33, D22S1045, FGA and DYS391, as well as DYS576, DYS570, Penta E, Penta D and Amelogenin.

Enhanced Sensitivity

The PowerPlex® Fusion 6C System reliably produces complete profiles from as little as 125pg of human DNA and useable, partial profiles from DNA inputs lower than 125pg.

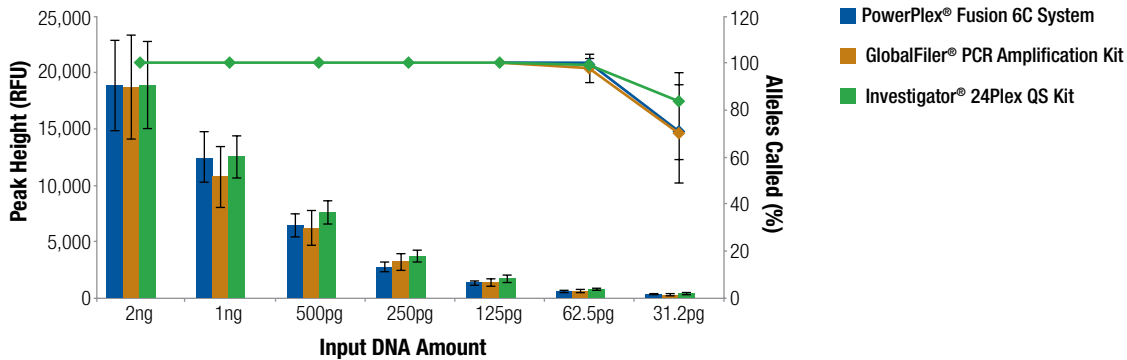


Figure 2. The average peak heights (vertical bars) and percentage of alleles called (diamonds) at varying amounts of 2800M Control DNA. Error bars represent the standard deviation of the mean from triplicate amplification reactions.

Superior Inhibitor Tolerance

Casework samples are typically laden with inhibitors and can often require laboratories to re-amplify samples and repeat analyses. The PowerPlex® Fusion 6C System contains a robust buffer system to meet those challenges head on and increases your chances for success with even the most difficult samples.

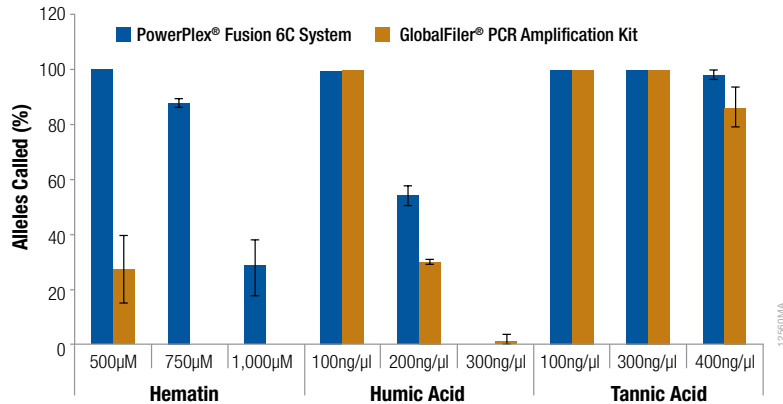
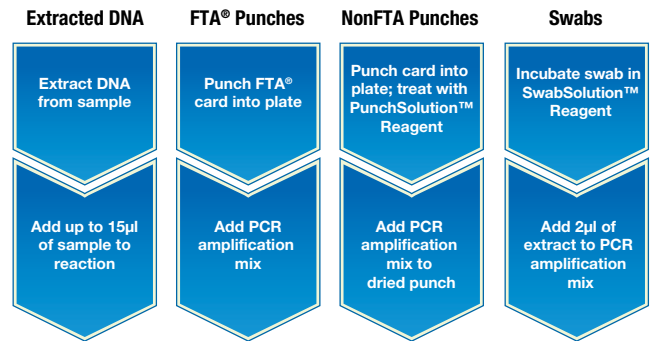


Figure 3. Resistance to PCR inhibitors. Human genomic DNA (1ng) was amplified with the indicated kits in the presence of common PCR inhibitors. Amplified products were separated on an Applied Biosystem® 3500 Genetic Analyzer (1.2kV, 15-second injection). Percentage of alleles detected is indicated for each system.

