# GENOTYPING OF CHALLENGING SAMPLES USING EIGHT-DYE POWERPLEX® STR AND SPECTRUM CE SYSTEMS

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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 a Quality Indicator (QI). Ten additional Y-STR loci are included to enable familial searching and to assist with forensic casework on sexual assault evidence. The availability of 8 colors allows the inclusion of smaller, more numerous loci, thus increasing a laboratory's chance of success with challenging samples.

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