EIGHT-DYE POWERPLEX® STR SYSTEM FOR IMPROVED HUMAN IDENTIFICATION ON THE SPECTRUM CE SYSTEM

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Traditional capillary electrophoresis (CE) is still widely used for forensic DNA typing, mainly due to its time- and cost-effectiveness. Currently available CE technology limits multiplex STR systems to 5 or 6 color channels. The new Spectrum CE system offers increased spectral capacity, thus allowing 8 color multiplex STR systems while also supporting existing 4-, 5- and 6-color systems. The Promega PowerPlex® 35GY System simultaneously amplifies 35 different loci, including the 20 CODIS core loci, Amelogenin and DYS391 for gender identification, as well as an internal positive control. Ten additional Y-STR loci are included to assist with forensic casework on sexual assault evidence or to enable familial searching. The availability of 8 colors allows the inclusion of smaller, more numerous loci, thus increasing a laboratory's chance of success with degraded samples. Additionally, improved multiplex configurations will provide more complete and informative results with inhibited casework samples, while the narrower range of product amplicon sizes will enable more consistent results with variable "direct amp" samples.

Data will be presented demonstrating the performance of the PowerPlex® 35GY System, focusing in particular on sensitivity, inhibited and degraded samples as well as direct amplification.

Our results highlight the advantages of the new 8-color system in comparison to existing 4-, 5- and 6-color systems while also demonstrating the capabilities of the Spectrum CE System.