Direct-Amplification Capabilities

The PowerPlex® Fusion 6C System allows direct amplification from unwashed FTA® card punches as well as pretreated nonFTA card punches and typically used swabs to streamline workflows and expand your laboratory's sample throughput.

To maximize the cost effectiveness of STR systems, many laboratories incorporate the use of half-volume (12.5µl) amplification reactions in their workflow. The PowerPlex® Fusion 6C system is designed and QC-tested to work at full- or half-volume reactions with various protocol modifications recommended depending on sample type.



Cycling time ~65 minutes for all applications

FTA® Punch Analysis

Buccal Sample on FTA® Card

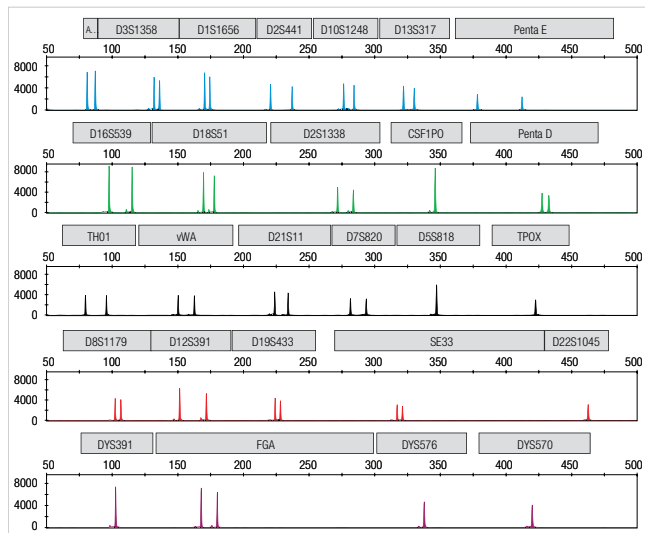


Figure 4. Direct amplification of two 1.2mm punches from a buccal sample on an FTA® card. Two 1.2mm punches were added to a plate, and PCR amplification mix was added to the punches following the recommended protocol for 12.5µl reactions. Amplified products were separated using an Applied Biosystems® 3500 Genetic Analyzer (1.2kV, 15-second injection).

Buccal Swab Analysis

Swab Sample

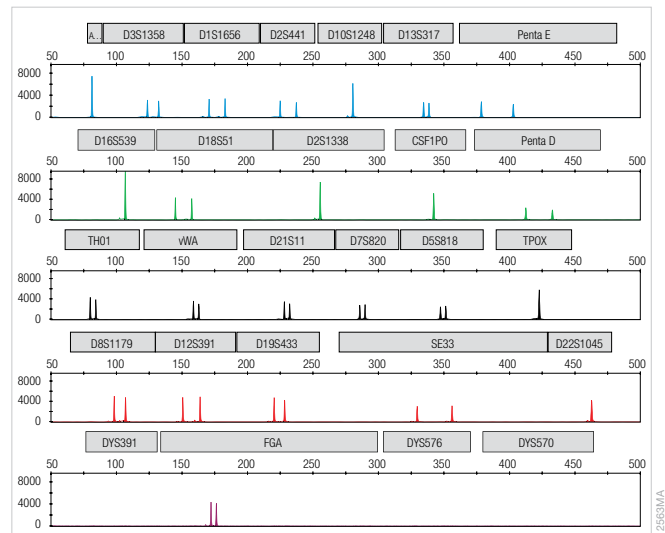


Figure 5. Direct amplification of DNA from buccal swabs. A buccal swab was pretreated with SwabSolution™ Reagent as recommended in the SwabSolution™ Kit Technical Manual. Following incubation, 2µl of extract was added to the PCR amplification mix using the recommended protocol for 12.5µl reactions. Amplified products were separated using an Applied Biosystems® 3500 Genetic Analyzer (1.2kV, 15-second injection).

