INCREASED CAPABILITY FOR DATABASE AND CASEWORK SAMPLE ANALYSIS FROM A SINGLE STR KIT

Marty Ensenberger, Jonelle Thompson, Patricia M. Fulmer, Benjamin E. Krenke, Cynthia Sprecher, Doug Wieczorek, Doug Storts
Promega Corporation, Madison, WI

Short tandem repeat (STR) analysis remains the primary method for DNA-based human identification. Forensic typing, criminal databasing and relationship testing laboratories in many regions of the world use a standard set of 13 STR markers selected by the US FBI for the Combined DNA Indexing System (CODIS).

The PowerPlex® 16 HS System [1,2] has been developed on the well-established PowerPlex 16 System which coamplifies the 13 CODIS STR markers plus the low-stutter, highly-discriminating Penta E and Penta D markers and Amelogenin. Analysis can be performed on common Applied Biosystems capillary electrophoresis platforms. The PowerPlex® 16 HS System offers a robust hot-start *Taq* DNA polymerase included in a convenient Master Mix. This improved system offers excellent sensitivity and increased resistance to common PCR inhibitors. This, coupled with the flexibility of the PowerPlex® 16 HS System allows for more interpretable data and less need for re-amplification of samples previously deemed "difficult" due to limited DNA or the presence of inhibitors. Additionally, a robust assay allows direct analysis of storage card samples, a common sample type for database laboratories. As a result, the PowerPlex® 16 HS System can increase productivity in both database and casework applications [3].