



# Cross-Platform Workflow for the Promega PowerSeq 46GY System

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DUBLIN, FL, SEPT. 13-15, 2021

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# Growing Adoption of Sequencing Technologies

hsc

## Developmental Validation of a MPS Workflow PCR-Based Short Amplicon Whole Mitochondrial Genome Panel

Journal Article | 10.1002/for.1452


Journal Article | 10.1002/for.1452

## Case Study: First NGS Resolved Case Leading to Conviction

Journal Article | 10.1002/for.1452

## Cold Cases Heat Up with New Forensic DNA Methods

Journal Article | 10.1002/for.1452



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# Growing Adoption of Sequencing Technologies

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International Journal of Legal Medicine (2021) 135:1425–1432  
https://doi.org/10.1007/s00414-021-02569-0

SHORT COMMUNICATION

## Progress in the implementation of massively parallel sequencing for forensic genetics: results of a European-wide survey among professional users

Theresa E. Gross<sup>1,2</sup>, Jan Fleckhaus<sup>1</sup>, Peter M. Schneider<sup>3</sup>

Received: 11 January 2021 / Accepted: 10 March 2021 / Published online: 13 April 2021  
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- 46% of participating laboratories own a MPS platform
- An additional 27% of participating laboratories have ordered a platform (or planning to within 24 months)

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## CE Cross-Platform Studies hsc<sup>++</sup>

*Electrophoresis* 2004, 25, 2227-2241 2227

**Pierre Kouril**  
**Helen G. Green**  
**Susan Hartley**  
**Darren Jordan**  
**Shaun Laheic**  
**Richard J. Livett**  
**Kam W. Tsang**  
**David M. Ward**

**Evaluation and validation of the ABI 3700, ABI 3100, and the MegaBACE 1000 capillary array electrophoresis instruments for use with short tandem repeat microsatellite typing in a forensic environment**

The demand for high-throughput DNA profiling has increased with the introduction of national DNA databases and has led to the development of automated methods of short tandem repeat (STR) profile production; however, a potential bottleneck still exists at the age group... *Proceedings of the International Symposium on Forensic Science, London, 2004*

The Forensic Science Service, Southwark, UK

The demand for high-throughput DNA profiling has increased with the introduction of national DNA databases and has led to the development of automated methods of short tandem repeat (STR) profile production; however, a potential bottleneck still exists at the age group... *Proceedings of the International Symposium on Forensic Science, London, 2004*

of processing 95 : ■ available. In this p:

- Comparing resolution

7



## CE Cross-Platform Studies hsc<sup>++</sup>

*Journal of Forensic Sciences* 2004, 49, 1000-1005 1000

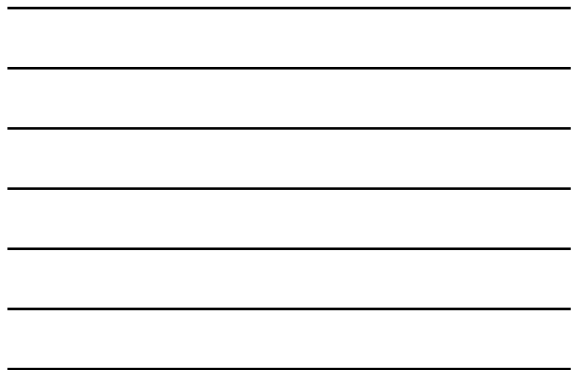
**Robert S. McLean**  
**Marin G. Eisenberger**  
**Booze Budnick**  
**Dana Rabaha**  
**Patricia M. Fainoff**  
**Clayton J. Sponer**  
**Joseph Bennett**  
**Tim M. Stauder**  
**Deborah K. Mann**

**Post-injection hybridization of complementary DNA strands on capillary electrophoresis platforms: A novel solution for dsDNA artifacts**

*Journal of Forensic Sciences* 2004, 49, 1000-1005

- The first two panes are performed on a 3100 system.
- The second is on a 310.
- The 310 denatures the samples better due to its heat plate and eliminates the splitting, however, the dsDNA product is still present.

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## CE Cross-Platform Studies hsc<sup>++</sup>

*Journal of Forensic Sciences* 2004, 49, 1000-1005 1000

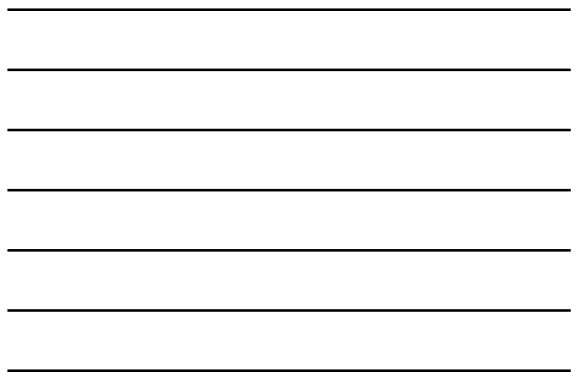
**Robert S. McLean**  
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**Dana Rabaha**  
**Patricia M. Fainoff**  
**Clayton J. Sponer**  
**Joseph Bennett**  
**Tim M. Stauder**  
**Deborah K. Mann**

**Null allele sequence structure at the DYS448 locus and implications for profile interpretation**

*Journal of Forensic Sciences* 2004, 49, 1000-1005

- Help identify and understand unexpected results
- Apparent null allele actually deletion and shift

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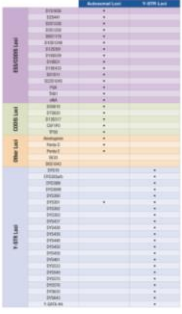






## Methodology

PowerSeq® 46GY System

**Multiplex includes:**

- 22 autosomal STR loci
  - CODIS and European Standard Set are included in multiplex
- Amelogenin
- 23 Y-STR loci
- Primer pairs designed to generate amplicons 140-300 bp in length

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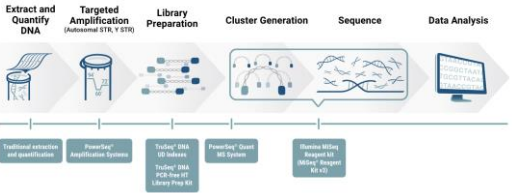
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## Methodology



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## Acknowledgments

- Promega
  - Jeff Shaw
  - Spencer Hermanson
  - Anupama Gopalakrishnan
    - Technical support and provided a portion of the reagents for this study
- SoftGenetics
  - Teresa Synder-Leiby
  - Sarah Copeland
    - Technical support and access to GeneMarkerHTS software



Research Team



Connect with us: 

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Questions hsc



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Questions (For those watching virtually) hsc



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