PowerPlex® Fusion 6C System

NonFTA® Punch Analysis

Buccal Sample on Bode Buccal DNA Collector™ Device

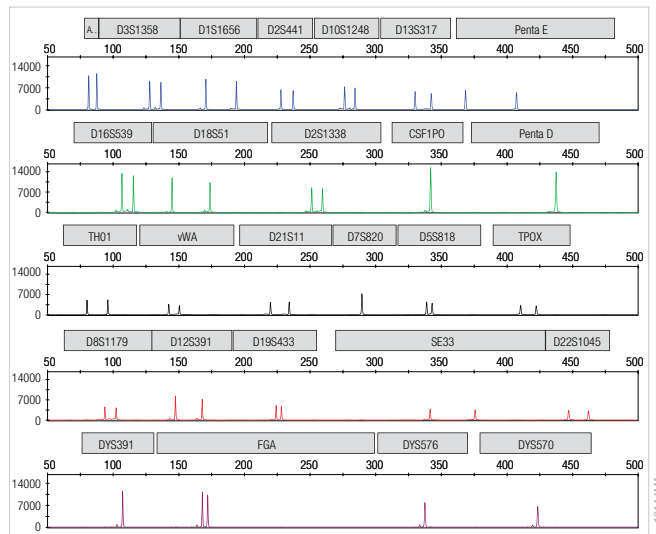


Figure 6. Direct amplification of a single 1.2mm punch from a buccal sample collected using the Bode Buccal DNA Collector™ device. A punch was pretreated with PunchSolution™ Reagent as recommended in the *PunchSolution™ Technical Manual*. Following incubation, PCR amplification mix was added to the dried punch following the recommended protocol for 12.5µl reactions. Amplified products were separated using an Applied Biosystems® 3500 Genetic Analyzer (1.2kV, 15-second injection).

Product Information

The PowerPlex® Fusion 6C System is compatible with the Applied Biosystems® 3500 and 3500xL Genetic Analyzers as well as Applied Biosystems® 3130 and 3130xL Genetic Analyzers with Data Collection Software Version 4.0 with the DC v4 6-Dye Module v1 License (Life Technologies).

Each PowerPlex® Fusion 6C System contains:

- PowerPlex® Fusion 6C 5X Master Mix
- PowerPlex® Fusion 6C 5X Primer Pair Mix
- 2800M Control DNA, 10ng/µl
- Water, Amplification Grade
- PowerPlex® Fusion 6C Allelic Ladder Mix
- WEN Internal Lane Standard 500

For more information, visit:
www.promega.com/PowerPlexFusion



The Power to Solve



Ordering Information

Product	Size	Cat.#
PowerPlex® Fusion 6C System	50 (or 100 direct-amp) reactions	DC2705
	200 (or 400 direct-amp) reactions	DC2720
PowerPlex® 6C Matrix Standard	5 preps	DG4900
PunchSolution™ Kit	100 preps	DC9271
SwabSolution™ Kit	100 preps	DC8271
5X AmpSolution™ Reagent	100 preps	DM1231

Maxwell, Plexor and PowerPlex are registered trademarks of Promega Corporation. AmpSolution, Differex, DNA IQ, Identity Automation, PowerQuant, PunchSolution, Slicprep and SwabSolution are trademarks of Promega Corporation.

Applied Biosystems is a registered trademark of Applied Biosystems. Bode Buccal DNA Collector is a trademark of the Bode Technology Group, Inc. FTA is a registered trademark of Flinders Technologies, Pty, Ltd., and is licensed to Whatman.GlobalFiler is a registered trademark of Life Technologies. Investigator is a registered trademark of Qiagen GmbH Corp.

Products may be covered by pending or issued patents or may have certain limitations. Please visit our Web site for more information.